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FA 90 UPDATE

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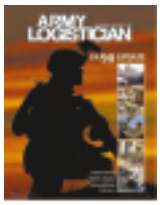

Cover: The article beginning on page 2 describes some recent initiatives affecting functional area (FA) 90, multifunctional logistics. The importance of FA 90 is growing because most Army logistics units now are multifunctional and Army officers are exposed to multifunctional logistics earlier in their careers than in the past. The cover shows examples of soldiers in the logistics branches—Transportation, Medical Service, Aviation Logistics, Quartermaster, and Ordnance—at work in support of their ultimate customer, the warfighter in the field.

This medium is approved for the official dissemination of material designed to keep individuals within the Army knowledgeable of current and emerging developments within their areas of expertise for the purpose of enhancing their professional development.

By Order of the Secretary of the Army:

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REPLY TO
ATTENTION OF

September 13, 2004

Dear *Army Logistician* Readers:

This is an exciting time to be an Army logistician. Along with our colleagues in the other components of the Department of Defense, we face the dual challenge of prosecuting the Global War on Terrorism while simultaneously managing an unprecedented transformation to a campaign-quality Army that is ready to support joint and expeditionary missions.

As the new commander of the Army Combined Arms Support Command and Fort Lee, I also serve as the Chairman of the Board of Directors of the *Army Logistician* professional bulletin. I welcome this duty because I understand the need for all of us in the logistics community to communicate with each other at this time of accelerating change. As a logistician—whether you are a soldier, an Army or Defense civilian, or a contractor—you need not only to stay abreast of what is happening in Army and Defense logistics but also to contribute to the process of transformation by sharing what you think with other logisticians. *Army Logistician* offers you an excellent forum for doing this.

I urge you to view *Army Logistician* as *your* publication. Assume ownership of the magazine; it's your professional journal. Read it. Write for it. Make sure it circulates in your activity. Use it to stimulate discussions. If you have a great idea, or if your organization is doing something you think the rest of the Army needs to know about, then write an article and send it to the *Army Logistician* staff. If you disagree with an article in *Army Logistician*, write a letter to the editor or even develop your own article in rebuttal.

Remember that contributing to *Army Logistician* can help you as well as your colleagues in the logistics community. Writing for *Army Logistician* looks good on your resume and will earn you a subscription to the magazine for 2 years. For more information, as well as to view copies of all issues since the magazine began in 1969, visit the *Army Logistician* Web site at www.almc.army.mil/alog.

Sincerely,

Ann E. Dunwoody
Major General, U.S. Army
Commanding

FA 90: An Update on the Multifunctional Logistician Program

BY MAJOR GENERAL TERRY E. JUSKOWIAK, USA (RET.), AND LIEUTENANT COLONEL ROBERT L. SHUMAR

Recent developments in functional area 90 mirror the increasing importance of multifunctional logistics in officers' careers.

> The Army of tomorrow relies on the Army of today to accept the challenge and responsibility for the development of leaders for the future.
> —General Carl E. Vuono
> Chief of Staff of the Army, 1987–1991

The Army is undergoing its most comprehensive transformation since the early years of World War II. As a result of the changing battlefield and threat, the majority of the logistics units we are now fielding are multifunctional. Junior logistics officers are being exposed to multifunctional logistics experiences earlier in their careers, often in combat. Our logistics units require smart, competent, and confident leaders who have the training and experience to operate successfully, and not only as part of an Army team but also as part of a joint or multinational force. We owe our Army and our Nation nothing less.

Our multifunctional logistics program has come a long way since its inception in 1992. The proponent for functional area (FA) 90, Multifunctional Logistics, is the Army Combined Arms Support Command (CASCOM) at Fort Lee, Virginia. CASCOM, working with the combat service support (CSS) branch proponents and the CSS Division at the Army Human Resources Command (HRC), has undertaken several initiatives to address the reality of the predominantly multifunctional environment in which our logistics leaders are required to operate. These initiatives will ensure the relevance and readiness of our logistics officer corps during this period of dynamic change and into the future and will strengthen the FA 90 career field.

This article addresses some of the current major initiatives that impact all logistics officers who aspire to become the prime movers in our profession: competent and confident multifunctional logisticians.

DA Pamphlet 600–3

Department of the Army Pamphlet (DA Pam) 600–3, Commissioned Officer Development and Career Management, is the Army officer's primary career guide. This pamphlet is used by HRC career managers, Department of the Army selection boards, personnel system staff officers, and officers in the field to make critical career decisions that impact individual officers and the Army as a whole. Since the last major update to the pamphlet in 1998, much has changed in the Army, especially in organization and business practices. A newly updated chapter on FA 90 (chapter 29) acknowledges the expanding role of multifunctional logistics and reflects an ongoing process of maturing that began when FA 90 was established in 1992.

The updated chapter on FA 90 clearly details the training and jobs required to become fully qualified as a multifunctional logistician. Much of the haze that obscured what was needed to be qualified as a multifunctional, as opposed to a functional, logistician has been cleared. Here are some of the more significant changes—

- Service in a logistics position outside of the officer's basic branch is recognized as a multifunctional experience, and that service is credited accordingly.
- A specific list identifies FA 90 qualifying positions at the major and lieutenant colonel grade levels.
- A new policy allows an HRC panel to evaluate retention of the FA 90 designation by lieutenant colonels who have not participated in the FA 90 career path.

This last initiative ensures that only experienced, competent, qualified logisticians fill our multifunctional command positions, G–4 slots, and other critical Army and joint logistics staff officer billets. The first HRC panel met this year and reviewed the files of 208 Ordnance, Quartermaster, Transportation, and Medical Service Corps and Aviation Logistics officers from the fiscal year 2004 lieutenant colonel selection list. The panel certified 149 officers in FA 90 (71.6 percent) and decertified 59 (28.4 percent).

The message is clear: If you want to be a board-validated FA 90 officer, you must meet specified minimum qualifications. Gone are the days when you could carry the FA 90 certification without having served in FA 90 by the time you reached major (P) [promotable].

Command Realignment

Part of an ongoing assessment of logistics units and their functions was a review of current commands on the lieutenant colonel-level command selection list (CSL) to see if those commands were in the appropriate category. This is part of a continual effort to keep our logistics branches in step with Army Transformation and with evolving missions and functions across the force. As a result of this assessment, several functional logistics commands were moved to the multifunctional command categories. Two new multifunctional command categories, 6SM (materiel management) and 6ST (Surface Deployment and Distribution Command), also were created at the lieutenant colonel command-level. (See the chart above). The result is that there are now 104 commands in the multifunctional logistics command category. Of these, 75 are multifunctional tactical (6S). Only multifunctional logisticians can compete in categories 6S and 6SM. The 6ST category is open only to officers in FA 90 and branch code 88, Transportation Corps. (See the chart on page 4 for details.)

LTC Command Selection List Migration

BR	Category	Title	Current	Proposed	MOS	Change
OD	6G	Ammunition	2	2	91	-
	6DR	Advanced Individual Training (AIT)	5	5	91	-
	6I	Explosive Ordnance Disposal (EOD)	4	4	91	-
	6KR	Ammunition Plant/Depot	5	4	91	-1
QM	6E	Supply – Tactical	2	0	90	-2
	6ER	Supply – Training Support System (TSS)/AIT	11	3	92	-8
	6G	Petroleum, Oils, and Lubricants (POL) – Tactical	2	2	92	-
	6GR	POL – TSS	3	3	92	-
TC	6F	Transportation – Tactical	14	14	88	-
	6LR	Surface Deployment and Distribution Command – TSS	12	0	88	-12
	6FR	AIT	3	3	88	-
FA 90	6S	FA 90 – Tactical	75	75	90	-
	6SM*	FA 90 – Materiel Management Center	0	2	90	+2
	6SR	FA 90 – TSS	6	15	90/88 91/92	+9
	6ST*	FA 90 – Surface Deployment and Distribution Command	0	12	90/88	+12

* Indicates new categories

This chart shows the changes in lieutenant colonel-level commands. Note that multifunctional commands requiring FA 90 are increasing and functional commands are decreasing.

Currently, the HRC Colonels Division is studying the realignment of colonel-level commands to ensure that they mirror the categories and changes at the lieutenant colonel level. Clearly, if a logistics officer desires to command, multifunctional logistics offers the greatest number of opportunities. However, a few branch specialty commands will still exist and will likely have a place in our Army for the foreseeable future. (See the chart on page 5.)

CPL Certification Annotated on ORBs

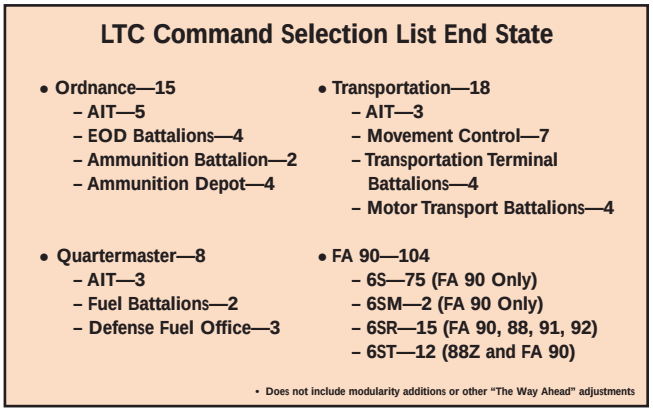
As many logisticians know, the process of becoming a Certified Professional Logistician (CPL) is very arduous. Of those who try, only a few actually earn the coveted designation of CPL from SOLE—The International Society of Logistics. The CPL designation is a professional statement of competence and a personal statement of commitment to logistics as a career. In the past, however, CPL status could not be documented in official military records. Commanders in the field and career managers also had no way of tracking who in the military logistics community had this prestigious certification—until now.

In an acknowledgment of the importance of the CPL designation for multifunctional logisticians, CASCOM, with the CSS Division at HRC, has gained official recognition of CPL as a professional certification. The certification now can be annotated on section X of an officer's Officer Record Brief (ORB). Tom Edwards, the Deputy to the Commanding General of CASCOM, summarizes the relevance of CPL certification for Army logisticians—

> Professionals take examinations to certify their competence whether they are doctors, lawyers, accountants, or physical therapists. The Army cannot be excellent in logistics without excellent logisticians. I encourage any Army logistician who considers himself or herself a professional to study for and pass the Certified Professional Logistician examination.

TAADS Review of Logistics Positions

To assist career managers in assigning officers across the Army, CASCOM, with the proponents for the Transportation, Ordnance, and Quartermaster branches, spearheaded a major review of over 10,000 officer positions in The Army Authorization Documents System (TAADS). The rewrite of DA Pam 600–3 increased the timeliness of a review of positions to determine if they met the criteria to be considered multifunctional.



This chart shows the final state of lieutenant colonel-level commands after the changes outlined in the chart on page 3.

The result of the review was a recommendation that over 2,000 positions be recoded to FA 90, other logistics basic branches, or other Army functional areas. Another finding was the need for a designation for logistics officers performing duties that require officers qualified by education, training, or experience in any of the logistics branches but not requiring the expertise of a multifunctional logistician (FA 90).

With the rewrite of the FA 90 chapter of DA Pam 600–3, the criteria separating the skills and jobs of a functional logistics officer from those of a multifunctional logistics officer now are delineated more clearly. However, the staff working on the TAADS review faced a dilemma: Hundreds of officer positions of all grades clearly needed a logistician but did not require the experience of a multifunctional logistician or a specific functional logistics officer. Examples of these positions included Reserve Officer Training Corps (ROTC) instructors, recruiting command positions, aides de camp, inspector general positions, battalion S–1s, and various indefinable staff officer positions. This dilemma resulted in a recommendation to establish a logistics officer immaterial code or a logistics officer designation.

Logistics Officer Designator

The rewrite of the FA 90 chapter of DA Pam 600–3 involved all of the principal logistics proponents. As the proponent staffs worked on the TAADS review, they were careful not to dilute FA 90-coded billets with positions that did not require the skills of a multifunctional logistician or were not optimum career steps to achieving multifunctional qualification. The TAADS review staff favored establishing a logistics officer designator similar to the old 03A, logistics officer immaterial designator, which existed before 1993. A logistics officer designator—perhaps a code such as 90Z—could be used on TAADS documents to identify logistics officer positions that do not require the skills of a specific functional logistician or a multifunctional logistician.

Although the logistics officer designation has not yet been approved by the Army Staff, the concept calls for every Transportation, Ordnance, and Quartermaster officer to receive the designation (90Z as an example) on graduation from the basic course. Medical Service Corps and aviation logistics officers will receive the designator upon graduation from the Combined Logistics Captains Career Course (CLCCC) or the Logistics Executive Development Course (LEDC). Officers who lose FA 90 certification on the recommendation of a HRC panel will maintain 90Z status.

The goal of establishing a logistics officer designator is to establish clearly the credentials (training, education, and operational assignments) required to support the FA 90 designator and to tie all logisticians, from a personnel management perspective, to a single logistics officer identity.

Feasibility of a Single Logistics Corps

Probably no other topic has evoked as much passion in discussions among military logisticians as the establishment of a single logistics branch or corps. However, consolidations of branches and occupational specialties are a very real possibility in the future. "The Army in 2020" White Paper asserts that the Army of 2020 will have only three branches. This might be extreme, but fierce competition for resources throughout the Department of Defense and the Federal Government, as well as the potential for increased efficiencies, make consolidations and eliminations appear both logical and beneficial. Now is the time, in this exciting period of transformation—when real change is being accomplished—to look hard at the logistics institutions and what they *could* and *should* look like in the next 10 to 15 years. A future force with one Army logistics corps may become a reality.

Should we and can we move to one Army logistics corps? Some may assert that we have a logistics corps now in FA 90 and in the structure of our officer education. For years, the logistics proponents have led the Army in combining functional resources. The Captains Career Course is combined at Fort Lee, Virginia, for Transportation, Ordnance, Quartermaster, and some Aviation Logistics and Medical Service Corps officers. Our CSS combat development efforts achieve much synergy by being combined at CASCOM. All of our logistics captains and majors are eligible to attend the Support Operations Course and LEDC at the Army Logistics Management College at Fort Lee and are encouraged to pursue certification

as a CPL. These education avenues provide a common, predominantly multifunctional logistics foundation. Though numerous logistics jobs require functional expertise, the majority of logistics commands are multifunctional, and junior logisticians are getting exposed to multifunctional experiences earlier in their careers. By the time logisticians become lieutenant colonels, branch affiliations blur as officers from the core logistics branches of Transportation, Ordnance, and Quartermaster move through similar assignments and experiences.

FA 90 Life Cycle Development Model (Active Component)

Years of Service	0	5	10	15	20	25	30
	LT	CPT	MAJ		LTC	COL	
Schools	Basic Officer Leader Course	CLCCC ★ Functional Area Decision	MEL 4 ★ Career Field Decision		Senior Service College		
Primary FA Qualification Positions	Detachment/ Company Exec Officer Platoon Leader Battalion Staff Officer Developmental Positions	Company Commander Battalion, Brigade, Squadron, Group, Division Support Command (DISCOM), Division Logistics Staff Officer Deputy Battalion Support Operations Officer Combined Captains Course Instructor CSS Combat Training Center (CTC) Observer-Controller (O/C) TDA HQ Logistics Staff Officer	Multinational Logistics Battalion, Squadron, Group, Special Forces Group, DISCOM Exec Officer, Support Operations Officer, Group or DISCOM S–3 MAJ-level FA 90 Command MAJ-level CSS Command not of basic branch Chief, Materiel Management Center (MMC) Deputy G–4 G–4 Plans Officer FA 90 Joint Staff Officer Log Ops Officer Log Staff Officer CSS CTC O/C TOE Brigade/Group S–4 Division Materiel Management Officer CSS Battalion or Squadron S–3 not of basic branch	Battalion Commander: Forward Support Battalion, Main Support Battalion, Corps Support Battalion, Division Support Battalion, Division Aviation Support Battalion, Stryker Brigade Support Battalion, Base Support Battalion, Garrison Major Army Command G–4/J–4 Division G–4 CSS Joint Staff Officer Log Assistance Officer (LAO) Log Staff Officer Chief, CSS CTC O/C Chief, Div or Corps MMC Corps Support Command, DISCOM, Corps Support Group, Area Support Group Executive Officer or Security Plans and Ops Deputy Dir or Branch Chief at Army, DOD, or Joint HQ	Brigade-level Command Corps G–4 Director of Logistics DA, Joint Chiefs of Staff, DOD Senior Log Staff Officer Senior Joint Staff Logistics Officer

FA 90 HRC Web Site: https://www.perscomonline.army.mil/opfa90/

The career path of a multifunctional logistician looks like this.

We logisticians are our own worst enemies when it comes to focusing on a logistics officer's branch. Our comrades in the combat arms and combat support branches recognize us corporately as *logisticians* and not by our affiliated logistics branches.

Arguably, we have been moving toward a single Army logistics corps since FA 90 was established in 1992. If we look at the ground we have covered over the last 12 years, including the initiatives described above and how our collective professional mindset has gone from a functional logistics outlook to a primarily multifunctional one, we all can be proud of our accomplishments. We Army logisticians are relevant, ready, and willing to embrace change, and we continue to evaluate ourselves and our processes so we can always provide the best support possible. However, before we totally plunge into a single Army logistics corps, we need to carefully study and resolve important issues regarding doctrine, organizations, training, materiel, leadership and education, personnel, and facilities. For example, our warrant officers and enlisted soldiers will be full members of any future logistics corps, but we will continue to count on them to be our premier functional logistics experts.

The Army Chief of Staff has stated clearly that everything is on the table for debate as we transform the Army—except our values. As professionals, we need to look at the concept of a logistics corps without being blindly bound by traditions, flags, branch insignia, and installations. It is far more important that we build the best possible Army to defend this country and purge parochial attitudes that inhibit our progress. Our current system of multiple logistics branches and the overhead they entail must be reviewed carefully. If multiple logistics branches create inefficiencies, waste resources, and fail to maximize readiness, then we need to consider consolidating them into a single Army logistics corps.

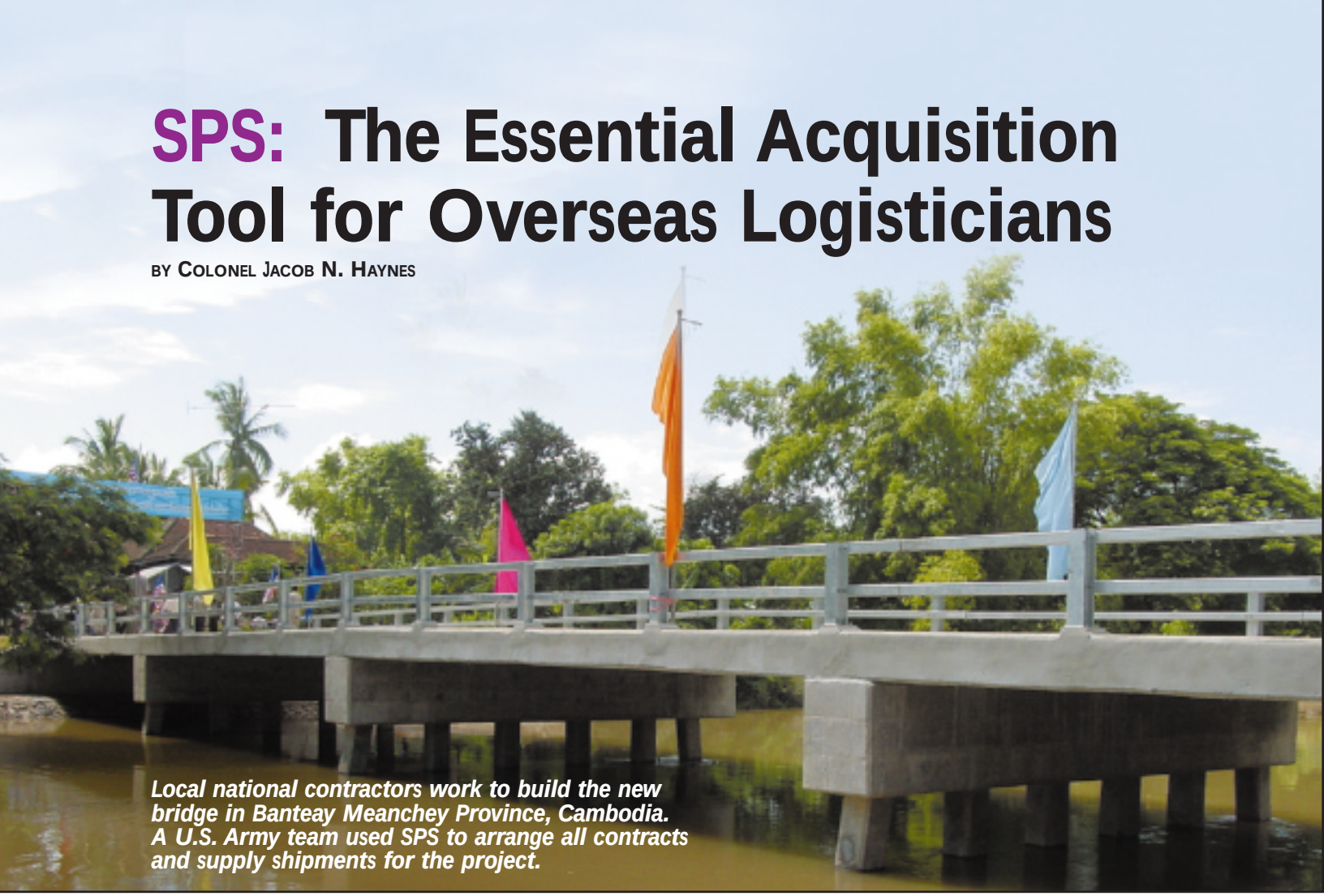
ALOG

Major General Terry E. Juskowiak, USA (Ret.), was the Commanding General of the U.S. Army Combined Arms Support Command and Fort Lee, Virginia, until 2 September. As of 1 October, he retired from active duty. He has a bachelor's degree in political science from The Citadel and an M.S. degree in contract and acquisition management from Florida Institute of Technology. General Juskowiak is a graduate of the Infantry Officer Basic Course, the Quartermaster Officer Advanced Course, the Army Command and General Staff College, the Industrial College of the Armed Forces, and the Army Logistics Management College's Logistics Executive Development Course.

Lieutenant Colonel Robert L. Shumar is the Chief of Functional Area 90 Personnel Proponency at the Army Combined Arms Support Command at Fort Lee, Virginia. He has a bachelor's degree in history from Virginia Polytechnical Institute and State University. He is a graduate of the Army Command and General Staff College.

SPS: The Essential Acquisition Tool for Overseas Logisticians

BY COLONEL JACOB N. HAYNES



Local national contractors work to build the new bridge in Banteay Meanchey Province, Cambodia. A U.S. Army team used SPS to arrange all contracts and supply shipments for the project.

The Standard Procurement System provides connectivity for logisticians supporting humanitarian missions.

The general public might assume that a humanitarian mission's crowning moments are like those experienced by Major Mark Johnson on 6 August 2003. That is when he sat on a grandstand with Cambodian and U.S. officials at a bridge dedication ceremony in Banteay Meanchey Province, surrounded by 20,000 cheering Cambodians eager to honor him and his team for building the new span.

But Johnson, the U.S. Army Pacific (USARPAC) contingency contracting officer assigned to the 45th Corps Support Group, and the logisticians he supports credit much of their success to the Standard Procurement System (SPS) software at their fingertips. After all, Johnson is the man who introduced the use of SPS for humanitarian assistance missions when he was assigned to work with the system as part of the Cobra Gold military exercise in 2001.

Since then, Johnson has assisted with humanitarian building projects in Guam, Bangladesh, Cambodia, Fiji, the Philippines, Thailand, and Vietnam—all with SPS by his side and only three to six people in his supporting contracting activity. Johnson's success with SPS is even more amazing when one considers that he was never formally trained on the system. "I literally got off the tank in Hawaii for my 30 days, was put on Cobra Gold, and the whole thing started rolling," he explains. "If we can do it based on those circumstances, then anybody can learn SPS. It's not rocket science."

The Right Tool: A Logistics Multiplier

When SPS began as an automated system for writing contracts in 1996, it was seen as the logical way to use technology to streamline an everyday task. The concept was to automate the basic procurement functions across the military services and civilian agencies—one standard system for the Army, Navy, Air Force, Marine Corps, 13 Department of Defense (DOD) agencies, and the logistics, acquisition, and financial management

communities. In the ensuing 8 years, SPS has evolved from theory to reality: a fully operational system that handled $48 billion in goods and services purchased in fiscal year 2003 alone.

As a key element supporting the goal of DOD's Business Management Modernization Program—to establish common enterprise architecture requirements for all DOD information technology systems in acquisition, logistics, and financial management—SPS's accomplishments in headquarters and garrisons are notable. For starters, thanks to SPS's automation, many business processes have been eliminated or improved to take advantage of time-saving measures. SPS not only has ensured that critically needed goods and services arrive on time to warfighters on the front lines, it also has reduced the number of administrative personnel needed to execute procurement functions.

SPS in the Field

"But a garrison is nice buildings with Muzak," cautions George Chavis of the Army Contracting Agency, the Army's SPS Desk Officer. "It's easy to follow the rules step by step there. In [a] contingency, you may be working on a street corner with a guy who doesn't speak English. The ultimate mission is to get the job done."

Humanitarian missions provide the perfect training ground for contingency war theaters like Iraq and Afghanistan. In a nutshell, U.S. officials in a foreign country submit specific project requests to their defense attaché office, which sifts through the embassy's objectives in deciding which projects to forward to the joint service commands. These commands review the lists they receive and turn in recommendations to the Joint Staff for approval. Each command then posts the official list of approved projects to the Army, Navy, and Marine Corps to divvy up for execution.

Projects follow one of two blueprints: humanitarian assistance, where the U.S. assistance team works with local contractors and materials, or humanitarian civic action, where U.S. troops support the project. Obviously, humanitarian civic action creates greater challenges because supporting troops means that contingency contracting personnel need to buy more than just materials for the project itself—they must procure everything from concrete mixers to bottled water. Sometimes, the logistics are as complicated as they were in Vanuatu, an island nation in the Pacific, where the contracting officer (KO) had to procure hotel accommodations for U.S. personnel, sea transportation to bring in communications equipment and construction rental equipment, and even air evacuation service to the nearest TriCare-approved medical facility.

Even arranging a simple peacekeeping exercise involves more than booking hotel rooms and meeting space, says Debbie Lampe, the Principal Assistant Responsible for Contracting for the Army Contracting Agency Southern Hemisphere. "I decided to participate in hands-on procurement for an exercise in Argentina in 2003. What an eye-opener! Everything from soldier theater clearance to the type of funding to use. It's a lot of hard work."

Many logisticians recall the pre-SPS days. "Under the old DOS system, it would take about 2.5 hours to get a purchase order into a vendor's hands," remembers Major Kenneth Buck, an Active Guard/Reserve soldier assigned to the 9th Regional Support Command in Honolulu, Hawaii. "Now my contracting officers have it down to about 10 minutes. It gives the vendor lead time to plan; your customer is a lot happier because he gets his product quicker. From my standpoint, it lets me manage the commodities so much better."

Time Savings

Debbie Lampe's team has relied on SPS for more than 2 years, both as a stand-alone version for the Directorate of Contracting at their base in Puerto Rico and as a mobile version—the Battle Ready Contingency Contracting System (BRCCS)—on their laptops. Each contracting officer operates independently in the field to manage a contract process from solicitation to award to closeout. He then returns to base, ready to hit the road again with his laptop computer on the next assignment.

Before BRCCS, KOs would spend hours after returning to their bases tediously rekeying information into the central database. To save time, they would cut corners by reducing 20 or so contract line item numbers to a single entry labeled "Lump Sum." After all, the goal was to get credit, and this strategy met everyone's needs. But logisticians lost valuable historical information in the process, which unintentionally created a deceiving picture that minimized the actual work involved.

"From a procurement standpoint, the biggest challenge of a humanitarian mission is finding a company that has the capability to help you," says Major Johnson. "For instance, in Southeast Asia, the general rule is 'No problem.' The next thing you know, you've just contracted a guy whose equipment is an ox and cart, and he doesn't own anything. Accurate histories mean you build a database to steer clear of the subpar companies for the next project in that country."

Because the SPS software offers a 25-percent reduction in labor time while lessening the need to keep separate manual spreadsheets, Debbie Lampe points out, historical information can be obtained at a price that few logisticians would refuse. Multiply that time savings by 10 to 15 missions a year across the 31 countries in her Central and South America territory, and Lampe's enthusiasm for SPS is understandable.

A Joint Effort

Yet Lampe cites the SPS software's onsite support and flexibility as its most valuable asset from a logistician's standpoint. For example, U.S. Army South currently oversees two simultaneous humanitarian missions in Honduras, but staff vacancies mean Lampe must use one KO to cover both. "So he'll start in one city in the morning, drive 6 hours to support the other mission, and SPS's laptop capability means he stays in touch with the first job the entire time. It's much better than a system that used to tie us to a central database."

One of those Honduran projects involves a 179-day rotation between Air Force and Army KOs. SPS makes it possible to conduct a smooth mission while eliminating the need for a learning curve for every new face at the camp. "The KOs work the contracts with no hiccups," Lampe observes. "That will be the critical key to the program's success when it's all said and done. Iraq is only the first of many future joint programs, where everybody has a piece of the pie when it comes to personnel. Each military branch can better manage their dollars, and it boils down to nothing more than a matter of a log-in and password."

Lampe's experiences highlight just how efficient the contingency world can be. For example, when several people are down range in an exercise, they can link laptops and tap into one primary database. By linking with one database, any assigned KO can create a contract without fretting later about whether or not he remembered to transfer that contract before packing for his next mission. "Say I'm in Nicaragua, and the Air Force sends two additional support personnel to get me through the initial setup," Lampe describes. "They may bring their own laptops, but by linking to mine they don't store anything. When they fly out in 2 weeks, I have everything and they took nothing. Yet they can work at the same time I am and do it without a holdup. SPS's flexibility certainly opens the door to more intermittent support in the field."

SPS also illustrates the message that Major General Terry E. Juskowiak, the commander of the Army Combined Arms Support Command at Fort Lee, Virginia, delivered to the Association of the United States Army meeting in October 2003: "Connectivity for logisticians on the battlefield is critical. Supporting information systems and communications must provide a '24/7' sense and respond capability." SPS's performance on humanitarian assistance missions spells only good news for tomorrow's maneuver sustainment and deployment.

Real Dollar Savings

Theoretically, SPS should cut the contracting workload so that fewer KOs are needed throughout the military. In reality, the sheer number of humanitarian projects around the globe negates the ability to reduce the manpower requirement, according to Lampe. "We're also business advisors, so we also do market research and onsite inspections. SPS gives us time to concentrate on all of our responsibilities."

A contingency mission's requirements for immediate action often lead to the use of verbal agreements with contractors. With older systems, KOs needed to call a vendor and say, "Go ahead, the paperwork will follow." Now, SPS means that if Buck's team needs a generator right away, his KO can quickly produce the appropriate contract, fund the deal, shoot it to the vendor, and have the order on its way in 10 minutes without resorting to the more easily disputed verbal agreements. Buck adds, "And we went from 30 file cabinets full of paper records to zero with SPS."

Major Johnson of USARPAC relies on SPS's extensive information and mobility to ensure that he is paying market prices for the myriad supplies on the logisticians' lists. By swapping databases with KOs previously stationed in a specific country, logisticians can research what they paid, for example, for bottled water on the last mission. "A new person can say, 'Wait a minute. Over the last 3 years [the price of] water only changed by a couple of baht, so why are you trying to charge me a 30 baht markup?'" Johnson points out. Multiply that 30 baht across the cost of everything from sand to cranes, and the money begins to add up. It's a real-life example of moving resources from the back office to the field, and America's warfighters reap the benefits. "It can make a significant difference because you'll always have a budget," Johnson comments. "You'll have to figure out where you stand and use competitive negotiation to get you back in that box."

At the end of the day, it's the ability to board an airplane on a moment's notice and head to the theater that Debbie Lampe prizes. "We're currently gearing up for a classified mission. That person [the KO] soon will grab the laptop, and we won't see him for we don't know how long. We'll lose communication, but everything he does will be captured in one location and downloaded on his return. SPS is a perfect tool in [a] contingency." **ALOG**

Colonel Jacob N. Haynes is the Program Manager for the Standard Procurement System. He has a B.S. degree from Winston Salem State University, an M.B.A. degree from Monmouth University, and a master's degree in strategic studies from the Army War College. He is a graduate of the Transportation Officers Basic and Advanced Courses, the Army Command and General Staff College, the Defense Systems Management College, and the Program Management Course.

Testing the Survivability of Logistics Information Systems

BY LIEUTENANT GENERAL LEO PIGATY, USA (RET.), AND COMMANDER JAMES C. WORKMAN, USN (RET.)

As logistics units have become more dependent on computer systems to sustain the warfighter, they have become more vulnerable to cyberattacks, whether from terrorists or hackers. Fortunately, a defense against cyberattack is coming.

Nobody knows technology like the Defense Advanced Research Projects Agency (DARPA). It has paved the way for countless innovations over the years, ranging from the Internet to unmanned aerial vehicles. As hardware is developed, prototypes can be performance-tested to make sure the development is on track. But what about the survivability of information systems? When it comes to information on the battlefield, how much robustness and security are enough? That is a question that DARPA sought to answer as part of its UltraLog project.

UltraLog Program Goals

Now in its fourth year of development, the UltraLog uses intelligent agent technology to show that large-scale, distributed-logistics command and control systems can survive under wartime conditions and severe cyber- and kinetic attacks. At its core, UltraLog is a high-speed logistics planning and execution system.

When presented with an operations plan (OPLAN), the UltraLog system responds by building a logistics support plan comprising two primary components: detailed time-phased force and deployment data (TPFDD) and a sustainment plan. The TPFDD provides detailed information about what gets moved, conveyances, routes, and start and stop times. The sustainment plan provides information on projected demand, refill, inventory on hand, and potential inventory shortfalls.

During the execution of an OPLAN, the UltraLog system dynamically reworks the transportation plan and recalculates materiel requirements as the operational environment evolves. For example, UltraLog will recalculate and update the plan to account for added or deleted units, delays in or the early arrival of units, and any changes in operating tempo (OPTEMPO).

The project uses a host of survivability technologies to buttress the agent network. The ultimate survivability goal is to deliver 70 percent of the system's performance despite the loss of 45 percent of its infrastructure, such as loss of computers or reduced central processing unit (CPU) memory. Of course, less loss of infrastructure would be expected to yield higher performance.

Functional Assessment

The individual technologies of UltraLog were tested in a laboratory environment. But would an integrated suite be both survivable and militarily useful? To determine this, DARPA brought in a functional assessment team that was from outside of DARPA and independent of its developers.

The assessment was run against a model of the Army's V Corps deployed to Southwest Asia. The model was built at the DARPA Technology Integration Center in Arlington, Virginia. Over 1,000 networked intelligent agents were constructed representing V Corps units, a Future Combat Systems (FCS) unit of action, corps and theater support, and stateside supply and distribution. [An intelligent agent is a software program that uses some degree of intelligence to execute a task without user supervision.] The scenario involved a complex operation requiring a 180-day deployment for units of the 1st Armored Division originating in Europe and the United States.

During the course of the operation, six major OPLAN changes were introduced that required significant replanning. Among these changes, separate hostilities were initiated that required the short-fuse deployment of the FCS unit of action for a 72-hour combat cycle. In all, the scenario involved hundreds

of military units, 28,000 major end items, and 33,000 personnel. UltraLog was the high-speed, survivable logistics planning and execution system for the scenario and was expected to rapidly generate high-quality TPFDD, respond to supply and transportation queries, perform real-time dynamic replanning during the execution of the operation, and produce detailed class I (subsistence), III (petroleum, oils, and lubricants [POL]), V (ammunition), and IX (repair parts) data—all while providing user-friendly graphical user interfaces.

The approach to the functional assessment was derived from standard military utility testing and evaluation methodologies. Two logistics measures of effectiveness were used—

- While the system is under cyber- or kinetic attack, does it provide useful warfighting information?
- Does the system produce an executable logistics plan?

The two logistics measures of effectiveness produced 5 logistics operational issues and 24 logistics measures of performance that assessed the system's continued ability to provide accurate, timely, and usable warfighting information. For the most part, standards were derived from the key performance parameters in the Global Combat Support System (GCSS) Capstone Requirements Document.

Testing Robustness and Security

Functional assessment experiments were designed to test the two key survivability features of robustness and security. The steps of the key robustness process in maintaining logistics functionality include detecting a missing or impaired agent (representing a military unit or a collection of military units), deciding how to react, and then remotely restarting the unit on a different computer and restoring all of its supply data on that computer. Another key process is maintaining the system's ability to function in the face of "service denial," which occurs when a cyberattack floods the computer network with so much communications traffic and superfluous data that the system is overloaded and grinds to a halt.

The key to functional logistics security is a secure execution environment with tamper-proof, secure mechanisms. The system needs to prevent unauthorized access as well as unauthorized operations by those who have access. The system also needs to prevent malicious information from being inserted. Security Red Teams launched 20 classes of cyberattacks against the network from both external and insider sources. [The performance of UltraLog's security function will be the subject of an article in the next issue of *Army Logistician*.]

The functional assessment of robustness ran over 170 experiments. These included—

- Degrading computer CPU resources by up to 75 percent. Excursions were run that degraded the entire system by 90 percent and selected units by 85 percent.
- Degrading memory (computer processing capacity) by up to 75 percent.
- Cutting communication links among various combat and support units.
- Degrading bandwidth along various communications links.
- Removing the logistics capability of support units in various supply chains. These were called, appropriately, "sledgehammer experiments."

But a true functional assessment is more than stresses caused by cyber- or kinetic attacks; the day-to-day logistics fog of war also must be included. To account for the disruptions created by the fog of war, a number of perturbations were injected simultaneously into the scenario. These included delaying deployments, changing unit OPTEMPO, and spiking demands for selected items of stock.

Typically, an experiment involved introducing a change to the OPLAN while simultaneously initiating one or more of the stresses listed above. For example, in one experiment, the arrival in theater of the 2d Brigade, 1st Armored Division, was delayed 5 days while communications were constrained to 56 kilobits per second between the already-deployed 1st Armored Division headquarters and its 1st Brigade and between the unit of action command element and the unit of action's 1st Combined Arms Battalion. Selected computers within the combined arms battalion also were disabled.

Another series of experiments focused on attacks against elements of the supply chain. In these, computers were knocked off the net for as many as seven support units. These included such units as the 102d POL Supply Company, the 592d Ordnance Company and the 47th Forward Support Battalion. As in the other experiments, perturbations also were introduced that forced the system to modify transportation and sustainment plans.

A series of logistics queries was used to measure how well the system performed in each experiment. For example, one transportation query was: Do the planned delivery dates and final delivery locations match the requested delivery dates and locations for the equipment and personnel of the 1–35th Armored Battalion, the 1–501st Aviation Battalion, and the 1–6th Infantry Battalion? A representative sustainment query was: What is the total amount of JP8 fuel requested by selected combat units that consume JP8?

Analyzing the data from the experiments involves comparing those data, which were produced while the

system was under stress, to "ground truth" baselines that contain known logistics solutions. (A "ground truth" baseline is a transportation or supply plan prepared in a benign environment based on unclassified, real-world databases.) Comparing a plan created while the system is under stress with a plan created without stress (a ground truth baseline plan) shows how well the system survived the stress. For example, the quantity of JP8 fuel identified in the experiment is compared to ground truth. The result then is scored based on utility curves that equate the quality of the answer to its military usefulness.

The UltraLog program uses intelligent agent technology to ensure that logistics information systems can function while under attack.

The functional assessment showed that UltraLog has remarkable robustness. The 170 experiments specifically used to test system robustness generally produced excellent military utility scores and consistently fell in the "Green" (acceptable) range, leading to the conclusion that progress toward program goals was on track and that proceeding with the final year of development was warranted. Areas targeted for improved robustness during this final year of UltraLog's development include reducing the time needed to replan, strengthening defenses against the cutting and degrading of communication links, and continuing to improve defenses against sledgehammer conditions (the removal of the logistics capability of support units in various supply chains).

Current State of the Program

Overall, UltraLog has provided significant evidence that intelligent agent technology can work in a distributed logistics information system. Experiments have shown that UltraLog could operate at military scales and complexities. In a system of over 1,000 agents processing 1.4 million tasks over a 180-day scenario, UltraLog reliably produced useful logistics information. Experiments simulated wartime infrastructure, including realistic bandwidth, and introduced a variety of severe infrastructure degradations such as the loss of computers; reduced CPU memory and bandwidth; continuous security probing; and loss of support unit capability caused by cyber- or kinetic attack. In most cases, including the most severe infrastructure losses, UltraLog protected logistics planning and execution.

The promise of UltraLog technology is beginning to receive recognition within the commercial sector as well as the Department of Defense. The commitment to build and maintain the core UltraLog software in the open source domain has led to its proliferation, with several commercial ventures actively working on applications that use the UltraLog code base.

UltraLog has proven that large numbers of interacting software agents can solve large-scale military logistics problems. The project has advanced the science of large agent systems demonstrating logistics functionality at realistic scales and problem sizes.

Using a plausible scenario, the UltraLog system was able to generate and maintain good TPFDD products in well under an hour over a range of force mixes. UltraLog reliably reworked logistics plans in less than 30 minutes to accommodate significant OPLAN changes.

One true measure of success for an advanced research project is the extent to which the technology is found useful and is carried forward after program completion. In its final year of development, UltraLog technology is finding a place in both Department of Defense and commercial applications. With programs such as the Army's FCS and the Office of the Secretary of Defense's Defense Readiness Reporting System incorporating UltraLog technology into development plans, UltraLog appears well positioned for eventual transition into future logistics information systems that indeed will be survivable. **ALOG**

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Planning for the Unexpected in a Theater of Operations

BY CAPTAIN JERRY D. VANVACTOR

Smoke grenades and orange cones are used to simulate smoke and fire.

It has been said that the more you sweat in peace, the less you bleed in war. Just because a unit deploys to a combat zone does not mean that readiness training should stop. Training should never stop, nor should it become so focused that it results in only one or two response criteria being exercised in various types of scenarios. A unit should determine which characteristics and problems are predictable and recurrent and which are fluke occurrences.

Although major disasters are low-probability events, they must be planned for because even small-scale incidents can detract from a maneuver commander's mission. The expense and effort of preparing for a potential crisis is an investment with little certainty of return. Often, the benefits of preparing for a disaster are invisible in the short term and are recognized only after an actual crisis occurs.

A common mistake in disaster planning is developing response criteria that are an extension of "routine" emergency measures. Actually, the reverse should be true. Adopting disaster-response criteria for all emergency planning could reduce training costs, permit agencies to become familiar with each other's personnel and response methods, and improve response to routine situations.

Crises generally do not render people stunned and unable to act. People will act on their own initiative and take what they believe to be appropriate actions. In fact, the public's willingness to help often overwhelms the responding agencies. Making this fact the focus of disaster planning helps to design response criteria based on what people most likely would do in a crisis situation.

Disaster Defined

What exactly is a disaster? According to the Federal Emergency Management Agency (FEMA), a disaster is an occurrence of a severity and magnitude that normally results in deaths, injuries, and property damage and that cannot be managed with routine procedures and Government resources. It usually develops suddenly and unexpectedly and requires immediate, coordinated, and effective response by multiple Government and private-sector organizations to meet human needs and speed recovery. It also requires the responding agencies to react to emergent situations in a nonroutine way under conditions of extreme urgency to maximize the sustainment of life, property, and resources. It is important to note that there are no size parameters in this definition. A disaster can be of any size and can occur at any time without warning.

Emergency Response Planning in Afghanistan

From July 2003 until April 2004, I served as the combat health support officer for the 1st Brigade, 10th Mountain Division (Light Infantry), from Fort Drum, New York, while it was deployed to Kandahar, Afghanistan, for Operation Enduring Freedom. When our brigade arrived at Kandahar Airfield, we found that no written emergency response plan was in place. Some of the other deployed units, including Fort Drum's 10th Forward Support Battalion Forward Support Medical Company, the 274th Military Police Company (an Army National Guard unit from Washington, D.C.), and the 451st Air Expeditionary Group Fire Service from Travis Air Force Base, California, had separate response criteria for responding to emergencies and standing operating procedures (SOPs) for working at a disaster scene. However, there had been no collaborative planning to facilitate response by multiple agencies to an incident so they could work together smoothly to restore order to potential chaos.

Soon after I arrived, Kandahar Airfield was struck by two separate enemy rockets. Some people, including commanders, first sergeants, command sergeants major, and base defense personnel, rushed to the point of impact and stood around the crater talking about what should be done and who should be in charge, but no one knew what to do or which agency should be in charge of the scene. An on-scene chain of command had never been established. As a result, the commander of the Base Defense Operations Center (BDOC) assumed responsibility for cleaning up the mess and reporting findings to his chain of command.

Installation Force Protection Working Group

To guard against a repeat of this situation in the future, the BDOC commander established an Installation Force Protection Working Group made up of representatives of several different agencies. The group discussed base defense and perimeter security measures and how to employ them, but it never contemplated actions to be taken in an everyday, routine emergency.

Later, an Emergency Response Plan (ERP) Working Group was established to discuss interagency response to situations outside the purview of base defense. The group included the base fire chief, a healthcare planner, military police, and base operations and contract facility management personnel.

During the first few weeks of its existence, the ERP Working Group discussed various types of

Fire service personnel and medics remove "casualties" from the incident scene.

incidents that would provoke a community-wide response. Baseline planning included introduction of potential scenarios and appropriate response measures. These scenarios ranged from aircraft incidents on the airfield to emergencies at the ammunition storage point. Catastrophic scenarios, such as building collapses, structure fires, hazardous material incidents, and prisoner escapes from the installation's confinement facility, were assessed. The group also reviewed combat-related scenarios, such as indirect-fire, improvised explosive device, and nuclear-biological-chemical contamination incidents.

The focus of the ERP Working Group was not prevention of or defense against attacks but follow-on mitigation of further loss of life and property after an attack occurs, including consequence management. Within these parameters, the group focused on route planning and the response by various agency personnel to an incident. The group also decided that all incidents required an on-scene incident commander.

The key to successful disaster planning is identifying the situations that do not require all agencies to respond.

Incident Commander Responsibilities

The incident commander serves as the information source for the chains of command of the various responding agencies at the scene of an incident. The need for an incident command system (ICS) was first identified in the 1970s during a series of wildfires that swept through California. Because of the haphazard response of agencies to the fires, it was determined that any incident involving multiple agencies required a single point of command, control, and coordination. The ICS provided a means for coordinating the collaborative efforts of individual agencies as they worked toward stabilizing an incident and protecting life, property, and the environment.

The ERP Working Group decided that the senior responding fire chief would be the on-scene incident commander because most of the scenarios developed by the group likely would involve a fire service response. In situations that did not require an interagency response, the primary respondent to the scene would become the incident commander.

The key to successful disaster planning is identifying the situations that do not require all agencies to respond. For example, Federal law mandates that, for any situation involving hazardous materials (HAZMAT), an ICS must be established. This was critical at Kandahar Airfield since a HAZMAT incident was always possible because of the variety of fuel and chemicals used at an operational airfield.

An ICS also facilitates effective response by agencies to planned events, such as dignitary visits, parades, and concerts; natural hazards, such as large fires; incidents involving multiple casualties, such as air, rail, water, or ground transportation accidents; and wide-area search and rescue operations. The system prevents the response by agencies that are not required, and it potentially could preclude resources from being employed inefficiently. As an example, a prisoner escape typically does not require a fire service or explosive ordnance detachment response.

Interagency Communication Requirements

The next step in the ERP development process was identifying the requirement for interagency communication capabilities. Before development of the ERP, each agency had its own radios and frequencies. New radios were purchased so each agency could carry one radio that was equipped with multiple channels to permit cross communication among the supervisory staffs of the responding agencies. The ERP Working Group decided that the BDOC would be the base Emergency Operations Center (EOC), and, as the plan developed, more emergency management responsibilities were given to the BDOC commander. For more effective interagency response in a disaster, the BDOC would serve as the focal point for receiving information and disseminating messages to responding organizations.

Tabletop Exercise

The plan looked great on paper, but would it stand the test of an exercise involving a multiple agency response?

Based on guidance from FEMA and current policies, we conducted a tabletop exercise that included the critical disaster response agencies. Using the "crawl-walk-run" method, the scenario involved receipt of a suspicious package in a mailroom. Over the course of 2 hours, the "who, what, when, where, and how" of the incident were discussed. The overarching concern was how well information would flow among agencies and back to the respective chains of command.

Based on the findings of this exercise, it was determined that the BDOC would serve as the communications coordinator throughout an incident. Ultimately, the BDOC would be the clearinghouse for

Military police record incident details and patient injuries.

all information about an incident. The BDOC would notify the military police, fire, and other emergency services personnel when additional assets were needed and when their services were no longer needed. All follow-up reporting would be channeled through the BDOC, and, in turn, the BDOC would notify the agency chains of command concerning actions during an incident.

The Real Test

Following the tabletop exercise, the ERP planners developed an actual exercise using FEMA's "8-Step Model for Exercise Design." Those eight steps are—

- Conduct a needs assessment for the drill.
- Define the scope of the rehearsal.
- Draft a statement of purpose.
- Identify the exercise objectives.
- Write a narrative of the exercise.
- List major events and details of the events.
- Assess expected actions.
- Identify messages associated with each event.

For 2 months, the ERP planners held weekly meetings to design an exercise. The chosen scenario involved a motor vehicle accident with multiple occupants trapped inside a burning car. The scenario was designed to be as realistic as possible and yield the maximum benefit for all personnel involved. The goal was to provide a viable, multiple-agency response to an incident involving several casualties and a disruption in the daily routine of the base.

Since this would be the first exercise of this type at Kandahar Airfield, the location was critical. Planners were not sure how the agencies would interact with one another since no previous situation had provoked such a response. A site at the far end of the runway, approximately 1 mile from the center of the installation, was selected for the exercise to prevent disruption of pedestrian and vehicular traffic.

The base operations staff approved a request for the purchase of a wrecked vehicle for the exercise. This vehicle had its engine removed but still had glass and tires on it. Three days before the event, the fire chief, military police, and the medical planner drove to the site of the exercise and conducted a training exercise without troops (TEWT) in which they reviewed the key aspects of the exercise and the anticipated response methods. Using a synchronization matrix as a guideline for the events, the key leaders "walked"

through the exercise from start to finish, making sure that it would meet the planners' design and intent. Other key players with supporting roles in the exercise were identified.

Tuesday, 2 March 2004, began like any other day at Kandahar Airfield. Soldiers participated in physical training, went to work, and ate at the dining facility. Meanwhile, the stage was being set for the first experience of its kind at Kandahar Airfield. Six "casualties," with simulated injuries applied by two nurses from the forward surgical team using a moulage kit, were taken to the site and placed inside the wreckage. They were given last-minute instructions about what was going to take place, and then the exercise began.

At approximately 1100, the BDOC received a phone call about a vehicle accident. The caller reported that several people were still inside the vehicle. The BDOC obtained critical emergency information from the caller and then passed the information to the fire service alarm center. At approximately 1105, a call went out over the radio with the details of the incident. The fire service was the first agency to acknowledge receipt of the information and respond to the scene.

To facilitate realistic training, the doors of the vehicle had been smashed to prevent them from being opened with the handle. The glass was broken out of one of the side windows of the car, and orange traffic cones were placed on the hood and trunk to simulate flames. As soon as the first fire truck was seen coming toward the scene of the accident, smoke grenades were deployed to give a realistic appearance of smoke coming from under the vehicle.

The military police were the next agency to respond to the scene. With blue lights on, police patrol vehicles rushed toward the scene as if the accident were real. This was exactly the response the planners had hoped for. The fire service arrived, and firefighters immediately began to "pull hose" and assume positions to suppress the fire. With streams of water directed at the car, the firefighters advanced on the vehicle and knocked over the cones, which simulated putting out the fire.

When the fire was out, firemen moved to the vehicle and assessed the scene and the condition of the "casualties." The five victims inside the car had various injuries. One was conscious, and four were unconscious. A sixth casualty had been ejected from the wreckage and was lying on the ground in front of the vehicle. The conscious victim added to the realism of the exercise by screaming at the firemen to get him out of the car because he was afraid of being burned alive.

The firefighters extricated the casualties and determined the nature of their injuries. As the extent of the various injuries was determined, the incident commander relayed information to the BDOC on the radio and requested assistance from emergency services personnel. The BDOC acknowledged receipt of the information and contacted the Kandahar Airfield health clinic. Within moments of the initial call, ambulances were en route to assist with the victims at the scene. As soon as the victims were placed inside the ambulances for transport to the emergency room, the exercise was terminated.

The final step was an informal after-action review at the scene of the incident while the events were still fresh in everyone's mind. The personnel involved gave great reviews. One airman stated that when he saw the smoke from a distance he couldn't tell if the incident was real or an exercise. That was the greatest compliment the exercise designers could have received.

The importance of the exercise was realized a few days later when the BDOC received a late-night telephone report of a fire and explosion inside the ammunition supply point. The fire service was there in a matter of minutes, followed by the military police, who established a safe zone, a traffic control point, an entry control point, and a perimeter. As if by design, an ambulance arrived a few moments later as a precautionary measure. The incident was reported through the appropriate channels, and the respective chains of command were notified.

The value of the exercise never might have been realized had a real-life scenario not occurred so quickly following it. Several members of various agencies reported to the ERP Working Group that, had they not rehearsed their response to an incident of this nature, their success with the real fire might have been severely hampered. Success was an understatement in this situation, and the dividends far outweighed the expense of the disaster training.

ALOG

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Taking Charge of a Medical Platoon: The First Steps

BY CAPTAIN JAMES D. CLAY AND SERGEANT FIRST CLASS RAYMOND F. SANDERS

A medical platoon leader is usually a lieutenant who is charged with developing a combat health support (CHS) plan for his battalion of 500 soldiers, a task that can prove daunting for a junior officer. If you are newly assigned as a medical platoon leader, we'd like to present three key steps that, taken early in your assignment, will make your job much easier.

Talk to Key Players

First, you need to know how well the platoon executes its mission. Talk to your platoon sergeant. He should have those answers at his fingertips. Some of the questions you want to ask him are—

- What are the platoon's strengths and weaknesses?
- What tasks are included on the platoon's mission-essential task list?
- Does the platoon have a standing operating procedure (SOP)? If so, when was it last reviewed? Does it clearly delineate everyone's roles and responsibilities during convoy operations? Does the SOP provide for rehearsals of operations such as occupying a new location, setting up a helicopter landing zone, or conducting triage at night? When were the

Soldiers in training practice a nonstandard casualty evacuation.

last rehearsals conducted? Refer often to Field Manual 4–02.4, Medical Platoon Leader's Handbook. It provides guidance on planning, rehearsing, and conducting CHS and provides tactics, techniques, and procedures for directing, controlling, and managing CHS at the medical platoon level.

- What is the platoon's personnel strength? Have critical losses within the next 30, 60, or 90 days been identified by military occupational specialty (MOS)? Are these shortages being reported on the unit status report?
- What is the status of MOS 91W transition training of your medics? [The Army's medical specialist (combat medic) and licensed practical nurse positions, designated MOS 91B and 91C, respectively, have been merged to produce MOS 91W, healthcare specialist.]
- Who in the platoon has a current driver's license?
- Do all of the vehicles in the platoon have a user-level maintenance manual, and is it used?
- Are there load plans for all vehicles, and are they current?
- Are there current packing lists for all medical equipment sets (MES)?
- How many combat lifesaver bags are on hand in the battalion? Do they have packing lists? How are they packed?

Next, contact the physician assigned to your platoon through the Professional Officer Filler System (PROFIS) (a system that assigns personnel from table of distribution and allowances units to table of organization and equipment units during wartime). If you don't know who your PROFIS physician is, ask the battalion S–1. The physician will appreciate your being proactive and bringing him onto the team early. It is your duty to ensure that the physician is integrated into the platoon; understands the platoon's mission, tactics, techniques, and procedures and SOP; and is part of the predeployment training plan. A certified physician can provide vital medical training, such as emergency medical technician and basic trauma life-support training, for medics during predeployment training.

Ask the physician to inventory your MES and make sure that they are up to his standards. The sets should reflect what the "Doc" wants to keep; however, any medic should be able to go into the sets and find what he needs. Work with your physician to develop a quality assessment and quality control program to keep the medications in your MES current.

Visit the Division Surgeon's Cell and talk to the Chief of Plans and Operations. The chief, who is the division's senior medical tactician, manages division medical operations and can assist you with any medical questions you may have. Ask the chief questions about the medical rules of engagement, air medical evacuation procedures, or class VIII (medical materiel) operations in theater. The officers in the Division Surgeon's Cell have years of experience in medical operations and can give you guidance on any medical topic. They also can point you in the right direction to get resources to train soldiers to qualify for the Expert Field Medical Badge or start an emergency medical technician course.

Review Supply and Maintenance Procedures

Next, you should visit the Division Medical Supply Office (DMSO) to learn the tactical procedures for class VIII resupply. You may need medical materiel not included in your unit assemblage listing (UAL) for missions such as humanitarian assistance, and the DMSO can guide you on how to stock noncombat sets and where to get the money to fund them. Ask the DMSO how to ensure that deploying units not only have sufficient medical materiel for the initial 48 hours but also have coordinated with the Forward Support Medical Company for push packages.

Visit the U.S. Army Medical Materiel Agency (USAMMA) Web site (www.usamma.army.mil/apps/nana_uaweb/index.htm) and download the most current UAL for all sets, kits, and outfits (SKO). Get the most current packing lists for your MES, and inventory them to ensure that you have current equipment and supplies. You will need a copy of your modification table of organization and equipment (MTOE) so you can cross-reference the line item numbers or unit identification codes on it with the SKO on the USAMMA website. If you do not have your MTOE, you can download a copy from the U.S Army Force Management Support Agency Web site (https://webtaads.belvoir.army.mil/usafmsa). You will need a user name and password, which will take only about 5 minutes to get.

After you have your current UALs, coordinate with your battalion S–4 to use a local warehouse or gym for conducting an inventory. These buildings provide space, security, and protection from the elements. Inventory all of your SKO, combat lifesaver bags, aid bags, and so on using the latest USAMMA SKO packing lists to ensure that your SKO are fully stocked. During the inventories, you may be short many of the items on the UAL, especially if the previous platoon leader used an outdated UAL during the last inventory. Note the equipment you need on your shortage annex and order it. Your supply sergeant should attach the change documents to your hand receipts and update the hand receipts as the equipment comes in. If you need a refresher on the basics of inventory procedures, read Major Patrick Flanders' article, "Change of Command Inventory 101: Tips on Counting Your 'Stuff' Before You Sign." It is

available on the Internet on the company command Web site (www.companycommand.com) and in the July–August 2000 issue of *Armor* magazine. Use old supplies and equipment for combat lifesaver training or combat medic training.

Next, look at the maintenance posture of your platoon's vehicles. Get the "ground truth" on the maintenance status of the vehicles in your platoon from your platoon sergeant and battalion maintenance officer and get the needed parts on order. ("Ground truth" refers to a baseline transportation or supply plan prepared in a normal environment based on unclassified, real-world data.)

Each week, conduct a communications check with platoon headquarters, update Department of the Army Forms 5988E (Equipment Inspection and Maintenance Worksheets) to reflect known faults and required parts, check the status of parts on order, and make sure that the new parts that have arrived are installed. Talk to your platoon sergeant to find out which parts, such as cables, starters, track pads, batteries, and heaters, cause recurring problems, and put those parts on your battalion's prescribed load list so they are always on hand.

Medical maintenance technicians in the DMSO can assist with the maintenance of your medical equipment. Visit the USAMMA Web site if you have any questions on operator-level maintenance standards for your equipment.

A forward aid station is set up and ready to receive casualties during training at the Joint Readiness Training Center at Fort Polk, Louisiana.

Update the Tactical SOP

The last step is to update your platoon's tactical SOP. Remember that a picture is worth a thousand words, so make your tactical SOP a playbook of medical actions to take in different scenarios. Map out your platoon actions on contact using flow charts, pictures, and checklists. Include in your playbook a battalion communications plan for both ground and air medical operations, a plan for evacuating casualties from the point of impact to the casualty collection point and the battalion aid station, a plan to set up a helicopter landing zone during the day or night, a mass casualty plan, and a class VIII resupply plan. These critical functions are sometimes left out of the tactical SOP. After you get their input and have created your tactical SOP, test soldiers on their understanding of it and rehearse it often.

When updating the tactical SOP, be sure to consider the PROFIS physician's recommendations about the types of medications to stock and the quality assessment and quality control rotation schedule for medications.

Taking charge of a medical platoon is a huge task for a junior officer. Attention to these important first steps will go a long way toward making your job less daunting. **ALOG**

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The Medical Platoon Leader and Parallel Planning

BY CAPTAIN JAMES D. CLAY

The author presents a guide to help the medical platoon leader through the military decisionmaking process.

The asymmetrical threat to U.S. forces is real. The medical platoon leader therefore must be involved in the planning process as early as possible so his resources contribute to conserving the fighting force. One trend I have observed during training exercises at the Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana, is a lack of parallel planning and a failure to integrate the medical platoon leader in the MDMP with the battalion staff. This often is due to the fact that the medical platoon leader is a junior lieutenant in the battalion and does not understand his role as a planner and platoon leader.

If you are a medical platoon leader, you need to take certain steps to gain the confidence of the warfighters and become a player in the MDMP. As a special staff officer, you need to be aggressive and become an active participant in the MDMP. As a platoon leader, you need to follow troop-leading procedures, using your noncommissioned officers to prepare the platoon for operations while you are on the battalion staff conducting the MDMP. The chart on the right will help in the parallel planning process.

Mission Analysis

Once the battalion staff receives the brigade warning order, conduct your mission analysis. First, you must understand the commander's intent and concept of operations. The intent will define the operation's nature and give your medics the flexibility to make the right decision if the operation changes. Does the commander intend to win the hearts and minds of local civilians through peacekeeping operations, or does he want to seize or destroy using offensive operations? What are the commander's medical rules of engagement for the treatment of civilians? What is the expected duration of the operation? Get clarification on the intent from the commander or the S–3. Start developing your combat health support (CHS) plan during mission analysis, starting with an analysis of the area of operations.

Terrain Analysis

While analyzing the brigade warning order, develop an understanding of the area of operations and its potential effect on the treatment and evacuation of casualties. Conduct a terrain analysis with the engineers and the S–2, using tools such as Terra Base—the engineer terrain analysis tool—and the modified combined obstacle overlay. To save time during the upcoming orders production phase, stay organized and put the grid coordinates on your CHS matrix as you conduct the terrain analysis.

Consider the infrastructure of the area of operations. For example, urban operations such as a cordon and search probably will result in trauma injuries caused by falling debris. Ask soldiers who already have operated in the area you are going into, such as your battalion scouts, about obstacles and mines, avenues of approach and mobility corridors, cover and concealment possibilities, observation and fields of fire, and key terrain. Use this information to determine where to locate your medical assets. Find out why a particular area is considered key terrain. Look at the routes and conduct a time-distance analysis to determine where you can put casualty collection points, ambulance exchange points, and helicopter landing zones. Look for any potential chokepoints that could delay casualty evacuation. Coordinate with the medical company to emplace ambulance exchange points.

To make sure your plan covers all contingencies, ask yourself the following questions while looking at the area of operations: What is my plan for getting casualties to a secured casualty collection point during urban combat? If my unit receives an urgent, priority, or routine casualty on a nonlinear battlefield, to which medical treatment facility will I evacuate the casualty? How will we treat and evacuate local national civilians injured during operations? What are the roles and responsibilities of every medic and security-party member during the operation?

Troop Requirements

The next step in mission analysis is to analyze the troop strength you will be supporting and to generate casualty estimates. Answer these questions: How many company teams will I be supporting, and will the task organization change by phase? What is the makeup of each company team? Am I supporting heavy mechanized forces, light forces, or a combination?

Parallel Planning Checklist

MDMP Phase	Input	Planner Actions	Output	Troop Leading Procedures
Mission Receipt	Brigade warning order (WARNO).	1. Understand the mission and the commander's intent. 2. Conduct a terrain analysis and MIPB. 3. Establish communications with key players for support (heads up!). 4. Make a tentative plan according to the 1/3 and 2/3 rule.	WARNO #1 with initial timeline.	1. Receive the mission. 2. Issue WARNO #1.
Mission Analysis	Brigade operations order (OPORD). 1. Staff estimates. 2. Facts and assumptions.	1. Analyze OPORD in terms of intent, mission, area of operations, constraints, intelligence, and requirements. 2. Prepare mission analysis brief. a. Requirements: casualty estimate. b. Capabilities: on hand and projected. c. Shortfalls: send to brigade support medical company. d. Understand essential, specified, and implied tasks and clarify requests for information.	1. WARNO #2. 2. Mission analysis products. Commander's guidance.	3. Make a tentative plan. Issue WARNO #2.
Course of Action (COA) Development	1. Restated mission. 2. Commander's guidance and intent. 3. Enemy COAs.	1. Visualize and sketch a COA based on mission analysis. 2. Refine casualty estimates based on COA development. 3. Start filling in the combat health support (CHS) matrix and drawing the overlay.	1. COA statements. 2. COA sketches.	4. Initiate movement. 5. Conduct reconnaissance and coordination.
COA Analysis (War game)	1. Updated enemy COA. 2. Event templates. 3. Symbols and map of area of operations. 4. Final casualty estimates and COAs. 5. Current/projected combat slant.	1. Brief the casualty estimate by phase. 2. Brief the CHS plan to treat and evacuate casualties. 3. Ensure that casualty evacuation is emphasized and that the S–2 generates casualty-producing scenarios. 4. Finalize the CHS matrix and graphics based on the outcome.	1. Decision points. 2. Completed and integrated CHS plan. 3. Completed CHS matrix and graphics.	6. Complete the plan.
Orders Production	1. Synchronization matrix. 2. Risk controls.	1. Brief the CHS plan—brief routes, casualty collection points, medical treatment facilities, ambulance exchange points, helicopter landing zones, and contingencies. Don't indicate a grid without pointing to it on map.	1. OPORD. 2. CHS matrix. 3. CHS overlay.	7. Issue OPORD. 8. Conduct precombat inspections, rehearse, supervise, refine operations.

How will we support far-forward elements, such as the scouts, that have no organic medical support? Where do I anticipate contact, and how many casualties will result from this contact?

The task organization of the maneuver forces will dictate how you organize your medical support. Heavy forces have fewer personnel than light forces, and they have armor protection. Light forces have double the personnel and no armor protection. You may have to provide area support for other members of your task force, such as engineer, field artillery, air defense, chemical, or signal units. Be prepared to brief the commander on your medical task organization based on the maneuver task organization.

Civilian Requirements

After estimating troop casualties, you need to determine what services you will be providing to civilians. You should work with the battalion S–1 to generate civilian estimates, including contractors, local civilians, and displaced civilians throughout the operation. First, ensure that you have a clear understanding of the surgeons' medical rules of engagement in your area of operations. Next, get an estimate from the S–1 and the fire effects coordination cell of how many local nationals and civilians you will have to support. Analyze the population densities and the capabilities of local hospitals to get an idea of how many civilians you will have to treat in your area of operations. Answer these questions: Based on the population densities and the existing infrastructure, how many displaced civilians can I expect to have to treat? Will we be providing humanitarian assistance for local nationals? Will we be conducting medical civic action programs (MEDCAPs) for local nationals? (MEDCAPs require civil affairs assistance and nonstandard equipment and supplies for pediatric and geriatric medical care.) Do we anticipate a mass casualty situation? Do we have a response team to treat and evacuate both military and civilian casualties?

Medical Intelligence

Now that you have the military and civilian personnel requirements from the mission and the commander's intent, refine the casualty estimates against the S–2's intelligence preparation of the battlefield (IPB) and the brigade surgeon's medical IPB. From the IPB, you should learn two things about the enemy: What is his most likely course of action (COA), and what type of weapons will he employ? Medics need to know likely enemy avenues of approach and weapon ranges to ensure that medical assets are positioned away from enemy threats. The type of weapons you expect the enemy to use will tell you the type of casualties that you will receive and the class VIII (medical materiel) that you will require.

Next, ask what the medical threats to your forces are. Disease and nonbattle injuries often produce higher numbers of casualties than combat operations. Study the enemy COA to determine the most likely time and place that casualties will occur.

Organic Capabilities

Once you have determined the number of expected casualties, you need to estimate your expected shortfalls by comparing the anticipated casualties to your unit's organic capabilities.

As the platoon leader, you should always know the true status of your organic capabilities to support the casualty load. This includes the current and projected status of all personnel and equipment. Keep running estimates that can answer the following questions: Do all of the company teams have their assigned medics and equipment? Are any of the vehicles not mission capable because of maintenance deficiencies? Do I have 48 hours of class VIII on hand? Do I have enough organic capability to support the customer base? Do I need support from the forward support medical company to augment my shortfalls?

You have to know your own capabilities to support the fight. At the conclusion of your mission analysis, you will have to brief the commander. Be prepared to brief your requirements based on the IPB, your capabilities, and any help you will need with shortfalls.

COA Development

The next phase of the MDMP after mission analysis—COA development—is creating a COA that can be compared to the enemy and friendly situations during the COA analysis. Visualize a COA based on the commander's guidance and on the most likely casualty-producing event, as determined by the IPB. For example, assume that the driver of a high-mobility, multipurpose, wheeled vehicle (HMMWV) is critically injured by a rocket-propelled grenade attack and becomes an urgent surgical casualty. Follow this casualty through the entire evacuation process and use your medical battlefield operating systems, including communications, command and control, treatment, evacuation, hospitalization, and logistics, to create an integrated plan to take care of him. Who will be the first responder? How will the first responder get the casualty to the casualty collection point? Will the first responder have a combat lifesaver bag on hand with the appropriate supplies to stabilize the casualty? Will the first responder have the means and ability to evacuate this casualty to a medical treatment facility? Which radio frequency will the first responder use? If only ground transportation is available, how exactly will the casualty be evacuated to the battalion aid station? Are your soldiers familiar with

this route, and have they conducted a route reconnaissance? Will this plan work at night? The result of COA development will be a clearer understanding of the medical concept of operations to take into the COA analysis.

COA Analysis

The next MDMP phase, COA analysis, is performed as a war game. The war game is the critical point of the MDMP; it is where you will apply the casualty estimates that you developed during mission analysis and COA development to the enemy and friendly COAs. Make sure that the S–2 fights you hard and that you must deal with the worst casualty scenario possible. This is the "so what" portion of MDMP, during which you determine when and where casualties will be produced and under what conditions.

During the war game, the S–1 should brief casualty estimates and you should brief the medical concept of support for these estimates by phase. Speak up! The commander needs to know how many casualties you expect and how you plan to evacuate them. The expected result of the war game is knowledge of when and where patient densities will occur on the battlefield.

Time Considerations

The final phase of the planning process is orders production, which centers on developing the CHS casualty treatment and evacuation plan. Look at the critical time and distance factors when positioning your treatment teams. Start by considering the first 10 minutes after a casualty occurs, when bleeding from a severed artery can cause death. This short time period means that combat lifesavers must be nearby during all operations to stop bleeding and initiate the use of intravenous fluids. Next, consider the trauma specialist's (medic's) goal of getting the casualty to advanced trauma management within 30 minutes. Field Manual (FM) 4–02.4, Medical Platoon Leader's Handbook—Tactics, Techniques, and Procedures, states that, for an ambulance to leave the battalion aid station and pick up a patient and return within 30 minutes, the aid station must be within 4 kilometers of the soldier's point of injury.

Finally, consider how to get the stable urgent surgical casualty into the operating room within the "golden hour." To provide stabilization and evacuation, you may need to split your treatment teams and send a forward treatment team to the main effort with the most anticipated urgent casualties.

Doctrinal Time and Distance Factors

FM 8–55, Planning for Health Service Support, offers some time and distance factors for using your treatment teams. In light operations in normal terrain, use a four-man litter to evacuate dismounted soldiers 900 meters and return in 1 hour. In mountainous terrain, this factor reduces to 350 meters for return in 1 hour. For heavy forces, position evacuation assets within 4 kilometers for return within 30 minutes. Remember, these factors are calculated under favorable conditions of terrain, weather, and light, and they do not include the time needed to load and unload the casualty.

CHS Matrix

Finally, ask the battalion S–4 to include a simple one-page CHS matrix in his concept of support plan. This matrix should be linked by phase and trigger to the maneuver plan and include command and control, landing zones, evacuation routes, casualty collection points, ambulance exchange points, decontamination points, communication frequencies, phase lines, and all brigade medical treatment facilities and air evacuation triggers from the point of injury to the aircraft launch point. FM 7–20, The Infantry Battalion, has a good example of a CHS matrix. Start filling in this matrix during COA development and complete it after the war game. Ensure that all grid coordinates from your graphics and overlays are included so the CHS matrix is a stand-alone document. This will enable first sergeants to have a one-page snapshot of the casualty evacuation plan to use at the combat service support rehearsal.

To build credibility with the warfighters, the medical platoon leader has to be an active participant throughout the MDMP. During mission analysis, you are looking at your patient requirements, the status of your capabilities, and forecasted shortfalls. The mission analysis will allow you to visualize a general medical COA to prepare you for the war game. The war game will tell you under what conditions, where, and when patient densities will occur. During the orders production phase, you will roll it all up into a simple, easy-to-read, one-page CHS summary for the commander.

Become a player on the combined arms team, and take every opportunity to participate in an MDMP. The more you participate, the better skilled you become. The plan the team generates should result in bold warfighter momentum and preservation of life on the battlefield. **ALOG**

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COMMENTARY

Supporting Army National Guard Regional Training Sites

BY SERGEANT FIRST CLASS DAVID D. LINDEMAN

It sounds simple. I need two M35 series 2½-ton trucks to support an upcoming 63B (light wheel vehicle mechanic) Basic Noncommissioned Officer (NCO) Course. In a modification table of organization and equipment (MTOE) unit or on an active-duty post, where the NCO academies are supported internally by units on the installation, getting the trucks would be a simple task. However, for an Army National Guard (ARNG) Regional Training Site-Maintenance (RTSM), it is an exercise in logistics.

Reserve Component Training

For training purposes, the Army Training and Doctrine Command has divided the world into seven regions. Each region has a TASS (The Army School System) battalion headquarters that coordinates the content of courses to be taught at the RTSMs in its region. The Army Combined Arms Support Command, the Army Training and Doctrine Command, the proponent school (such as the Ordnance School), and the RTSM provide input to the course content.

The programs of instruction (POIs) for RTSM courses are developed by proponent agencies composed of both military and civilian personnel. Writers are not necessarily service members; they are subject matter experts, military or civilian, who know what needs to be included in the courses. When new technology and equipment become available to the Army, training on them is written into the POIs. The RTSMs then have a period of time, normally a year, to obtain the equipment required to complete the POIs.

RTSM students replace the engine of a M4K 4,000-pound rough terrain forklift on which they are training.

MTOE and TDA Unit Priorities

Because the RTSM is a table of distribution and allowances (TDA) organization, it often does not have access to the vehicles called for in a POI. An ARNG RTSM has a minimal number of tactical vehicles, which are training aids and are not fully mission capable. The RTSM may lack many of the items required by its POIs and may have to rely on the state logistics system and ARNG units within the state to provide items it needs. Since the needs of deployable units come before those of training activities, obtaining these items can be difficult.

New equipment is fielded to MTOE units using a basis-of-issue plan and a fielding plan that are based on projected needs. MTOE units are deployable and have real-world missions for which they need to train. RTSMs are TDA units that normally are assigned to state headquarters in the ARNG and to major U.S. Army Reserve commands (MUSARCs). The real-world mission of these local and area headquarters or operational units is to support the readiness levels of the MTOE units.

When new equipment is of a tactical nature, the MTOE units need it to maintain their readiness and deployability. During peacetime, some equipment can be substituted. For example, a unit may be authorized five 5-ton M923-series vehicles. The state headquarters or MUSARC can substitute two 2½-ton M35-series vehicles for one 5-ton. In the event of mobilization, the 2½-ton vehicles are replaced by the authorized 5-ton vehicles and the unit then moves to the mobilization station and on to the theater. This does not work for RTSMs since TDA units generally are not allowed tactical equipment. Most TDA units use commercial vehicles from the General Services Administration or equipment hand-receipted from MTOE units.

POI Requirements

Specific tasks in the POI call for specific pieces of equipment. In some cases, different pieces of equipment have identical systems. For example, the engine, transmission, and other systems of a heavy, expanded-mobility, tactical truck (HEMMT) are basi-

RTSM students replace the barrel of a M198 155-millimeter howitzer as a part of their training.

cally the same whether it is a wrecker or fuel truck. However, some similar items, such as M109A5 and M109A6 howitzers, have significant differences, and sometimes new equipment is completely different from old equipment.

Many people think that when an RTSM does not have the equipment it needs for training, the solution is to borrow the equipment from a unit within the state. But not all states have all of the required equipment. For example, an M109A6 Paladin howitzer may be required to train on a task, but the state may not have any M109A6 artillery units. It is possible, but difficult, to obtain equipment from other states within the TASS region.

If the needed equipment is not available, the RTSM may request a waiver of the task that requires the equipment; however, this leaves soldiers untrained on the task. In some cases, a task cannot be waived, so the RTSM cannot teach that particular course.

When a unit in the state has the equipment, borrowing it is difficult because the owning unit needs to train on the equipment to remain deployable. Maintenance training typically is conducted on equipment readiness code (ERC) A or ERC P (pacing items), and units do not like to loan out their prime and necessary equipment. [ERC A items are primary weapon systems and equipment essential to a unit's mission. ERC P items are major weapon systems or equipment that are so important that they are continuously monitored and managed.] In addition, Army Regulation 750–1, Army Materiel Maintenance Policy, states that a condition code of "F" (unserviceable [reparable]) or less will be assigned to equipment that is used for training and is disassembled and reassembled during the training. A cavalry squadron commander who is approached by the RTSM about borrowing an M1 Abrams tank for maintenance training knows that the M1 will become condition code F as soon as it is used as a training aid. At $1.9 million per tank, loaning the tank to the RTSM would not be a fiscally sound decision.

An RTSM might consider having the needed items added to its TDA to ensure that the equipment is available for training use. However, this is not a good solution because the process of having an item added to a TDA is long and MTOE units have priority for equipment authorization. TDAs are published annually. Change requests, which include a battery of questions about usage and justification for the equipment, must be made within the TDA change window and forwarded through the State Operations and Intelligence Office, with coordination with the U.S. Property and Fiscal Office (USPFO) and the state G–4. If all of these offices agree, the documents are forwarded through the Force Integration Office to the National Guard Bureau and then to the individual program managers. Once the program manager gets the request, he considers the overall need of the service to determine if the equipment will be added to the RTSM's TDA. This process can take as long as 2 years, and if the equipment is a high priority item, such as the M1 series tank, the TDA unit will not receive the equipment. Even equipment that is being "recycled" in the system will not go to the RTSM if MTOE units need the items. The result is that RTSMs do not get the equipment they need to train mechanics fully. Equipment is not added to the RTSM TDAs, and MTOE unit commanders are not going to give up equipment and lower their readiness.

The Solution

A simple solution to this Reserve component training dilemma is to include RTSMs on basis-of-issue and fielding plans. When procuring new equipment, an additional piece of the equipment or a piece of equipment that was used as test equipment could be sent to the RTSMs around the Nation that will be responsible for training mechanics on the equipment's maintenance.

RTSMs are always looking for ways to solve their equipment problems. Today's Army has to operate in a smarter, more streamlined manner. Maintenance training should take place when items are being fielded so that soldiers will not find themselves with not-mission-capable equipment because no one is trained to repair it.

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Preparing for Convoy Operations in a Combat Zone

BY STAFF SERGEANT EDWARD M. STEPP

Driving a truck in a combat zone requires more than knowing how to steer. Convoy personnel need to know how to defend themselves and their cargo.

Because even the most aggressive aerial resupply cannot deliver all of the classes of supply needed to sustain a force in continuous operations, tactical convoys will always be required. Knowing this, Army leaders should know the requirements and demands placed on their drivers and assets and increase convoy force protection accordingly. The way to improve force protection is to prepare for tactical convoys as if they were combat patrols.

Convoy soldiers should be assigned specific responsibilities, such as breech team, security team, security or advance guard, convoy commander, air guard, main body, and rear security. All convoy personnel must be vigilant. While moving, they should keep their body armor closed, their Kevlar helmets on, their crew-served weapons locked and loaded, and their individual weapons chambered and pointed out the window. All vehicles should have communications, and the crews should check them frequently. Drivers cannot become complacent; they always should be scanning for suspicious personnel, mines, and items that appear to be out of place, such as wires or piles of rocks.

Training

Drivers must train as riflemen. Convoy drivers and relief drivers must know how to protect themselves while the convoy is moving. That is what is meant by "train as we fight." Weapons training requires more than basic rifle marksmanship. A soldier must be comfortable and confident with his weapon. He needs to know its limitations.

Drivers need to know how it feels to fire a weapon from a vehicle. It is awkward for a person who fires right-handed to fire out of the passenger window. Vehicle movement, bumps on the road, and spent cartridges bouncing from the weapon inside the vehicle all increase the difficulty of firing from a moving vehicle. Knowing how to use a vehicle as a defensive tool is as important as

A driver reacts to an ambush during a convoy to Baghdad.

A soldier with the 1st Infantry Division (Mechanized) provides security while a suspected improvised explosive device inside a vehicle is investigated during a convoy to Baghdad.

knowing how to employ it offensively. Soldiers need to know when and when not to use their vehicles as cover.

Training on crew-served weapons is equally important. A gunner on a .50-caliber machinegun or MK19 grenade launcher should know that the weapon could take down a brick wall. Gunners also should be taught the requirements for firing an AT4 antitank weapon and given the opportunity to do so. Convoy soldiers also should train on the Multiple Integrated Laser Engagement System (MILES) to learn how to engage a target while it is shooting back.

Drivers should drill on dismount procedures and actions after dismount until they are second nature. Use of proper dismount procedures can save lives. Too many times, I have seen a driver or his relief killed while dismounting a vehicle on the side near an ambush.

Soldiers also must know their vehicles' capabilities. For example, a 5-ton truck has the power to push most obstacles out of its way, but an M998 high-mobility, multipurpose, wheeled vehicle may not. Controlled training events give soldiers an opportunity to learn and experience what their vehicles can do. Backing up to a water buffalo or dock is not combat driving. Combat driving is traversing rough terrain—crossing barriers such as ditches and logs—and pushing cars and similar obstacles out of the way. The driver of a 5-ton truck needs to know that if a smaller vehicle were to fire on his truck at close range he could ram that vehicle to disable or destroy it.

It is imperative that units conduct this type of training before deploying to any potentially hazardous place.

SOP

A combat service support unit must develop a comprehensive convoy standing operating procedure (SOP) that clearly states what is to be done, when, and by whom. The SOP should be developed as if the unit will never receive security support from outside sources. The SOP should take priority over all doctrine. However, it should be kept as close to doctrine as possible, without hindering soldiers' safety or mission performance. Leaders should know the SOP, train it, and enforce it. Corners should not be cut; allowing the standard to slide will create a new, and lower, standard.

Unit leaders must stay current with emerging doctrine and be prepared to update the SOP as needed. Flexibility is the watchword. An SOP must be flexible enough to work for other units and to allow the unit to adjust to changes in the way the Army is doing business.

The SOP should be understandable to all soldiers, regardless of their rank or skill level, and it should be

available to all soldiers. All members of the unit should be expected to know what the SOP says.

Plan

Leaders at all levels must plan for convoy operations. S–3/4 shops must maximize the use of convoys and security elements by combining multiple convoys going to the same or nearby destinations. Too often, convoys of three or four vehicles go out several times a day. This is an invitation for attacks of opportunity. In low-intensity conflict, large aggressive convoys are hit less often because an enemy is less likely to attack when he knows he will suffer retaliation.

Time for preparation and rehearsal must be incorporated into the convoy planning timeline. Convoy planners must make security a priority and include it in rehearsals. If commodity managers manage assets the way they are supposed to, it will be easier to avoid having to mount last-minute convoys to deliver supplies. This will make life a little harder on the planners, but it makes it easier for the drivers. It also protects assets and personnel from attrition, allowing the unit to stay fully mission capable.

Planners should give leaders and soldiers sufficient notice so they can rehearse and get equipment ready. Last-minute convoys make rehearsals and precombat checks or inspections impossible. Giving plenty of notice also allows attached units to become aware of the unit's SOP.

Supported units should be informed of support requirements, such as the amount of time required to organize and coordinate convoys. Many units do not know how long it takes to fill a water tanker or load a 40-foot trailer with 105-millimeter rounds.

Rehearsals

Rehearsals should be conducted using sand tables, maps, and rock drills—never just talked through. Rehearsals should be performance oriented and, when possible, include vehicles. They should have as many variables as possible and never be a repeat of the last rehearsal, but the planned outcome should always be the same.

Soldiers of the 141st Engineer Combat Battalion, a North Dakota Army National Guard unit, move in a convoy to patrol the main supply route from Baghdad to Tikrit, Iraq.

Leaders must ensure that precombat checks and inspections are conducted on personnel and equipment, including vehicles. Checking fuel levels and ammunition is not enough. Drivers also should check equipment inspection and maintenance worksheets, inspect weapons, look over their loads, and check communication systems.

Convoys are the soldiers' lifelines. They must be recognized as combat operations, and drivers must be trained as "mounted riflemen." Success on the battlefield rides on the back of convoy trucks. By training, planning, and setting operational standards, convoy operations will help make combat troops successful.

ALOG

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Average Customer Wait Time: A Supply Chain Performance Indicator

BY MAJOR DAVID R. GIBSON

Projecting and sustaining forces hinges on successfully establishing and managing air, ground, and sea lines of communication. These lines of communication represent the pipelines through which all classes of supply flow and often are referred to as supply chains because of the numerous links between the various nodes. Timely flow of supplies through these chains is critical to providing combat, life, and humanitarian support to the customer. In fact, speed of delivery is becoming a key indicator of logistics success. The dynamic nature of current and future operations requires constant analysis of medical materiel—down to the individual item level—transiting this pipeline. Measuring the performance of the supply chain is critical to identifying troubled segments, determining success, and assessing operational capabilities. Measuring performance requires a metric that measures the time from demand creation to demand fulfillment at the customer level.

The U.S. Army Medical Materiel Center, Europe (USAMMCE), located in Pirmasens, Germany, currently tracks average customer wait time (ACWT) for key customers deployed in remote locations such as Iraq, Qatar, and Afghanistan. Tracking this performance has provided critical information for identifying distribution challenges and supply chain bottlenecks. Once bottlenecks are identified, logisticians can take the corrective actions needed to unclog the flow of materiel and increase supply chain velocity.

Current medical materiel management systems allow for the measurement of ACWT by line item; however, no regulatory guidance delineates how to compute this metric for a supply chain. In fact, volume alone complicates this process since thousands of items flow through a supply chain on any given day. There are always exceptions to the process, and current technology that requires human interface creates circumstances that can threaten the validity of the measurement, such as receipts being processed late or not at all. Since multiple items transit a supply line, measuring a supply chain's performance requires the use of averages. It also requires active participation by users throughout the supply chain for the measurements to be accurate. Eventually, technology will allow the use of passive processes to feed the supply tracking systems and provide more accurate real-time data. Before discussing how AWCT for a supply chain should be computed, it is important to understand how customer wait time is currently measured for an individual medical item.

Computing Customer Wait Time

Customer wait time (CWT) is measured by calculating the time between the date a requisition is created and the date that it is closed out at the same point of entry. The requisition creation date is determined by the Julian date in the document number.

CWT computation is different for stocked and nonstocked lines and will vary based on the requisition's point of origin, flow, special handling requirements, mode of transportation, and other factors. The overall CWT can be broken down by the times associated with the various functions in the supply chain. For example, the "customer processing time" is measured from the date the requisition originates until the date the requisition is entered into the Theater Army Medical Management Information System (TAMMIS). Another timeframe, the "supply activity processing time," represents the period between the reception of the requisition and the processing of the requisition by the supply activity. The "transportation time" is measured from the time the requisition is processed by the supply activity to the time the customer closes out the requisition.

Each of these processes can be segregated further, based on system capabilities, to track subprocesses that are associated with dates. Examples include the time from requisition receipt in TAMMIS until the time a materiel release order (MRO) is produced, the time from MRO issue to actual transport, and the time the order spends in the transportation system until it is closed out by the receiving customer. This measurement must be made for each requisition, and measurements for all requisitions must be combined to generate a perspective of supply chain trends. Combining the measurements of more than one requisition, more than one type of requisition, or more than one customer changes the CWT metric to an ACWT metric.

Computing ACWT

To compute the ACWT for stocked and nonstocked requisitions, begin by computing the CWT for each stocked item. To do this, subtract the Julian date of the original document number from the Julian date the order was received by the customer. (This date may

$$ACWT_a\ S\ \&\ NS = \sum_{i=1}^{n}\left\{\left[\frac{S}{(S+NS)}\right]\left[ACWT_S\right]+\left[\frac{NS}{(S+NS)}\right]\left[ACWT_{NS}\right]\right\}$$

This formula is used for computing the ACWT for both stocked and nonstocked item requisitions of a single customer, where "ACWTa S & NS" is the average customer wait time for customer "a's" stocked and nonstocked item requisitions. "S" is stocked item requisitions and "NS" is nonstocked item requisitions for a given customer over time period "i."

not be accurate if customers delay processing receipts.) To calculate the ACWT, total the CWTs for all stocked item receipts according to Department of Defense Activity Address Code (DODAAC) and divide by the total number of stocked item requisitions for the measured period. The same process is used for nonstocked items.

Once ACWT numbers are produced for stocked and nonstocked item requisitions, they must be combined proportionately to accurately represent an ACWT metric for a given customer. The formula for computing an ACWT that represents both stocked and nonstocked item requisitions for a given customer is shown in the chart above. Although the formula may appear intimidating, it simply uses a weighted average to adjust the metric by the proportion of stocked versus nonstocked items.

Stocked Item (S) CWT: 3, 2, 3, 5, 12

$$ACWT\ S = \frac{3+2+3+5+12}{5}$$

$$ACWT\ S = \frac{25}{5} = 5$$

Nonstocked Item (NS) CWT: 10, 45, 30, 19

$$ACWT\ NS = \frac{10+45+30+19}{4}$$

$$ACWT\ NS = \frac{104}{4} = 26$$

$$ACWT\ S\&NS = \left(\frac{5}{5+4}\right)(5)+\left(\frac{4}{5+4}\right)(26)$$

ACWT S&NS = (.56 x 5) + (.44 x 26) = 14.24

This example shows the computation of the combined ACWT for stocked and nonstocked items.

Computing ACWT for Two Customers

Computing the ACWT for two or more customers requires proportionate combining of stocked requisitions and nonstocked requisitions. This may be practical when customers are collocated and using the same distribution channel. A combined ACWT provides perspective on the supply chain's performance; however, without computation of customer and transportation processing times, sluggish segments in the supply chain may be overlooked.

Start by combining the customers' ACWTs using the following steps—

1. Compute ACWT for each customer's stocked (S) and nonstocked (NS) item requisitions separately.

Customer "a"

S CWTs: 3, 2, 3, 5, 12

$$S\ ACWT = \frac{3+2+3+5+12}{5} = \frac{25}{5} = 5$$

NS CWT = 10, 45, 30, 19

$$NS\ ACWT = \frac{10+45+30+19}{4} = \frac{104}{4} = 26$$

Customer "b"

S CWTs: 5, 10, 12, 8, 15, 10

$$S\ ACWT = \frac{5+10+12+8+15+10}{6} = \frac{60}{6} = 10$$

NS CWT = 20, 10, 12, 14

$$NS\ ACWT = \frac{20+10+12+14}{4} = \frac{56}{4} = 14$$

2. Combine customer "a's" total number of stocked item requisitions with customer "b's."

S a+b = 5+6 = 11

NS a+b = 4+4 = 8

3. Divide customer "a's" total number of stocked item requisitions by the total number of stocked item requisitions for customers "a" and "b." This produces customer "a's" percent of the total.

$$\frac{a}{a+b} = \frac{5}{11} = .45$$

4. Multiply customer "a's" percent from step 3 by customer "a's" ACWT for stocked items.

.45 x 5 = 2.25

5. Perform steps 3 and 4 for customer "b" by dividing customer "b's" total number of stocked item requisitions by the total number of stocked item requisitions for customers "a" and "b." This produces customer "b's" percent of the total.

$$\frac{b}{a+b} = \frac{6}{11} = .56$$

6. Multiply customer "b's" percent from step 5 by customer "b's" ACWT for stocked items.

.56 x 10 = 5.60

7. Total the results from steps 4 and 6 to get an ACWT for two customers' stocked item requisitions.

2.25 + 5.60 = 7.85

8. Repeat steps 1 through 7 using the nonstocked item requisition figures for customers "a" and "b" to

compute the combined ACWT for nonstocked items.

NS ACWT for a and b = 20

Using the ACWTs calculated above, use the formula below to combine the AWCTs for stocked and nonstocked items.

$$ACWT_{a,b,S\,\&\,NS} = \sum_{i=1}^{n} \left\{ \left[\frac{S_{a,b}}{(S_{a,b}+NS_{a,b})} \right] \left[ACWT_{S} \right] + \left[\frac{NS_{a,b}}{(S_{a,b}+NS_{a,b})} \right] \left[ACWT_{NS} \right] \right\}$$

This formula can be used to compute the ACWT for stocked and nonstocked item requisitions for two customers, where "ACWTa,b S & NS" is the ACWT for customers "a" and "b" for both stocked and nonstocked item requisitions. "Sa,b" is the total number of stocked item requisitions for customer "a" and customer "b." "NSa,b" is the total number of nonstocked item requisitions for customer "a" and customer "b." "$ACWT_S$" is the ACWT for stocked item requisitions. "$ACWT_{NS}$" is the ACWT for nonstocked item requisitions.

The following procedures demonstrate how to compute the combined ACWT using the formula above.

1. Combine customer "a's" stocked item requisitions with customer "b's" stocked item requisitions.

S a + b = 5 + 6 = 11

2. Combine customer "a's" nonstocked item requisitions with customer "b's" nonstocked item requisitions.

NS a + b = 4 + 4 = 8

3. Divide the answer from step 1 by the total number of requisitions (step 1 + step 2). This provides the percent of stocked item requisitions of the total.

$$\frac{11}{11+8} = \frac{11}{19} = .58$$

4. Multiply the percent from step 3 by the ACWT for all stocked items.

.58 x 7.85 = 4.55

5. Divide the answer from step 2 by total number of requisitions (step 1 + step 2). This provides the percent of nonstocked item requisitions of the total.

$$\frac{8}{19} = .42$$

6. Multiply the percent from step 5 by the ACWT for all nonstocked items.

.42 x 20 = 8.40

7. Add the answer from step 4 with the answer from step 6 to get a combined ACWT for two customers' stocked and nonstocked item requisitions.

4.55 + 8.40 = 12.95

This procedure attributes a proportional component of the calculation to each customer's stocked and nonstocked item requisitions. Although this metric will demonstrate the average amount of time taken to originate and submit a request, fill the order, and transport and receive an item, the computation still merely reflects an average. Computing the variance or standard deviation for the data used to get these computations will provide a measure of consistency. Combining customer requisitions from significantly different locations, where transportation timeframes are not completely congruent, will make the computed average less useful for measuring timely supply chain distribution.

Improving the supply chain depends on accurately measuring performance. Performance must be measured down to the individual customer level by type of supply and by procurement proponent. The ACWT metric can be used at all levels in the supply chain to track performance and, more importantly, to provide logisticians information about where to troubleshoot and alleviate bottlenecks in the supply chain. When used as a composite measure, it can provide decisionmakers a measure of support that can be critical in determining operational capabilities.

The ACWT computation can be used separately to determine the performance of a specific vendor from factory to warehouse or to measure performance from factory or distribution center down to the customer. It also can show delays in customer processing, indicating where training may be required. Computing ACWT is the first step in determining where problems are in order to focus corrective initiatives.

The next challenge is defining the ACWT standards for the different links in the supply chain and then meeting, exceeding, or improving those standards. The steps outlined above can be followed to compute the ACWT standards automatically with minimal user interface. Currently, USAMMCE computes ACWT monthly and inputs the data into a Microsoft Excel spreadsheet for computation. Ideally, future automation platforms will incorporate scanning or other technologies that allow ACWT computation to take place passively, without user interface. This will allow logisticians at all levels to track and measure supply chain success more accurately.

ALOG

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Rise and Fall of the Strategy of Exhaustion

BY MAJOR LAWRENCE M. SMITH, MDARNG

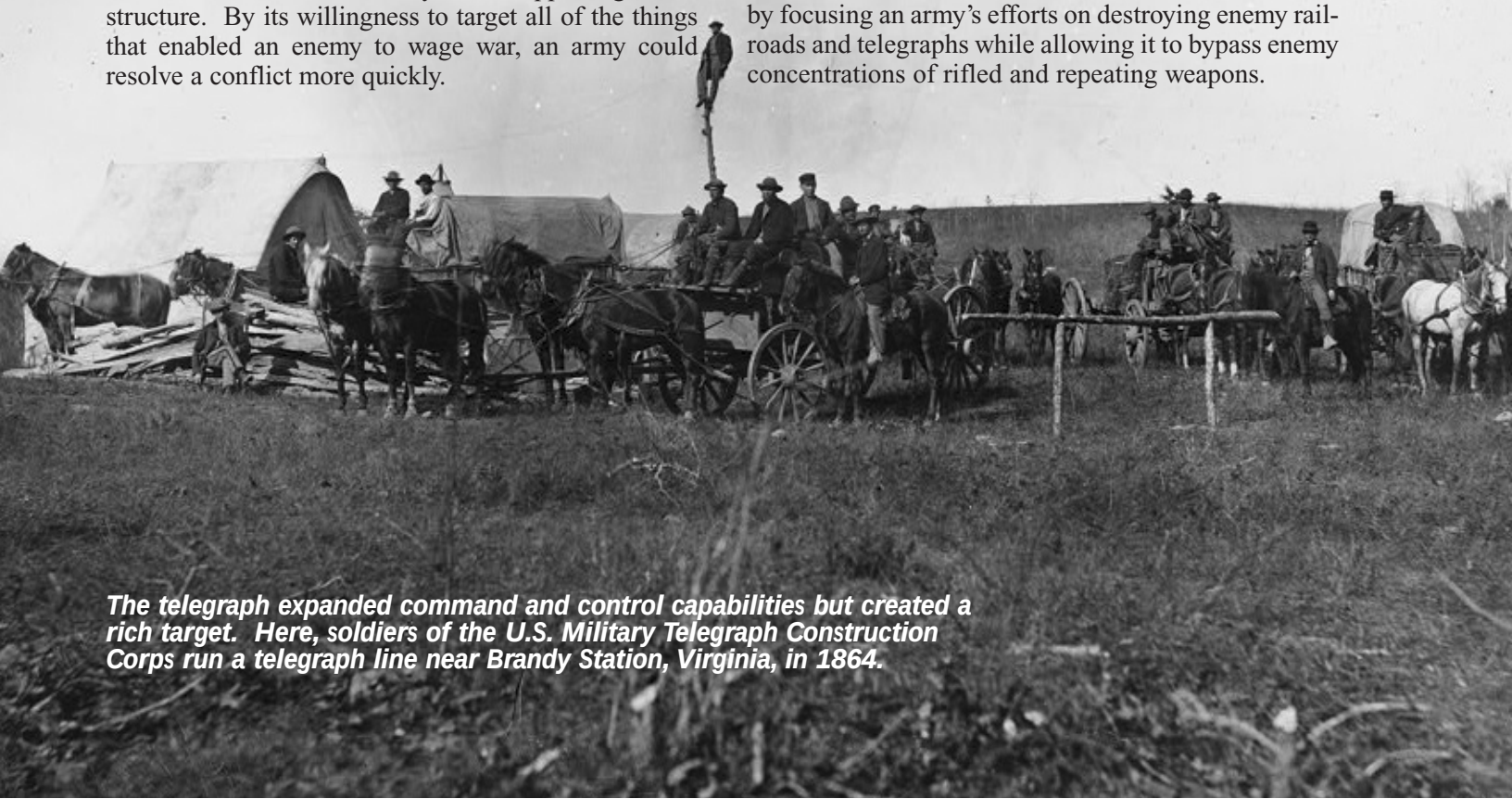
Technological changes gave birth to a new strategy of warfare aimed at an enemy's logistics— and to its demise.

Armies that adopted the tactics of Napoleon Bonaparte, the great French general of the early 1800's, achieved decisive victories. However, as the 19th century progressed, growth in the size of armies, combined with technological advances such as the railroad, the telegraph, and rifled and repeating weapons, reduced the ability of those tactics to lead to decisive victory. Napoleon's tactics were still valid. The problem was that they tended to produce stalemates when employed by opponents who were relatively equal in strength and tactical proficiency. A significant advance in the practice of warfare was needed to help make Napoleonic tactics decisive again. Union General Ulysses S. Grant, with his strategy of exhaustion developed late in the American Civil War, provided that next step.

The strategy of exhaustion shifted an army's main effort from either the enemy's army or its key geographical points, such as its capital, to its strategic-level logistics. It supplemented the tactics of Napoleon with focused attacks on an enemy's war-supporting infrastructure. By its willingness to target all of the things that enabled an enemy to wage war, an army could resolve a conflict more quickly.

Logistics, of course, had always been a target of opposing armies, but after February 1864 it would become the main target of most successful war campaigns. Attacking an opponent's logistics at a macro level helped expedite the outcome of a war, but it also placed important new demands on any post-war peace. Victors were wise to provide sincere assistance to the loser in rebuilding its economy and in reconnecting with its people. Otherwise, insurgents and guerrillas were potential byproducts of the deep feelings of revenge that a war of exhaustion could engender.

The strategy of choosing an enemy's logistics systems as its center of gravity helped an army win wars in three ways. First, it robbed the enemy of raw materials and infrastructure needed to support and maneuver its own large forces. Second, it weakened the resolve of enemy soldiers to fight by forcing them to question if the wartime hardships endured by their families and countrymen were worth the rewards that might come after a possible future victory. Finally, it countered the impact of technological improvements by focusing an army's efforts on destroying enemy railroads and telegraphs while allowing it to bypass enemy concentrations of rifled and repeating weapons.



The telegraph expanded command and control capabilities but created a rich target. Here, soldiers of the U.S. Military Telegraph Construction Corps run a telegraph line near Brandy Station, Virginia, in 1864.

Deficiencies of Napoleonic Tactics

So what did Napoleon's tactics lack by the time of the American Civil War in 1861? To answer that question, one must first examine the essential tenets of those tactics—

- Make the enemy react to your maneuver to disperse his mass and extend his lines into areas with reduced defensive advantages.
- Fix the enemy in place using skirmishes, artillery, feints, and demonstrations while probing his lines.
- Conduct attacks at multiple points of probable weakness, keeping the enemy off balance while still withholding a strong reserve.
- Use flexibility and interior lines to reinforce successes, divide the enemy force, and achieve decisive victory.

Napoleon's tactics seemed comprehensive. Unfortunately for the infantry soldier in the attack during the Civil War, the battlefield situation had changed greatly in favor of the defender—

- Telegraphs conveyed intelligence rapidly, giving the defender much more time to react, tactically and strategically, to an attacker's actions.
- Railroads were used to transport troops and materiel quickly to locations where telegrams had indicated to commanders they were needed most.
- Larger armies, more lethal weaponry, and entrenchments combined to make even the weakest defensive points relatively impregnable to attack.

Defenders thus could react to every flanking movement an attacker attempted, extend their lines, and still present defenses too formidable to be assailed. When attackers literally ran out of room to continue flanking, or realized that their next flanking movement would hit even stronger defenses than the ones currently to their front—which happened with the defenses of Richmond, Virginia, and Atlanta, Georgia, in the Civil War—stalemates ensued. Frontal assaults were always attempted as a last resort, but they were costly, and their failures eroded political resolve back home. So, what to do?

Exhausting the Enemy Wins the Civil War

The solution to stalemate was the strategy of exhaustion. In this strategy, the attacker maintained enough of a presence to discourage the defender from leaving his current positions to reinforce other positions. Then, after having fixed the defender's main forces, the attacker launched aggressive, deep operations in force that targeted the defender's means of waging a protracted war. This attack was not made just with cavalry, as in the past. Now, the attacker added large formations of infantry and engineers who had the means and training to more thoroughly destroy the enemy's logistics infrastructure.

This strategy was first employed on the railroad junction at Meridian, Mississippi, in February 1864. Moving east from Vicksburg, Mississippi, Union General William T. Sherman hoped to destroy the railroads south and east of Meridian so completely that the Confederates could not rebuild them. Sherman's troops were able to destroy 115 miles of track, 61 bridges, and 20 locomotives and render the depots and other support facilities at Meridian unusable by the Confederates.

Sherman's success at Meridian validated the exhaustion strategy of his superior, General Grant, the commanding general of all Union armies. Thereafter, Grant's strategy would be followed until the end of the Civil War, most notably in such operations as Sherman's "March to the Sea" from Atlanta to Savannah, Georgia, and General Phillip H. Sheridan's Shenandoah Valley Campaign in Virginia.

The solution to stalemate was the strategy of exhaustion. In this strategy, the attacker maintained enough of a presence to discourage the defender from leaving his current positions to reinforce other positions.

The exhaustion strategy moved logistics warfare beyond tactical raids that targeted only enemy military resources and beyond armies living off the land, taking only what they needed to subsist. Now, anything that might directly or indirectly help the enemy wage war was destroyed. This strategy, however, did not take logistics warfare to the level of "total war" it would reach in World War I or the "annihilation" of the American Indian wars. Unlike those two conflicts, hate and xenophobia were not strong components of this strategy; exhaustion did not directly target the lives of civilians or assets unrelated to the making of war. As Grant explained, ". . . supplies within the reach of Confederate armies I regarded [to be] as much contraband as arms or ordnance stores. Their destruction was accomplished without bloodshed and tended to [generate] the same result as the destruction of armies . . . . Promiscuous pillaging, however, was discouraged and punished."

New Strategy Counters Causes of Stalemate

A number of changes had occurred over the years since Napoleon was finally defeated in 1815 to make

Sherman's march across Georgia was a prime example of the strategy of exhaustion. This photo shows the ruins of a depot blown up as Sherman's troops left Atlanta for Savannah in the fall of 1864.

the strategy of exhaustion such an effective complement to Napoleonic tactics. First of all, the advent of large armies—the Union Army had 17,000 men in 1859 and 1,000,000 in 1864—meant that nations needed the economic and industrial strength to support such forces. This necessity turned industry and agriculture into viable, high-value targets. Large armies could be crippled by attacking their sources of support.

Second, railroads had become indispensable in both supplying and moving large armies. However, railroads also were vulnerable to attack and disruption. By 1865, everyone knew that a "Sherman necktie" was not something worn by a man with his suit—it was the uniquely mangled knot that Sherman's men made of Confederate railroad tracks. Ripping up railroad tracks and bringing down bridges became prime military missions during the Civil War.

Third, the advantages in command and control brought on by the telegraph quickly disappeared when telegraph lines were destroyed. Finally, the manpower requirements of invading armies were reduced because they no longer were compelled to leave behind forces of occupation—they left nothing in their wake to protect.

Demoralizing the Enemy—And Its Costs

An exhaustion strategy not only savaged an enemy's material means of waging war, it also debilitated the enemy in another way—psychologically. As Sherman observed, "Fear is the beginning of wisdom." The psychological impact of having an enemy force "stroll" right into your heartland, and do extensive damage along the way, was very high. It eroded confidence in the defender's war efforts and made its soldiers anxious over the well-being of their families back home. As Confederate General Robert E. Lee noted—

> [The actions of the troops defending Richmond in 1864] were not marked by the boldness and decision which formerly characterized them. Except in particular instances, they were feeble; and want of confidence seemed to possess officers and men. This condition, I think, was produced by the state of feeling in the country, and the communications received by the men from their homes urging their return and abandonment of the field.

Ultimately, "want of confidence" turned into actual desertion. The great Confederate armies were plagued by desertions during the war's final months. Some 40 percent of the Confederate troops east of

the Mississippi River deserted during the winter of 1864 to 1865. Many soldiers voted for peace by heading home.

So it was that Grant's strategy of exhaustion broke up a war that had degenerated into a protracted stalemate. When the exhaustion strategy was employed, it finally tipped the balance decisively in favor of the Union Army. Thereafter, it was given great consideration by strategists in conflicts all around the world. It had its inherent risks, though, for every time it was employed, attackers ran the risk of breeding strong emotions of hate and revenge in the civilians they affected. In World War I, for example, Germany gambled when it began unlimited attacks on Allied merchant shipping with their U-boats. They lost that gamble when the previously neutral United States, outraged by the U-boat attacks, entered the war on the Allied side.

Today, in the South, memories of Sherman's march still engender more feelings of disaffection than any other event in the Civil War. Abraham Lincoln had anticipated such a reaction, however, and had planned to construct a very forgiving peace. By doing so, he hoped to minimize the chances of creating Southern insurgencies that might have continued the war as a guerilla conflict.

Demise of the Strategy of Exhaustion

The strategy of exhaustion played a notable role in warfare from the last year of the Civil War through the strategic bombing campaigns of World War II. After 81 years, however, the strategy was finally discarded. It went out with a bang when atomic bombs were exploded over Hiroshima and Nagasaki, Japan, by the United States in 1945.

The strategy of exhaustion was eclipsed after 1945 for three basic reasons. First, the elevated risks that characterized the atomic era served to substantially restrict warfare and eliminate highly provocative strategies that might cause rapid escalations in conflict. Second, the new world order that emerged after World War II was deemed to be satisfactory by the major powers, and they worked toward preserving the status quo; a country that employed a destructive strategy of exhaustion during a conflict threatened that order by upsetting the balance of power. Finally, it was no longer in the best interest of countries to employ a strategy of exhaustion because, in modern conflicts, it did not serve their wartime ends; modern technology meant that an aggressor might face a severe retaliation and find itself the one "exhausted."

When the United States unleashed its nuclear fury on civilian centers in Japan, it brought a decisive end to World War II. Attacks on nonmilitary targets that supported the war effort were the essence of a strategy of exhaustion. However, in 1945, the potential destruction inherent in these attacks became too much for the world to bear. Then, when nuclear weapons spread to the Soviet Union, people recognized quickly that there would be no winners in the world's next total war. As British Prime Minister Harold Macmillan put it in 1957, "Let us be under no illusion; military forces today are not designed to wage war; their purpose is to prevent it."

Disrupting railroads was an important goal of both Union and Confederate armies, and repairing those disruptions was a constant activity. Here, workers repair tracks near Murfreesboro, Tennessee, in 1863.

With the major powers too afraid to wage wars among themselves, they could only advance their interests indirectly by supporting "liberation movements" around the globe. A strategy of exhaustion had no impact in these small wars because each country (or movement) easily resurrected any damaged logistics capability with sustainment from its superpower sponsor.

Return of Stalemate

In the world order that emerged after 1945, a nice, tidy stalemate that kept each power in check became something of value, rather than frustration, to national leaders. While military leaders continued to promote strategies for total victory, such as General Douglas MacArthur's China strategy in the Korean War and the Joint Chiefs of Staff's recommendations during the Vietnam War, political leaders balked, apparently being more interested in a good tie than a victory.

Stalemates also were valuable in the new world order because they protected a growing global economy that could become depressed if any one country's economy was significantly harmed. The emergence of "superpowers" such as the United States and the Soviet Union brought with it the notion of "super responsibility." This notion compelled the United States and the Soviet Union to make all of their military responses proportional to their objectives. Otherwise, they risked the loss of international allies who did not want to align with a unilateral bully or, worse yet, a "flexible response" from the other superpower that pushed them down a slippery slope to nuclear destruction.

While it was no longer politically astute to attack a nation's civil-military support systems, it was not militarily effective either. Smaller conflicts involving smaller, less technologically advanced armies were not impacted by a strategy of exhaustion. Bombing petroleum reserves in North Vietnam, for example, did little to impact the North Vietnamese Army because it did not use much fuel, and what little fuel it did need usually could be obtained from Soviet Bloc allies.

As technology increased, dependence on mass resources decreased and so did a nation's vulnerability to an opponent's strategy of exhaustion. The ultimate example of that trend came in Operation Iraqi Freedom, in which a very lean fighting force delivered awesome lethality in a very short period of time using rather austere lines of supply. Finally, the strategy of exhaustion, with its tendency toward high collateral damage, became a poor choice for major powers because it tended to increase the probability of post-war guerilla movements and insurgencies. Asymmetrical threats and terrorism became predominant worries after 1945. As a result, the "hearts and minds" of one's opponents, rather than their support systems, became the new center of gravity in warfare.

> The strategy of exhaustion played a notable role in warfare from the last year of the Civil War through the strategic bombing campaigns of World War II. After 81 years, the strategy was finally discarded.

So, after a period from 1864 to 1945 dominated by the strategy of exhaustion, we now have returned to fighting wars the way they were fought in Napoleon's time. Conflicts again are resolved directly—by attacking opposing military forces—rather than indirectly—by crippling an opponent's logistics infrastructure—and with great emphasis on military professionalism and restraint. Wars are limited with exacting refinement to achieve very specific political objectives. In such a world, the strategy of exhaustion—a strategy that helped bring decisive victory in some of the most horrific conflicts mankind has ever seen—no longer has a place. Its provocative nature, the greater perceived benefits of peace, and the scaled-down nature of modern conflicts have all combined to bring about its obsolescence.

Although we no longer see it determining the conduct of "hot" wars, one could argue that a strategy of exhaustion won the Cold War. After all, the Soviet Union crumbled without a shot being fired as a result of decades of military buildup that devastated its economy to the point where those in power decided that the price of pursuing victory was no longer worth paying. That kind of cost-benefit analysis is a hallmark of the strategy of exhaustion. Perhaps the powerful strategy of exhaustion has not really disappeared but rather has been "elevated" out of the military arena and into the political one. **ALOG**

Major Lawrence M. Smith, MDARNG, currently is serving on active duty with the Joint Staff (J–2) at the Pentagon. He has held a variety of duty positions in each of his three qualified branches—Intelligence, Engineer, and Chemical. He holds a B.S. in animal science from Cornell University. In civilian life, he trains thoroughbred racehorses on a farm near Baltimore, Maryland. This article is based on papers he prepared while a student at the Army Command and General Staff College.

Aviation Ground Support Equipment: The Forgotten Enabler

BY LIEUTENANT COLONEL ROBERT H. LUNN AND RODERICK A. BELLOWS

Since its establishment in December 2003, PM AGSE has taken a number of steps to improve the condition of the Army's aviation ground support equipment.

Aviation ground support equipment (AGSE) includes a variety of items needed to support Army aircraft before and after flight. Unfortunately, the Army's stock of this equipment is aging and falling into disrepair. To address this issue, Program Executive Office, Aviation, converted the Weapon Systems Manager Office, AGSE, to a Product Manager Office (PM), AGSE, in December 2003 and charged it with correcting the AGSE problems. With this change, the organization transitioned from providing sustainment to providing total life-cycle management.

PM AGSE's challenges include matching AGSE with capabilities-based unit designs, meeting across-the-board requirements for all aviation assets, and reducing the aviation footprint for logistics and maintenance. With finite resources, PM AGSE is looking to create a balance among current requirements, transformation, and future needs.

The shop equipment contact maintenance platform that mounts on a high-mobility, multipurpose, wheeled vehicle has compartments for supplies, tools, and spare parts.

Tackling the Problems

To ensure they have a true picture of the current state of AGSE, the PM and his logistics chief personally have visited every Army aviation maintenance support activity participating in Operation Iraqi Freedom in Iraq and Kuwait. In meetings on their home turf, tactical commanders, maintenance officers, maintenance noncommissioned officers, and the soldiers using the equipment raised several common issues to the PM—

- Units do not have dedicated AGSE maintainers.
- Units want the capability to wash aircraft in tactical situations.
- Units want a standard towing system for moving aircraft.
- Units want updated aviation intermediate maintenance (AVIM) and aviation unit maintenance (AVUM)-level shop sets and transports.

PM AGSE is pursuing solutions to the issues of transformation and two-level maintenance requirements that balance the needs identified in the field with available resources. PM AGSE is determined to meet the needs of the soldier, accelerate the fielding of mature technology, enhance readiness, and meet designated military objectives. The PM shop is working on several products that are designed to accomplish these goals.

Shop Equipment Contact Maintenance

Shop equipment contact maintenance (SECM) is a vehicle-mounted maintenance platform with compartments that can hold mission-essential equipment, including expendable supplies, spares, tools, and repair parts. The modular design of SECM allows for adding modules. Currently, 65 SECMs have been issued to units for test and evaluation. A full-rate production decision review is scheduled for the third quarter of fiscal year 2005. Procurement should begin during the same time period, with the first unit equipped late in fiscal year 2005.

Aviation Ground Power Unit

The aviation ground power unit (AGPU) is designed to provide electrical, hydraulic, and pneumatic servicing of rotary-wing aircraft. Modifications to the unit include improving the hydraulic filtration, exhaust, battery, forklift slots, and power source. Another modification is designed to increase the alternating current continuous

output and overload performance of the current power unit in order to meet the ground servicing requirements of the AH–64D Apache Longbow helicopter. This modification introduces improvements to the electrical system, control panel, gas turbine engine exhaust ejector assembly, and pneumatic system on the power unit. The AGPU will also undergo a complete turbine engine refurbishment. Procurement of the modified unit began in the fourth quarter of fiscal year 2003.

Aviation Turbine Engine Diagnostics System

The Aviation Turbine Engine Diagnostics System (ATEDS) is software hosted on a portable computer with an electronic interface device that uses artificial intelligence, an export system, and an interactive electronic technical manual with detailed instructions for performing required diagnostic testing and electronic troubleshooting. The system provides an effective, accurate, and reliable means of performing on-aircraft turbine engine fault analysis in a field environment. It will undergo systems integration through fiscal year 2005 and will be ready for production beginning in the first quarter of fiscal year 2006.

Multipurpose Aircraft Support System

The multipurpose aircraft support system (MASS) will be used to reposition fixed- and rotary-winged aircraft and AGSE in hangars and maintenance areas. This equipment will provide a standard towing system for soldiers in the field. It will be logistically supportable and capable of on- and off-road convoy operations without being a secondary load. System development began late in fiscal year 2004 and will continue through fiscal year 2005. Several towing systems will be purchased from vendors who can meet the performance specifications. These systems will be rotated through selected aviation units, and the best system will be selected for fielding. Procurement of the selected system will begin by the second quarter of fiscal year 2006.

Unit Maintenance Aerial Recovery Kit

The unit maintenance aerial recovery kit (UMARK), which replaces the aerial recovery kit (ARK), provides an aerial recovery capability for Army aircraft. The initial urgent need statement allowed for the procurement of 11 kits in support of Operation Iraqi Freedom. By the end of the first quarter of fiscal year 2005, the 240-kit fielding should be complete.

Battle Damage Assessment and Repair

Battle damage assessment and repair (BDAR) kits include electrical repair tool and consumable kits, high- and low-pressure fluid-line repair kits, and fuel cell or skin repair kits. Eleven sets were procured, assembled, and shipped within 30 days to support Operation Iraqi Freedom. Sixteen kits for unit-level maintainers were procured during the fourth quarter of fiscal year 2004. A full-rate production review with decision authority is scheduled for the first quarter of fiscal year 2005.

The Aircraft Cleaning and Deicing System is safe for all aircraft and can use virtually any type of water, including salt water.

Aircraft Cleaning and Deicing System

The aircraft cleaning and deicing system (ACDS) is a self-contained, stand-alone, portable, lightweight, low-pressure aircraft and engine cleaning and deicing system. It is designed to collect and filter water runoff as required by the Environmental Protection Agency. The system operates at 4 gallons per minute and 300 pounds per square inch, making it safe for all aircraft, and can use virtually any water source, including salt water. Testing was conducted in fiscal year 2004. Production is scheduled to begin during the second quarter of fiscal year 2005.

Aviation Vibration Analyzer II

The aviation vibration analyzer (AVA) II will provide a rugged, portable, and safe means of performing helicopter maintenance for both main and tail rotors. It will measure, record, and process vibration and blade position information to diagnose and correct rotor vibration-related faults. Procurement of a new aviation vibration analyzer is based on vibration management enhancement program technology. The circuit card assembly of the current system is outdated. Procurement of the new system will begin in the third quarter of fiscal year 2005.

Digital Aircraft Weight Scales

The digital aircraft weight scale (DAWS) is a nondevelopmental, commercial off-the-shelf item available through the General Services Administration. It is structured to provide a lightweight, man-portable scale that gives aviation unit maintenance and aviation intermediate maintenance organizations the capability to weigh Army helicopters without first leveling the aircraft. This speeds weighing and deployment operations. Production and fielding of the DAWS was completed in fiscal year 2003.

Nondestructive Test Equipment

Nondestructive test equipment (NDTE) is a set of four electronic test instruments that can be used to inspect aircraft components and structures for defects, corrosion, or the presence of foreign objects without having to completely disassemble or remove

Soldiers push a helicopter onto digital aircraft weight scales.

components from the aircraft. Each set consists of one industrial X ray, two eddy current testers, two harmonic bond testers, and two ultrasonic testers.

The NDTE is a commercial off-the-shelf item procured either through an Air Force-Navy contract or directly from the manufacturer. Because of obsolescence, the eddy current testers, harmonic bond testers, and ultrasonic testers were replaced between fiscal years 2003 and 2004.

Centers of Excellence

The PM AGSE maintains both the Nondestructive Test Center of Excellence and the Corrosion Prevention Control Center of Excellence. The Nondestructive Test Center of Excellence provides technical support to the Army engineering community as well as to the warfighter in the field. It also provides technical support to all current weapon platforms by developing inspection procedures, conducting onsite technical assistance visits, and training the Army National Guard on nondestructive testing. The Corrosion Prevention Control Center of Excellence provides a unified approach to corrosion prevention control by standardizing procedures and corrosion prevention compounds, providing technical expertise and coordination, maintaining a clearinghouse for depot maintenance work requests and technical manual updates, and supporting the Army Materiel Command's corrosion program.

Short-Term Actions

To alleviate immediate operational support shortfalls, PM AGSE has—

- Procured, assembled, and shipped battle damage assessment and repair kits directly to deployed units.
- Push-issued unit maintenance aerial recovery kits to Operations Enduring Freedom and Iraqi Freedom.
- Fielded shop equipment contact maintenance platforms to AVIM units.
- Overhauled the current aviation vibration analyzers for direct return to Operations Enduring Freedom and Iraqi Freedom, with a 24-hour depot turnaround.
- Begun reset of aviation ground power units and established theater repair cycle float for Operations Enduring Freedom and Iraqi Freedom. [Resetting the power units takes the equipment as it returns from an operation and conducts the maintenance needed to bring it back to a fully operational state. A theater repair cycle float is a pool of equipment that can be loaned to a unit in place of equipment being repaired.]

The path ahead for PM AGSE is changing with Army aviation. PM AGSE has designated several internal focus areas for meeting the challenge of change—

- Finding a maintainer for AGSE.
- Reprioritizing AGSE products to meet soldier and mission needs.
- Developing evolutionary acquisition strategies with a goal to "field a Chevy, not a Cadillac."
- Developing multipurpose systems that are configurable and reconfigurable.
- Pursuing modularization, flexibility, and interoperability in the design, procurement, and support of AGSE.
- Improving diagnostic and prognostic capabilities.
- Reassessing the level of repair analysis.
- Conducting a complete sets, kits, outfits, and tools onsite review for AGSE in the first and second quarters of fiscal year 2005.
- Ensuring that designs of new AGSE systems support a two-level maintenance process.

PM AGSE continues to look at families of systems and systems of systems to fill capability gaps. Its top priority is providing the logistics soldier with the best equipment, reducing his workload, and enhancing readiness in support of a diverse range of missions. Aviation logistics' keystone enabler—AGSE—is no longer forgotten. **ALOG**

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Transforming the Theater Support Command

BY MAJOR GENERAL GEORGE WILLIAM WELLS, JR., USAR

In his final article on the theater support command, the author suggests that the key to improving the Army's multicomponent support organization may be creation of a separate Reserve component augmentation.

For a number of years, Reserve component soldiers integrated into theater support commands (TSCs) have been working to "get it right." As I noted in my articles in the last two issues of *Army Logistician*, the professional energies of TSC soldiers sometimes have been diverted from accomplishing the mission by cultural differences between the Active and Reserve components, self-imposed barriers and fears, and miscommunications and misunderstandings. The success of an integrated, multicomponent organization like the TSC depends on efficient and effective use of all of its assigned personnel, whether they come from the Active or Reserve components. All TSC personnel must focus on the positives, not on the distractions, in their work. The TSC requires an operational view that is different from that of any other organizational structure the Army has developed to date. What follows are my thoughts about what such an operational view should include.

Transformation and the TSC

Like other organizations within the Army, the TSC must continue to transform itself. It must become more agile and transient in executing the mission at hand. Future scenarios in the Department of Defense envision further reductions in the duplication of support activities provided by each service to their personnel. In fact, the future will be directed toward joint logistics. Joint logistics may result in a logistics headquarters command that includes the current TSC structure in an expeditionary, multiservice organization that may or may not be commanded by an Army element. Ad hoc support and staff logistics arrangements of the past must become embedded realities of tomorrow. Jointness is the long-range solution to the military's current distribution challenges and will be the hallmark of its future logistics architecture. Support will be consolidated and services outsourced as forces become more agile.

The future force will be lethal and able to survive, with a reduced logistics footprint, improved sustainability, and a streamlined, flattened echelons-above-corps (EAC) logistics force. As part of the One Army concept, the TSC must be ready to deploy in the first 15 days of an operation. In effect, the logisticians of the TSC cannot remain as a tail; instead, they must be embedded structurally with the combat warrior. Those of us who serve in TSCs must remain relevant.

The TSC must have a flexible structure that can expand and change, in much the same way that an amoeba adapts to its environment. The future logistics force must be able to respond with the combat warrior to a hotspot, complete the mission, and rotate out. As logisticians, we must be able to expand and contract to fit the warfighter's need.

What is in store for the TSC? Based on the logistics transformation challenges of today, it is apparent that we need to change the paradigm of how the TSC is administered, supported, trained, and organized.

Problems With TSC Headquarters

Let's look at the integrated TSC headquarters. Do we really need the number of Active and Reserve component slots currently in the headquarters element of the TSC? Maybe not! Does the day-to-day support environment really require the number of Active component soldiers currently assigned to the TSC? It might be more logical to have senior military managers oversee a civilian structure in normal headquarters operations. Under this scheme, brigades would launch forward with added support from a Reserve logistics augmentation to meet requirements for a split-based or forward headquarters. Without the reserve augmentation, the Active component TSC would become overwhelmed in a contingency scenario.

Without Reserve component personnel serving on a full-time basis, TSCs headquarters are thin in personnel. This is due in part to the integrated staff structure and low authorized level of organization ratings and because TSCs are not fully supported in their authorized Active component slots. [The authorized level of organization is the percentage of assets (personnel and equipment) in a unit's table of organization and equipment (TOE) that the unit is authorized to maintain.] TSC Active component elements compensate for their lack of Active fills and activated Reserve component soldiers by increasing the number of table of distribution and allowances slots and hiring Department of the Army (DA) civilians and local nationals. This allows TSC headquarters to fulfill their assigned missions.

Currently, if the Reserve component element of a TSC headquarters is activated and is not employed in a split-based operation, its soldiers have no work to do and are redeployed to their home station. TSC leaders must carefully weigh how they will employ added Reserve component soldiers immediately following a contingency operation.

A Proposal for TSC Restructuring

The TSC restructure I envision would delete the Reserve component elements from the current modification TOEs (MTOEs) of the four TSCs and combine them into one, stand-alone MTOE document. [The four TSCs are the 19th TSC at Daegu, Korea, with continental United States augmentation (CONUS AUG) headquartered at Des Moines, Iowa; the 9th TSC at Camp Zama, Japan, with CONUS AUG based at Fort Belvoir, Virginia; the 21st TSC at Kaiserslautern, Germany, with CONUS AUG headquartered at Indianapolis, Indiana; and the 377th TSC at New Orleans, Louisiana.]

The TSCs would be left with their Active component spaces. Based on their daily mission support requirements, the deployed Active component TSCs likewise would modify their structures. The TSCs' Reserve component CONUS AUG elements would be staffed in the event that split-based operations became a necessity. This means the Reserves would perform as a forward early entry module command post (EEMCP) anywhere in the world if called on by the Army.

Currently, the total number of Reserve component spaces in the combined TSCs is approximately 800. Of these spaces, 400 would be returned to the Army Reserve to use in restructuring the Reserve force. This would assist the Chief of the Army Reserve in his vision of support to the Army by providing personnel for standing up additional companies in civil affairs, military police, medical services, and transportation.

The remaining 400 spaces would be aligned under the separate CONUS AUG MTOE and divided into four independent elements aligned to two TSC cells. For simplicity's sake, the 19th TSC and 9th TSC would be known as Cell West and the 21st TSC and 377th TSC would be aligned as Cell East. The Reserve CONUS AUG MTOE would be heavily staffed with logisticians. It would incorporate the EAC logistics field commander's view and would be reviewed once a year at a senior leader logistics conference. The four elements would be equally qualified to respond to the field commander's needs.

This separate CONUS AUG structure would be commanded by a trained logistics major general. The selection of the major general would be based on his linkage with the combat service support (CSS) community, his time spent in the TSC structure, and his knowledge of logistics imperatives. He would be responsible for training the Reserve component TSC logistics force.

When called on, the four independent elements would provide full-strength support. Members who may not be able to go on the first lift would be replaced by other members holding their positions. The cells would deploy forward to contingencies, bypassing the mobilization stations. Support would be based nearly 100 percent on the four separate EEMCP-type organizations. They also would be tailored to support specific requirements, such as performing as a corps support group. The senior commanders of the TSCs would field test and validate Reserve component elements to project forward.

The major general, through consultations with the Active component TSC commanding generals, would direct the training of these separate CSS packages. The actual training would be conducted by a brigadier general deputy commanding general, assisted by four trained senior logistics colonels supported by a number of lieutenant colonels and junior mid-level managers. For example, each colonel would have support from, at a minimum, operators who have experience and skills gained in previous senior logistics assignments. These soldiers would be handpicked and assigned to this logistics MTOE structure by the CONUS AUG senior leaders.

The Reserve component elements would continue to be based at their present locations. These locations have served well for recruiting and retaining soldiers. Maintaining them would eliminate possible economic harm to an area that could result from losing military units, perpetuate unit identities and traditions, strengthen the identification of current soldiers with the transformed organization, and continue the alignment of the Reserve base structure with the supporting Regional Readiness Commands.

Having a separate structure would allow the Reserve and Active components to manage their internally controlled spaces without undue outside influence. Each component would be responsible for its own resources. One-year active-duty tours in a TSC would increase the role of Reserve structures in a theater. By assigning a number of Active Guard/Reserve and Active component soldiers to each TSC's CONUS Reserve element headquarters, the TSCs would fully meet the intent of the force. Follow-on Troop Program Unit members would supplement the forward element during their annual training and individual duty training weekends.

Training would change to allow for a full-up element to deploy on overseas deployment training (ODT). Normal ODT rotations would still be employed. The cells would be trained as a total element to develop the

perception among all soldiers of one, integrated unit. When a cell went on ODT, it would require a soldier readiness program (SRP). The SRP would be conducted semiannually. Those soldiers falling out during these SRPs would be replaced immediately by members of other independent elements within the CONUS AUG. The CONUS AUG element would be a Tier 1 DA Master Priority List entity, and the Army Reserve Command would be required to have it fully filled with a readiness factor of 90 percent.

Annual training would be focused on a different area of operations for each of the four independent elements. This would allow soldiers to be well rounded and able to supplant those soldiers unable to respond so the TSC on the receiving end would not be shortchanged. This method would relieve the Regional Readiness Commands from having to cross-level personnel into the TSCs.

If a contingency should grow and the mission call for a split-based operation, the Reserve CONUS AUG would respond to formal request channels to alert and call forward the appropriate Reserve component slice.

Meeting Logistics Imperatives

The Army Reserve complements the Army's core competencies to train and equip soldiers and develop future leaders. It helps fill the support role of providing a relevant and ready land power capability to the regional combatant commander as part of the joint team. My proposed TSC restructure would fulfill the Army Reserve imperative to provide a predictable and sustainable rotation based on depth of capability. The mobilization of the TSCs' Reserve component elements would relieve Active component rotational forces in theaters around the world. CSS and combat support Reserve units will help to even out the workload across the Army by providing a base of experienced individuals with real-world operational backgrounds. The TSC mirrors the empowerment of the Army Reserve by adding operational depth to the Army, relieving some of Army logisticians' operating tempo, meeting the demands of continuous contingency operations, and assisting in achieving unit readiness.

The TSC serves as a surrogate EAC logistics trainer in CONUS. Reserve soldiers bring skilled logistics military occupational specialties to the table; in many cases, they also add civilian skills critical to the operational and administrative needs of the total TSC. Their skills create a win-win situation for all TSC logisticians. This is especially true for junior leaders, whose roles will be critical in the future.

Reserve soldiers are valued assets in developing internal procedures for the expansible TSC structure, while day-to-day operations are handled by the Active component. The Reserve component is key to mobilization and technical operations in the field. Reserve soldiers offer a stable, mature workforce that is positioned for the long haul. For the most part, they are committed team members devoted to their units. They have learned their skill sets through years of dedicated service. Unlike Active component soldiers, who continually change locations and CSS positions, Reserve component soldiers remain in their units.

The augmented Reserve element structure I have described would allow the Army to supplement the needs of the forward TSCs. The CONUS AUG cells, or portions of them, would be called forward by the Army. There would be no need to cross-level soldiers because the teams would deploy at full strength. There would be few, if any, administrative challenges during and after the deployment because Active and Reserve component systems would remain separate; Reserve component personnel would remain in the Army Reserve's Regional Level Application Software. Training and Standard Army Management Information Systems requirements would be conducted in a parallel fashion. Integration would be visible when the Active and Reserve component soldiers found themselves working for one another in various scenarios. There would be no need for memoranda of agreement. Ratings of the senior Reserve leaders would be directed from the highest echelons of the Reserve community. In the end, the relevance of the Reserve component personnel would increase.

There are a number of multicomponent councils and committees at various levels of the Army Forces Command and DA. Unfortunately, as a community, TSC leaders have not exercised their strength to sit at the table and lay out their needs and concerns. One of the persistent challenges for TSCs is bringing together commanders and appropriate staff to work on making TSC integration smoother and easier for all.

The TSC must continue to transform into an amoeba-like organization that effectively supports the needs of the combatant warriors of the 21st century. At the same time, we must acknowledge that changing in a hasty manner may overshadow the success of TSCs as a military force. As a professional logistician, I am confident that the TSC transformation will be successful. **ALOG**

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COMMENTARY

Filling a Strategic-Level Void

BY COLONEL LARRY D. HARMAN, USA (RET.)

As the world's only "hyperpower," the United States seeks to maintain both the strategic high ground in world affairs and military superiority to advance and protect its interests. Our military is doing its part, along with the other instruments of national power (diplomatic, informational, and economic), by transforming on a massive scale to achieve a broad competitive advantage over any adversary. To many, structural changes, especially in the areas of force projection and sustainment, are necessary to achieving success. Although the word "structural" suggests permanence, or even rigidity, the term as used here refers to better defined relationships among an adaptive system's capabilities. In other words, better defined relationships lead to new levels of teamwork and jointness that achieve stunning results.

Essentially, these structural changes extend from the highest levels of the Department of Defense (DOD), including its links to interagency, industrial, and multinational partners, down to the tactical levels within the individual armed services, where violence is actually applied. More precisely, structural changes must be driven at all levels, vertically and horizontally, to achieve coherence and convergence of functions, policies, organizations, doctrine, networks, and processes. To accomplish this, the capabilities of DOD, the Defense industrial base, and the Defense Transportation System (DTS) require redefinition and realignment. This effort is very complex and disruptive, but it is mandatory if the essential capabilities codified in the futuristic joint operating, functional, and integrating concepts are to become realities.

A Strategic-Level Void

My focus in this article is intentionally limited to the strategic level, with the understanding that the operational and tactical levels of warfare are affected directly and indirectly by structural changes, or the lack thereof, at the strategic level. In this article, the U.S. military's strategic level includes the Office of the Secretary of Defense (OSD); the Office of the Chairman of the Joint Chiefs of Staff (OCJCS); the Joint Chiefs of Staff; the Joint Staff; the Defense agencies; the Defense industrial base; the DTS; strategic links to the National Security Council, the Department of Homeland Security, joint headquarters, and interagency, multinational, industrial, and academic partners; and the service-level headquarters.

The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise with the occasion. As our case is new, so must we think anew and act anew.

—President Abraham Lincoln, addressing Congress in 1862

A common framework already exists to develop and assess tactical-level and, to a lesser degree, operational-level structural changes. We know this framework as "DOTMLPF" (doctrine, organizations, training, materiel, leadership and education, personnel, and facilities). Unfortunately, at the strategic level, DOTMLPF development and assessment are difficult to perform. The reason is that there appears to be no disciplined process for capturing and assessing required structural changes at this high level and then making necessary changes in a timely manner. Given the "tyranny of time" and the "unforgiving high stakes" associated with national security, the U.S. military cannot allow strategic-level structural shortcomings to remain problems.

Today, the services, U.S. Joint Forces Command, and U.S. Special Operations Command are primarily responsible for DOTMLPF development. In fact, Title 10 of the U.S. Code assigns this set of responsibilities. This arrangement, however, is beginning to reveal alarming signs of inadequacy.

Due in large part to the absence of a disciplined, formal process to identify, assess, and make rapid changes at the strategic level, a significant structural void is emerging. This void is exacerbated by a distinctive blurring of strategic, operational, and tactical activities. Harmful DOTMLPF seams, gaps, and mismatches involving the regional combatant commands, Defense agencies, and services also must be addressed to achieve a more globally integrated, coherently joint, interdependent force. These problems can be found, for example, in mobilization processes, logistics, force protection, base closure and realignment, budget processes, and portions of Title 10 of the U.S. Code. More and more, the strategic level must be dynamically connected to joint, interagency, multinational, and industrial capabilities.

This strategic-level void, if left unchecked, will grow until a viable strategic-level solution is implemented. This begs the question: Is there a need to redefine and

realign the U.S. Defense establishment's strategic-level structure so that it can collaborate more effectively, anticipate sooner, adapt better, and act faster in future global scenarios requiring joint, interagency, and multinational intervention? I think that such a rebalancing is long overdue. If this is true, then what is the "forcing function" to make it occur—not just once, but as needed in the future?

Forcing Change

Today, strategic-level structural changes occur in response to Administration edicts, legislation and subsequent appropriations, and DOD- and service-level policies and directives. Regrettably, unless confronted with an urgent crisis, such as the events of 11 September 2001 and the subsequent Global War on Terrorism, significant structural changes take years to implement, if done at all. Short of catastrophic events, strategic-level structural changes within our military establishment do not occur rapidly. Said more precisely, a perceived or actual "need" for strategic-level structural change must become critically urgent to senior decision makers, some of whom are either elected officials or Presidential appointees, to receive the proper attention. Conceivably, a major event covered by the media, such as coalition civilian contractors being taken hostage or killed in Iraq, can illuminate the need for a strategic-level change.

Grand changes also are often slow to occur in the Defense industrial base and the DTS. This slowness results in part from a reluctance by U.S. manufacturing and transportation industry leaders to change and accept greater risk. Undue emphasis on efficiencies in procurement and transportation of forces and their supplies also can often overshadow the need for operational effectiveness.

I believe that not having a disciplined and formal process to make high-level DOTMLPF changes puts the United States at higher risk in terms of preventing, adapting to, and eliminating future threats. Some may argue that the DOD and service transformation campaign plans or roadmaps and the Joint Capabilities Integration and Development System eventually will become the formal mechanisms for change. Potentially, this is true. However, these efforts tend to focus on service and joint forces in the aggregate and may not focus specifically on the military's strategic level.

Evaluating Strategic-Level Changes

What are the strategic-level "golden nuggets" that cause military operations to occur with great speed, precision, adaptability, agility, sustainability, and protection? Collectively, these "golden nuggets" act as a catalyst for the changes that will yield unprecedented, seemingly unimaginable, capabilities in all domains—cognitive, informational, and social as well as physical. Essentially, a more balanced DOD-wide approach to military operations is the desired result. Here, "balanced" means having the capabilities in place to collaborate, anticipate, plan, adapt, and act faster and better to achieve desired end states.

To start, some fundamental questions must be debated and resolved with each potential change at the strategic level—

- What is driving the need for this strategic-level change? Is it the emerging geopolitical landscape? A new, more advanced threat? An emerging technology? A new type of mission? A more thorough understanding of an existing or potential threat?
- What is the expected impact of this change when the Nation confronts traditional, irregular, disruptive, and catastrophic challenges and threats, possibly simultaneously?
- Which domains are involved in this change—physical, informational, cognitive, or social?
- What is the potential ripple effect caused by implementing this change? How are the services affected? How are interagency and multinational partners, industry, and academia affected? Do responsibilities, authorities, and accountabilities change? Is congressional legislation required?
- Does this change effectively balance centralization and decentralization in terms of command and control, planning, and execution?
- What type of strategic-level change is required? Will it affect the size of forces? Their capabilities? Composition? Processes? Behaviors? Active or Reserve component units?
- Are readiness, effectiveness, adaptability, and efficiency improved at the joint force commander (JFC) level? Do the JFC's employment options increase because of this change?
- Does this change improve strategic-level agility, flexibility, and adaptability?
- Does this change contribute to networked joint, interagency, and multinational operations?
- Does this change either eliminate or reduce harmful seams and gaps in force projection, employment, and sustainment operations?
- Is this change affordable in terms of risk or funding? Does it improve readiness? Is it politically feasible? Are cost savings realized by retiring legacy systems, processes, or organizations?
- Does this change reduce the challenges associated with high demand for low-density capabilities that currently plague our military?
- Who is championing, advocating, or opposing this change and why?
- Is this change potentially revolutionary in terms of

prosecuting and supporting military operations on a global scale?

- Who is the final decision-making authority?
- At what frequency should a strategic assessment of potential changes occur?

Remedying the Void

Obviously, the answers to these questions will provide clarity, insight, and possibly justification for potential change. However, once the preliminary answers are known at the strategic level, then what? The solution set still must be approved, resourced, and implemented. Here is a partial list of remedies—

- Since intelligent, determined, and capable adversaries will oppose the United States and its allies and friends, the United States must be capable of making extremely rapid strategic-level structural changes that allow preemptive and simultaneous tactical-level actions to thwart adversaries.
- Strategic-level changes must be preventive in meeting security challenges rather than just punitive.
- DOD and service transformation campaign plans must place sufficient emphasis on internal structural changes at the senior levels.
- The strategic-level structure must be designed to achieve coherence and convergence of functions, policies, organizations, doctrine, networks, and processes that, in turn, produce higher operational- and tactical-level readiness and effectiveness.
- Strategic-level structural decisions must be made early so benefits are available *before* they are critically needed. For example, if a joint Sea Basing concept is essential, or customer wait time for sustainment replenishment must be reduced dramatically, in the 2015 timeframe, then strategic-level decisions must be made now. Significant penalties from the strategic to the tactical levels normally occur when strategic-level decisions are delayed. The potential consequences of postponing strategic-level decisions are deadly. Timing is crucial.
- The Quadrennial Defense Review (QDR) process must be expanded to include a more thorough internal assessment of DOD's structure, including OSD itself, the OCJCS, the Joint Staff, the roles and missions of the services and the unified commands, and all other DOD supporting agencies. This assessment also must include the viability of the Defense industrial base and the DTS. The QDR process actually can become the primary means of forcing strategic-level structural changes.
- The QDR process must be used to identify and prioritize required structural changes at the senior levels; determine DOD's progress in collaborating and developing interoperability with interagency, multinational, industrial, and academic partners; assess mutually beneficial interdependencies among the services and other Federal agencies; and evaluate progress in minimizing and eliminating harmful DOTMLPF gaps, seams, and mismatches.
- New metrics must be employed to drive force planning processes. These metrics should include the ability to create and preserve options and develop high transaction rates and high learning rates and should achieve complexity that overmatches an adversary at a scale in proportion to the operation.
- As necessary, DOD's own transformation process must be transformed to accommodate rapid strategic change.

Today, many world leaders perceive the United States as a 21st century "information age" empire. History teaches us that empires can and do collapse; remember the British and Soviet empires. If the United States is indeed a de facto empire, albeit of a different kind, how long will it maintain this singular status? What are the strategic military and security implications of managing empire status?

The U.S. military is not preordained to remain the world's premier combat power and exporter of armed security. In its quest to remain second to none, the U.S. military must lead all of the world's militaries in creativity, initiative, learning, adaptability, agility, and power—not just in the physical domain, but in the informational, social, and especially the cognitive domains as well. Obviously, the U.S. military must dominate the conventional and unconventional threat spectrum when called to do so. To achieve the required level of readiness, no strategic-level structural void can remain untended; otherwise, exposed vulnerabilities may be exploited by an intelligent and determined adversary or combination of adversaries.

The United States must seize the opportunities now available to shape the evolving strategic landscape, not simply cope with it and react to it. Ultimately, this shaping effort begins at and depends on our strategic level. Yes, our tactical and operational capabilities must be rapidly deployable, immediately employable, highly mobile and lethal, durable, and sustainable. But it is at the wisely structured strategic level that our global military strategy is envisioned, developed, resourced, and set into motion. We must never underestimate the importance of an effective strategic-level military structure that is well organized, resourced, networked, well informed, highly adaptive, and as "close to perfect" as it can be, all the time. Nothing less is acceptable. **ALOG**

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ALOG NEWS

TASK FORCE LOGISTICS REVAMPS ARMY SUSTAINMENT SYSTEM

The joint-capable theater sustainment command (TSC) under development by Task Force (TF) Logistics promises to help the Army be more effective and efficient in its support of land component operations. The organizational structure of the new TSC eliminates layering of commands by combining operational-level functions of the current corps support command and theater support command, thereby eliminating redundancy and maximizing flexibility.

The Army has created 17 focus areas to ensure that it remains the best force in the world. TF Logistics, a focus area approved in January by Army Chief of Staff General Peter J. Schoomaker, includes logisticians and support personnel from all branches of the armed services. One of the task force's areas of concentration is the TSC design.

The goal of the TSC is to deploy equipment much more rapidly, and the way to do that is through visibility to the soldier and the command, said Major Chris Stolz, TF Logistics operations officer. The command will be able to know where the soldier is and what he needs, and the soldier will know when he will be receiving the supplies he needs.

The TSC will be a modular organization with a standard headquarters and subordinate support units tailored for the mission requirements of specific operations. Modular subordinate units will provide capabilities for theater opening; theater distribution; medical; bulk petroleum; aviation; civil engineering; and multifunctional supply, maintenance, and transportation support.

The TSC will work under the new unit of employment operational headquarters (known as the UEy), with the TSC commander serving as the senior Army logistics commander in the UEy. The TSC headquarters will provide command and control of assigned, attached, and operationally controlled units.

Sustainment brigades will provide support to operational-level units in the UEy's area of operations and sustainment support to tactical-level forces engaged in combat in forward areas. This will allow throughput of critical sustainment, such as fuel and ammunition, from the theater logistics hubs to brigade combat teams engaged in combat.

Currently, corps support commands and theater support commands must funnel supplies and equipment through different layers of management before getting it forward to the battle area. With the new concepts and emerging technology, trucks will be able to transport cargo directly from the ports to the requiring brigade combat teams.

Stolz said that the current "stovepiped systems" do not talk to each other. "The emerging systems have integrated communications," he said. "This means that the logistics information system will receive all requirements, and the computer network will show that. In the past, units could only see what affected their specific segment. With integrated communications, it will be possible to look down the entire pipeline and speed the process by prioritization and reallocation."

Predictive technology, which is still in the conceptual phase, eventually will be able to show where brigade combat teams will be and what they will need, said Stolz. This will enable delivery of supplies even sooner. According to Stolz, the prediction will take into account the operational environment of the units and anticipate their needs.

"The big difference is in the way the logistics systems will operate. The soldier is going to see that he or she is not going to have to ask for the same thing two or three times. We are going to have Amazon.com type of visibility," Stolz said, explaining that soldiers will know the status of their orders and have confidence in when they will arrive.

The Army Combined Arms Support Command (CASCOM), at Fort Lee, Virginia, plays a major part in the task of supplying the troops. Colonel John Wharton, in CASCOM's Directorate of Combat Developments-Combat Service Support and Deputy of TF Logistics, said that the task force is collaborating with CASCOM to develop new standard requirement codes (SRCs) that are associated with tables of organization and equipment. He said that SRC teams, some as small as one or two soldiers, will be able to provide support based on their specific capabilities. Currently, a whole unit must be mobilized to provide support for a job that could be done by a few.

TF Logistics is working with the Army staff, the Army Materiel Command, and the Army theater support commands to develop the required capabilities based on tasks, functions, and missions. It is also collaborating with the Joint Forces Command and several regional combatant commands.

TF Logistics hopes to have 80 percent of the TSC design in place by the end of fiscal year 2004, Wharton said.

Military equipment is staged at Pier 8 in Pusan, Korea, awaiting movement to Southwest Asia.

ARMY MOVES EQUIPMENT AND TROOPS FROM KOREA TO IRAQ

Approximately 3,600 troops from the 2d Infantry Division's 2d Brigade in Korea have been deployed to Iraq to provide support to Operation Iraqi Freedom. The move represented the first time in the 50 years of U.S. military presence in Korea that troops stationed there were moved to another operational area. The soldiers will return to the United States following their tour in Iraq.

In preparation for the move, transporters of the Military Surface Deployment and Distribution Command's 837th Transportation Battalion in Pusan, Korea, loaded 1,700 pieces of brigade equipment onto two Military Sealift Command (MSC) vessels, the *MV Cape Horn* and *MV Cape Hudson*. They were supported by soldiers of the 20th Area Support Group and the 1-38th Field Artillery Battalion. As part of the deployment, 80 containers of ammunition were loaded onboard a third MSC vessel, the *SS Cape Inscription,* at the Chinhae Ammunition Pier. Korean Navy sailors assisted with that operation.

LIFE CYCLE MANAGEMENT INITIATIVE WILL INTEGRATE AMC MSCs AND ALT PEOs

A memorandum of agreement (MOA) between the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ALT) and the Commanding General, Army Materiel Command (AMC), seeks to improve future soldier sustainment and readiness by establishing a closer relationship between AMC's major subordinate commands (MSCs) and the program executive officers (PEOs) in the Army ALT community.

The 2 August MOA formalizes an initiative that will establish Life Cycle Management Commands (LCMCs) by aligning AMC's Aviation and Missile Command, Communications-Electronics Command, Joint Munitions Command, and Tank-automotive and Armaments Command with the PEOs with whom they now work. The initiative will result in better products being delivered to the soldier more quickly and at less cost and optimize the interaction and effectiveness among the ALT communities.

The new alignments will be the Aviation/Missile LCMC, the Soldier/Ground Systems LCMC, the Communications/Electronics LCMC, and the Joint Ammunition LCMC. The PEOs will align closely with the MSCs but will continue to report to the Army Acquisition Executive, who is the Assistant Secretary of the Army for ALT. AMC logisticians in the LCMCs will be able to provide more input into the acquisition processes that affect sustainment and readiness. They will continue to report to the AMC Commander.

The PEOs will retain responsibility for establishing program objectives and will be the single points of accountability within their respective LCMCs for accomplishing program objectives. They will work closely with LCMC elements to design and execute effective sustainment strategies. The LCMC commanders will be the focal points and primary responsible agents for actions across the entire life cycles of the systems assigned to their LCMCs. Both the PEOs and the LCMC commanders will maintain operational relationships with the AMC Research, Development, and Engineering Command (RDECOM) concerning the technology and engineering aspects of their respective systems.

An integrated process team made up of representatives of the MSCs, the PEOs, and RDECOM is charged with developing implementation plans for each LCMC. The plans, which are to be completed by 2 February 2005, will outline relationships, processes, and reporting chains for the new organizations.

DLA FORWARD STOCK INITIATIVE EXPANDS

The Defense Logistics Agency (DLA) opened its fifth forward stock depot in Kuwait this fall with 7,000 stocked items. By the end of 2005, the depot will have an additional 40,000 items. The depot was established in Kuwait to give DLA a larger presence in Southwest Asia in order to minimize costs as the United States and its coalition partners execute Operation Iraqi Freedom II.

DLA established its forward stocking initiative (FSI) in the mid- to late-1990s to minimize transportation costs. Under the FSI, DLA forward-stocks materiel ordered by customers four or more times a year for 2 consecutive years. This allows DLA to deliver the needed items quickly without having to resort to more expensive air transport.

The other forward stock depots are in Pearl Harbor, Hawaii; Germersheim, Germany; Sigonella, Italy; and Yokosuka, Japan. DLA plans to establish additional depots in Guam and Korea.

AMC AND DLA PARTNER TO TEST WAL-MART RESUPPLY PROCEDURES

The Army Materiel Command (AMC) and the Defense Logistics Agency (DLA) have formed a partnership that seeks to improve their resupply operations by following the vendor system used by retail giant Wal-Mart.

Under a collaborative approach known as "co-managed inventory," Wal-Mart shares inventory and sales information with its vendors and allows some of them to recommend resupply strategies to the retail chain. A Wal-Mart proprietary system called "Retail Link" permits vendors to access information on Wal-Mart sales and inventory of the items they supply.

In April, DLA and AMC started a 6-month pilot program called "Vendor Initiated Parts Resupply" (VIPR) that is based on the Wal-Mart system. The goal of the pilot is to determine if sharing consumption information at several inventory points will increase supply readiness, improve in-transit visibility, cut costs, and improve parts resupply to field locations.

Vendors taking part in VIPR will have visibility of consumption and inventory data on their items at specific sites, including 8th U.S. Army tactical supply support activities in Korea and an AMC maintenance depot, Red River Army Depot in Texas, and in wholesale inventories managed by DLA and AMC. Based on this information, vendors will make recommendations on resupply quantities needed to maintain inventory levels. Vendors will be responsible for shipping approved resupply quantities to the appropriate inventory locations. AMC and DLA representatives will meet regularly with the vendors to discuss problems and find ways to improve the VIPR process.

For the pilot, DLA selected Oshkosh Truck Corporation and AM General to provide land-component items such as vehicular component boots, shock absorbers, oil pans, and engine crankshafts. AMC selected Goodyear Tire and Rubber Company, Michelin, and Barnes PSP, Inc., as additional vendors. The U.S. Transportation Command will provide visibility of shipments through the Global Transportation Network.

Information sharing under the pilot program began on 1 April, and the vendors became responsible for making resupply recommendations on 19 April. The AMC and DLA commanders, General Paul J. Kern and Vice Admiral Keith W. Lippert, were scheduled to evaluate VIPR's success in October. A successful pilot could lead to incorporating elements of VIPR into DLA's and AMC's operating procedures.

ARMY PRESENTS DEPLOYMENT AWARDS

The Army's Deputy Chief of Staff, G–4, Lieutenant General C.V. Christianson, presented the 2004 Army Deployment Excellence Awards in a ceremony on 22 June. The awards, established by the Chief of Staff of the Army in 2000, are open to any unit or installation that has deployed or supported a training or contingency deployment during the competition year, which runs from 1 December to 30 November.

Units and installations can participate in one of five categories: Operational Deployment; Large Unit (battalion and above); Small Unit (company and below); Supporting Unit; and Installation. The Operational Deployment category, which was added in 2003, is for units that deploy to support operational missions.

The winners of the 2004 Deployment Excellence Awards are—

Operational Deployment Large Unit. 2d Battalion, 227th Aviation Regiment, 1st Cavalry Division, Fort Hood, Texas.

Operational Deployment Small Unit. C Company, 121st Signal Battalion, 1st Infantry Division (Mechanized), Kitzingen, Germany; and B Company, 65th Engineer Battalion, 25th Infantry Division (Light), Schofield Barracks, Hawaii.

Active Large Unit. 53d Movement Control Battalion (Echelons Above Corps), Fort McPherson, Georgia.

Active Small Unit. Headquarters and Headquarters Company, 7th Transportation Group, Fort Eustis, Virginia.

Active Supporting Unit. 842d Transportation Battalion, Beaumont, Texas.

Army Installation. Fort Stewart, Georgia.

Army National Guard Large Unit. 2d Battalion, 116th Infantry Regiment, Lynchburg, Virginia.

Army National Guard Small Unit. 82d Rear Operations Center, 82d Infantry Brigade, Lake Oswego, Oregon.

Army National Guard Supporting Unit. 1067th Transportation Company, Phoenixville, Pennsylvania.

Army Reserve Large Unit. 1192d Transportation Terminal Brigade, New Orleans, Louisiana.

Army Reserve Small Unit. Headquarters and Headquarters Company, Army Civil Affairs and Psychological Operations Command, Fort Bragg, North Carolina.

Army Reserve Supporting Unit. 2125th Garrison Support Unit, 82d Airborne Division, Fort Bragg, North Carolina.

More information, including the awards evaluation criteria, checklists, and sample nomination packets, is available at the Deployment Process Modernization Office Web site at www.deploy.eustis.army.mil/DEA.

ARMY PRESENTS MAINTENANCE AWARDS

The winners of the 2003 Army Awards for Maintenance Excellence are as follows—

Active Army (Table of Organization and Equipment) (TOE)

Small Unit. 11th Signal Detachment, 2d Signal Brigade, Mannheim, Germany.

Medium Unit. 3d Military Intelligence Battalion, Camp Humphreys, Korea.

Large Unit. 532d Military Intelligence Battalion, Yongsan, Korea.

Active Army (Table of Distribution and Allowances)

Small Unit. Operations Group, Aviation Flight Detachment, Combat Maneuver Training Center, Hohenfels, Germany.

Medium Unit. 58th Transportation Battalion, Fort Leonard Wood, Missouri.

Large Unit. Maintenance Activity Kaiserslautern, Germany.

Army National Guard (TOE)

Small Unit. Headquarters and Headquarters Detachment, 690th Maintenance Battalion, Kinston, North Carolina.

Medium Unit. 732d Maintenance Company, Roxboro, North Carolina.

Large. 2d Battalion, 156th Infantry Regiment, Abbeville, Louisiana.

Army Reserve (TOE)

Small Unit. 912th Medical Company, Independence, Missouri.

Medium Unit. Headquarters and Headquarters Company, 807th Medical Command, Seagoville, Texas.

Large Unit. 94th General Hospital, Seagoville, Texas.

The awards were presented by Lieutenant General C.V. Christianson, Army Deputy Chief of Staff, G–4; Brigadier General William M. Lenaers, the Commandant of the Army Ordnance Center and School; and Chief Warrant Officer

(W–5) James J. Wynne, the Regimental Chief Warrant Officer of the Ordnance Corps, in an August ceremony at the Pentagon.

SUPPLY AWARD WINNERS ANNOUNCED

Army Chief of Staff General Peter J. Schoomaker announced the following first-place winners of the 2004 Army Supply Excellence Award on 1 September—

Active Army

Table of Distribution and Allowances (TDA) Unit (Small). 222d Base Support Battalion, Baumholder, Germany.

TDA Unit (Large). 2d Battalion (Short-Range Air Defense) 6th Air Defense Artillery Brigade, Fort Bliss, Texas.

TDA Supply Support Activity (SSA) (Small). Headquarters and Headquarters Company, 22d Area Support Group, Vicenza, Italy.

Modification Table of Organization and Equipment (MTOE) Company With Property Book. Headquarters and Headquarters Detachment, 59th Signal Battalion, Fort Richardson, Alaska.

MTOE Company Without Property Book. 11th Signal Detachment, Mannheim, Germany.

MTOE Battalion With Property Book. 205th Military Intelligence Battalion, Fort Shafter, Hawaii.

MTOE SSA (Small-Classes II, IV, and VII). 305th Quartermaster Supply and Service Company, Yongsan, Korea.

MTOE SSA (Small-Class IX). G Company, 52d Aviation Regiment, Wonju, Korea.

MTOE SSA (Large-Class IX). D Company, 701st Main Support Battalion, 1st Infantry Division (Mechanized), Kitzingen, Germany.

Army National Guard

TDA Unit (Small). Headquarters, 209th Regional Training Institute, Ashland, Nebraska.

TDA Unit (Large). Joint Forces Headquarters, Wisconsin Army National Guard, Madison, Wisconsin.

TDA SSA (Small). U.S. Property and Fiscal Office, Supply Center, Lincoln, Nebraska.

MTOE Company With Property Book. 107th Maintenance Company, Sparta, Wisconsin.

MTOE Company Without Property Book. Headquarters and Headquarters Company, 1/114th Infantry Battalion, Fort Dix, New Jersey.

MTOE Battalion With Property Book. Headquarters, 1/25th Field Artillery Battalion, New Ulm, Minnesota.

MTOE Battalion Without Property Book. Headquarters, 2/127th Infantry Battalion, Appleton, Wisconsin.

MTOE SSA (Small-Class IX). B Company, 193d Aviation Regiment, Wheeler Army Airfield, Hawaii.

MTOE SSA (Large-Class IX). U.S. Property and Fiscal Office, Supply and Services Warehouse, Springfield, Illinois.

Army Reserve

TDA Unit (Small). 4249th Port Security Detachment (Military Police), Pocahontas, Iowa.

TDA Unit (Large). Area Maintenance Support Activity 57 (Ground), Belton, Missouri.

MTOE Company Without Property Book. 216th Transportation Detachment, Fort Bragg, North Carolina.

MTOE Battalion Without Property Book. 317th Quartermaster Battalion (Supply and Services), Lawrence, Kansas.

PENN STATE OFFERS CERTIFICATE IN SUPPLY CHAIN MANAGEMENT

Pennsylvania State University's Center for Supply Chain Research, in cooperation with the Army Logistics Transformation Agency, now offers a certificate program in Supply Chain Management for Army logisticians. To receive the certificate, logisticians must attend Penn State's new course, "Logistics Transformation Management: Developing and Accelerating Logistics Change," and two other supply chain courses offered by the university. For more information about the certificate program, send an email to William.Koenig@hqda.army.mil. Information on course offerings is available on the Penn State Smeal College of Business Web site, www.smeal.psu.edu/psep.

DEFENSE LOG CONFERENCE SCHEDULED

The Third Annual Defense Logistics Conference, Defense Logistics 2004, is scheduled for 29 November to 1 December at the Omni Shoreham Hotel in Washington, D.C. The purpose of the conference is to bring military and industry logistics leaders together to promote interoperability and develop tools for supporting the warfighter.

Conference information and registration is available on the World Wide Web at www.defenselog.com.

SmarTruck III represents cutting-edge military automotive technology.

SMARTRUCK III OFFERS MULTIPLE TECHNOLOGICAL ADVANTAGES

The Army's new SmarTruck III can detect an airborne biological hazard and alert authorities before it can cause harm, track and repel attackers in complete darkness, and sense an incoming missile and knock it out of the sky. Its armor, four-point safety belts, run-flat tires, and fire-suppression systems enhance crew protection.

SmarTruck III was built by Integrated Concepts and Research Corporation of Madison Heights, Michigan, and Heart International of Grand Blanc, Michigan, in partnership with International Truck and Engine Corporation, for the National Automotive Center (NAC). NAC is the Army Tank and Automotive Research, Development, and Engineering Center's technology transfer arm.

The vehicle can be used in a war zone, for homeland security, or for other security purposes, such as border patrol. Its weapons station module has a remote-controlled .50-caliber machinegun that rises from the back of the vehicle and sniper-detection directional sound capabilities. Antimissile missiles deployed from behind SmarTruck III's side flares offer perimeter defense from rocket-propelled grenades and antitank guided missiles.

SmarTruck III is outfitted with ballistic protection that can withstand 51-millimeter machinegun rounds. It can be equipped with armor flooring that will dissipate the energy of a ground explosion away from the vehicle. The vehicle's automatic fire-suppression system can sense an explosion or fire in the crew compartment and suppress it within milliseconds. Its diagnostics system will help the crew identify and solve vehicle maintenance problems.

The vehicle has two sophisticated camera systems: The periscope camera comprises a night-vision camera, visible light camera, and laser range finder. The telemmersion camera system can be raised 8 feet above the truck to record the 360-degree, full-motion spherical scene at 100 million pixels per second. The system includes directional sound monitoring and can record for up to 4 hours.

SmarTruck III's bio-agent acquisition system can analyze samples and distinguish bio-aerosols from dust and other nonbiological materials. The vehicle's communication technologies create an integrated, standalone command and control center. Its occupants can control unmanned aerial vehicles, and each of its rear seat passengers will be able to monitor SmarTruck III's many technologies and two 7-inch LCD (liquid crystal display) screens to view selected camera feeds. SmarTruck III also has high-speed satellite Internet access and satellite TV.

According to NAC's Bruce MacDonald, SmarTruck III is at the "top end of innovation coming out of NAC." The Army has not set a date for fielding SmarTruck III.

TRANSCOM REALIGNS TO PERFORM AS DISTRIBUTION PROCESS OWNER

The U.S. Transportation Command (TRANSCOM) has announced a management structure designed to enhance its effectiveness in its role as the Department of Defense's (DOD's) Distribution Process Owner (DPO). The realignment will create a flatter structure with fewer layers of management, consolidate management accountability, and streamline the flow of information to senior-level decisionmakers.

The designation of the DPO last September established one accountable commander for DOD distribution. The realignment creates a complementary structure with subordinate levels of accountability to support the DPO.

Under the realignment, General John W. Handy, USAF, the TRANSCOM Commander, now chairs a DPO Executive Board that also includes the Deputy Under Secretary of Defense for Logistics and Materiel Readiness, the Director of the Defense Logistics Agency (DLA), and the J–4, Joint Staff. The Executive Board will oversee the improvement of the distribution process through six focus areas, or "pillars," each headed by a general officer (GO) or senior executive service (SES) civilian. The pillar leaders will report monthly to the board. The six pillars are—

- Execution (the responsibility of the TRANSCOM J–3), which focuses on the Deployment and Distribution Operation Center and containers.
- End-to-end process (the responsibility of the TRANSCOM J–5), which focuses on end-to-end architecture, asset visibility, metrics, and the deployment and distribution process.
- Information technology (the responsibility of the TRANSCOM J–6).
- Financial (the responsibility of the TRANSCOM J–8).
- Human realm (the responsibility of the TRANSCOM Chief of Staff).
- Integrated distribution (the responsibility of the DLA J–3), which focuses on supply and transportation, direct vendor delivery, and the Defense Transportation Coordination Initiative.

According to Major General Carlos D. "Butch" Pair, USAR, the TRANSCOM Chief of Staff, "The DPO's aim is to improve overall efficiency and interoperability of distribution related activities—deployment, sustainment, and redeployment support during peace and war. This realignment adds GO/SES-level accountability and velocity to these hugely important efforts so that our Government can start reaping the potential dollar savings at hand."

TRANSCOM also has received DOD approval to establish a contracting activity for commercial transportation services. TRANSCOM was authorized to procure commercial transportation when it was established in 1993. However, to do so, TRANSCOM first needed a delegation of authority from the Office of the Secretary of Defense. TRANSCOM did not seek such a delegation at that time and instead executed the acquisition mission through its components, the Air Mobility Command, the Military Sealift Command, and the Military Surface Deployment and Distribution Command. Following its designation as the DPO, TRANSCOM determined that it needed the authority to establish its own acquisition capability that could be dedicated to DPO requirements and requested the delegation of authority. TRANSCOM hopes to have the contracting activity operational by March 2005.

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