

The Publication of Record for the Military Logistics Community

# Military Logistics Forum

ORGANIZATIONAL PROFILE  
SPECIAL PULL-OUT SUPPLEMENT

TACOM  
LEMC  
2011

Process  
Improver  
Rear Adm.  
Mark F.  
Heinrich

Supply Corps,  
United States Navy  
Commander  
Fleet and  
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Centers

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Interview with:  
**BRIAN BUTLER**

Executive Director, Integrated  
Logistics Support Center TACOM,  
Life Cycle Management Command



MRAP Sustainment \* High Velocity Maintenance \* Educating Future Logisticians  
Unmanned Resupply \* Logistics in the Counterinsurgency Fight



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## FEATURES



### MRAPs to Afghanistan

MRAPs have become the workhorse of deployed forces in Afghanistan and Iraq. What is it taking to keep them operationally ready with such a demanding OPTEMPO?

By Christopher Prawdzik



### Immediate Action Required

Red River Army Depot describes how they have met the challenge of repairing and maintaining MRAPs. The formula they have used could be a model for future sustainment efforts.

By Belinda Lee



### Faster Maintenance through HVM

The U.S. Air Force continues its shift toward a new model of maintenance. Called high-velocity maintenance, the new approach is modeled on the best-practice commercial aircraft maintenance that minimizes downtime and maximizes availability.

By Henry Canaday



### Counterinsurgency – A Logistician's View

The authors, one from industry and one from OSD, look at the role and contributions logistics can have in a counterinsurgency operation—regardless of size.

By Gerry Brown and Darryl Scott



### Knowledge is Power

Educating logisticians “to facilitate and encourage students from other functional disciplines to better understand logistics processes, practices and principles, as well as to encourage life cycle logisticians to broaden their understanding of other disciplines in the acquisition community.”

By Maura McCarthy



### Unmanned Haulers

Using unmanned systems to reduce the risk of resupply has been a dream and goal for quite some time. Technological advances are bringing this idea closer to reality as precision guidance and navigation systems can operate larger platforms more suited for supply.

By Peter Buxbaum

## COVER / Q&A



### Rear Adm. Mark F. Heinrich

Supply Corps, United States Navy  
Commander, Fleet and Industrial Supply  
Centers

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TACOM LIFE CYCLE MANAGEMENT COMMAND  
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Featuring an exclusive interview with

**Brian Butler**

Executive Director

Integrated Logistics Support Center

TACOM Life Cycle Management Command

6 FY10 Top 20 Prime Contracts

## INDUSTRY INTERVIEW



Larry J. Lanzillotta

Vice President for Army and Marine Corps  
Ground Vehicle Reconstitution Programs  
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# EDITOR'S PERSPECTIVE

There were a number of takeaways from the recent NDIA National Logistics Conference, but one of the goodies was also an oldie: Build life cycle costs into program costs from the very beginning! Everyone seems to acknowledge that only about 30 percent of the cost of a program is in the actual upfront acquisition cost. The remaining 70 percent comes in the sustainment of the system over its lifespan. Everyone was in agreement as they pondered how to do that.

The senior logisticians—the ones responsible for that sustainment—all knew it, but how to communicate it to the acquisition side of the house (and the finance side) was at issue. Truth be told, I believe most decision-makers know the value of life cycle being integrated from day one, but find paying for new systems is expensive, and robbing Peter to pay Paul has been the backstory on more than one program.

Hopefully, as we head into the cycle of lowering defense spending the advantages and savings from looking at the program from tip to tail will be the driving force to connect all of the acquisition and life cycle dots and get it done.

On the last day of the conference, Vice Admiral John Currier, U.S. Coast Guard chief of staff, gave the luncheon keynote. Among many great points he made were his comments on the response to natural or man-made disasters in that after the initial first response—life saving and critical care—everything else in the response can really be classified as logistics. Separately he made some remarks about the efficiencies of Wal-Mart in managing its supply chain, followed by the usual disclaimers that no one is ambushing Wal-Mart trucks, etc. But the admiral made the comment that Wal-Mart has more aircraft than the U.S. Coast Guard. And that, *Military Logistics Forum* readers, is a disgrace! Good for Wal-Mart, but sad that more and more tasks are pushed onto the Coast Guard with Congress allocating a budget that is woefully anemic.

As you may know—from reading the *Military Logistics Forum* if nowhere else—2011 is DLA's 50th Anniversary and we are a planning a great commemorative issue with a Q&A interview with Vice Admiral Thompson, timed for distribution at the DLA Enterprise Supplier Conference. Hope you will also join us in this issue and at the conference in Columbus, Ohio, in June.

As always, please feel free to contact me with any questions or comments about *Military Logistics Forum*.



**Jeffrey D. McKaughan**  
EDITOR-IN-CHIEF

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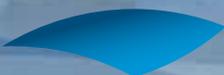
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## Defense Transportation Coordination Initiative

Menlo Worldwide Logistics, the global logistics subsidiary of Con-way Inc., announced that the U.S. Army's Military Surface Deployment and Distribution Command awarded two contract modifications to Menlo Worldwide Government Services LLC. The actions renew Menlo as prime contractor for the U.S. Defense Transportation Coordination Initiative (DTCI) and further expand the scope of its contract by adding 19 additional Department of Defense shipper sites to the DTCI program.

Menlo was selected as prime contractor in August 2007 for a base three-year period with four one-year renewal options. Menlo was awarded the first renewal year and the expanded scope based on its performance over the initial three-year contract, during which Menlo and its subcontractors introduced sophisticated logistics practices and technologies that significantly reduced costs, improved process efficiency and increased on-time delivery of supplies for the nation's military services.

DTCI is a strategic logistics program directed by the U.S. Army's Military Surface Deployment and Distribution Command. Menlo Worldwide Government Services LLC is prime contractor

with Computer Sciences Corp., ONE Networks Enterprises Inc. and Olgoonik Logistics as principal subcontractors.

During the base period, Menlo designed and implemented a program that synchronized transportation operations from some 96 independent DoD shipping sites in the United States and utilized hundreds of transportation service providers. In addition to dedicated load planning, route management and customer service teams, Menlo created specific strike teams to identify tactical improvement opportunities, then devised and implemented solutions to further improve operational efficiency and effectiveness. During the base contract period, the company exceeded key performance indicators and cost avoidance goals, with DTCI to-date realizing approximately \$158 million in gross cost avoidance.

"It's an honor to be able to bring our expertise to bear in ways that enable our nation's warfighters to be better prepared with the right supplies on time at the right time to accomplish their missions," said Robert L. Bianco Jr., president, Menlo Worldwide Logistics and a former U.S. Army officer.

## Missile Health Monitoring Program

The NATO Seasparrow Project Office (NSPO) has selected Odin as their RFID partner in a new initiative to reduce costs of maintaining the Sea Sparrow missiles. The program, Health Monitoring of the ESSM (Evolved Sea Sparrow Missile), aims to capture temperature, humidity, shock and vibration data from RFID systems. The goal of NSPO is to "provide an optimal project management organization and a forum for international cooperation to effectively support the needs of participating governments and client nations in acquiring, sustaining, and maintaining defense of their forces using Sea Sparrow missile variants, associated systems, and evolutions of the missile and system capabilities against today's and tomorrow's threats."

"Odin is very proud to deploy our RFID software and engineering expertise to the largest and most successful cooperative weapons project in the North Atlantic Treaty

Organization," said Odin founder Patrick J. Sweeney II. "With 12 participating governments over the past 41 years in NSPO, the program's success has been unparalleled. Now they are moving into the next generation of support technology for the warfighter—RFID. This is a landmark use of RFID.

"Odin's experience tracking all manner of items from nuclear weapons to heart catheters is what will make this successful," he continued.

"Odin has earned a reputation for its first-rate tracking services and I congratulate them on their new partnership with NATO," said Representative Jim Moran, D-Va. "Odin is a good example of a Virginia company delivering smart solutions for global demands. This RFID program will provide a high-quality accounting system that could save taxpayer dollars in maintenance costs on tactical missiles."

## USNS *Lewis and Clark*



Detyens Shipyards Inc., North Charleston, S.C., has been awarded a \$7,325,687 firm fixed-price contract for a 55-calendar-day

regular overhaul of Military Sealift Command dry cargo/ammunition ship USNS *Lewis and Clark*. This regular overhaul will include dry-docking and undocking the ship; underwater hull painting; main engine overhaul; propeller shaft inspection; cleaning and gas freeing tanks, voids and cofferdams; tank structural surveying and testing; and non-skid renewal. The ship's primary mission is to deliver ammunition, provisions, stores, spare parts, potable water and petroleum to the Navy's carrier strike groups and other naval forces at sea.

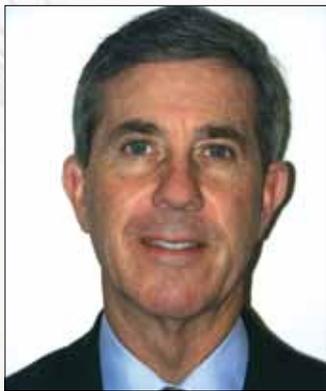
## Commercial Air Refueling

Omega Aerial Refueling Services Inc., Alexandria, Va., has been awarded a \$31,456,560 modification to a previously awarded indefinite delivery/indefinite quantity contract to exercise an option for contractor owned and operated aircraft in support of the Commercial Air Services (CAS) program.

The CAS program provides aerial refueling services for Navy, other Department of Defense and government agencies, and foreign military sales aircraft. Work will be performed at various locations in the continental United States (45 percent East Coast and 35 percent West Coast), and at various locations outside the continental United States (20 percent). Work is expected to be completed in March 2012.

## Alan Esetvez

In our Q&A interview with Alan Estevez, Principal Deputy Assistant Secretary of Defense for Logistics and Materiel Readiness, in the last issue of *Military Logistics Forum*, the amount of savings in one passage was incorrectly reported. The quote should have read, "For example, we had a medical supply chain that was slightly outside the normal logistics supply chain. We looked at some of our capabilities to leverage that and found \$250 million in savings."



Al Banghart

*Al Banghart is a senior advisor with Deloitte Consulting LLP and former director of enterprise transformation at the Defense Logistics Agency.*

## Realizing Enduring Change: *The Leadership Challenge*

While a Navy Captain in the mid-'90s, I had the distinct honor of serving as senior military adviser to the deputy undersecretary of defense for logistics, retired Air Force Major General John Phillips. By ensuring my direct and deep involvement in essentially every facet of his position, the secretary provided me the opportunity to gain significant insight into the workings of defense logistics from the very top.

Despite having 23 years of DoD logistics service behind me, it was here on the OSD staff that I experienced an epiphany regarding the truly immense challenges associated with effecting enduring positive change across the DoD logistics communities. Among the key change initiatives we championed were IT systems/information synchronization, parts requirements forecasting and “power-by-the-hour” sustainment (performance based logistics). Most readers will recognize these projects as still under construction today.

In the intervening years, my experiences in the department and on the commercial side of defense logistics have strongly reinforced my belief that delivering DoD enterprise-level transformation is often a bridge too far—often, but not always.

The cards are stacked against DoD logistics change agents. Administrations, Congress, the OSD and Joint Staffs, the military services and defense agencies have misaligned equities. Line authorities, funds flows, IT systems, processes and personnel are vertically aligned, whereas enterprise change requires horizontal synchronization. The sheer size, complexity and investment in the department's legacy logistics environments make substantive course corrections exceedingly problematic. Then there are the very real—but difficult to identify and address—cultural divides between defense activities. And finally, the relentless pressure to provide high quality, uninterrupted support to their customers leaves DoD logistics activities with limited resources and little appetite to accept the perceived risks associated with driving change in their basic business models.

Sophisticated logistics management practices and tested information technology capabilities have been available for more than a decade to successfully transform the department's logistics capabilities. Moreover, since the mid-'90s, innumerable bright, motivated and hard-working defense professionals have expended billions of dollars, completed hundreds of studies and launched even more initiatives to bridge the gaps between existing DoD practices and leading practices.

Allow me to emphatically point out that DoD logistics is not commercial business. The consequences of failure on the battlefield are not comparable to the consequences of failure in the marketplace. Logistics designed to determine platform and troop readiness cause commercial business comparisons to be less than perfect. However, functions performed by DoD logisticians to plan, source, receive, stow, issue and transport materiel and re-manufacture platforms, sub-

systems and major components have almost perfect parallels in commercial industry. The end use of DoD platforms and material is far different than commercial items, but at the business model level, the functions performed by logisticians in both spaces are common.

Logisticians familiar with both DoD and industry recognize that standard practices for commercial firms, whose business models are essentially identical to those of the department's logistics activities, have advanced dramatically over the past three decades. The department's logistics practices have not experienced improvements commensurate with their industry counterparts. As noted above, many factors conspire to keep the department's logistics communities from fully realizing the numerous positive improvements that appear to be within its reach.

Is fundamental, DoD enterprise-level logistics transformation really a bridge too far? My answer is a qualified “no.” Qualified because there are numerous synchronized decisions and sustained actions required from leaders across the department staffs, military services, agencies and well beyond that can result in the realization of substantive change—or merely improvement at the margins.

Fortunately, DoD has a number of logistics transformation successes that can inform today's leaders. I was privileged to be a member of the leadership teams that led a couple of them. While the lessons learned could fill volumes, I will use my remaining space to highlight just two of the many I consider leadership essentials:

It is many times harder than you think. If you are not committed for the long haul or not steeled for the inevitable and daunting transformation deployment problems, do not start. It will only add costs to the budget and disillusion the workforce. Almost every leader assumes they are prepared. A few are. Some are not. If you hear a leader suggesting it is time for a “strategic pause” on the long march to transformation—rather than mustering the resources and talent to tackle the challenges—the initiative is in deep trouble. “Strategic pause” is often a euphemism for “time to gracefully abandon the effort.”

There are no silver bullets—no point solutions. I cannot remember the number of times the suggested answer to a transformation challenge was the latest software application, or training regimen, or change management approach, or governance structure, or portfolio of metrics, or data analytics, or process modification, or new policy. The laundry list of point solutions is much longer, but you get the idea. None of these alone or in subsets are sufficient. All these change levers, and many more, must be effectively exercised to effect real, enduring change. It is many times harder than you think.

Having been down the DoD logistics transformation path on more than one occasion, I know it can be done successfully. I also know they were the hardest challenges I ever faced.

# PEOPLE



Gen. Thomas J. Masiello

**General Thomas J. Masiello**, deputy assistant secretary for plans, programs and operations, Bureau of Political-Military Affairs, U.S. Department of State, Washington, D.C., has been assigned to director of special programs, Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, Pentagon, Washington, D.C.

**Andrew P. Hunter** has been appointed to the Senior Executive Service and is assigned as the special assistant to the under secretary of defense (acquisition, technology, and logistics), Office of the Under Secretary of Defense (Acquisition, Technology, and Logistics), Washington, D.C. Hunter previously served as a professional staff member with the House Armed Services Committee, Washington, D.C.

**James B. Lackey** has been appointed to the Senior Executive Service

and is assigned as deputy director, air warfare, Office of the Under Secretary of Defense (Acquisition, Technology, and Logistics), Washington, D.C. Lackey previously served as supervisory program manager with the Naval Air Systems Command, Patuxent River, Md.

**Andre J. Gudger** has been appointed to the Senior Executive Service and is assigned as director, small business programs, Office of the Under Secretary of Defense (Acquisition, Technology and Logistics), Washington, D.C. Gudger previously served as chairman and chief executive officer of Solvern Innovations, Baltimore, Md.



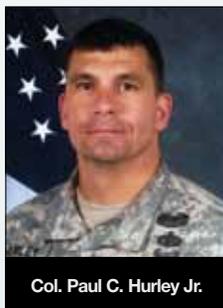
Pasquale Tamburrino

**Pasquale Tamburrino** is assigned as deputy assistant secretary of defense (civilian personnel policy), Office of the Under Secretary of Defense (Personnel and Readiness), Washington, D.C. Tamburrino previ-

ously served as assistant deputy chief of naval operations, fleet readiness and logistics, Department of Navy, Arlington, Va.

**Darlene J. Costello** is assigned as principal director, portfolio systems acquisition/director, acquisition and program management, Office of the Under Secretary of Defense (Acquisition, Technology, and Logistics), Washington, D.C. Costello previously served as deputy director, naval warfare, Office of the Under Secretary of Defense (Acquisition, Technology, and Logistics), Washington, D.C.

**Robert Marcinek** has been appointed as vice president of supply chain consulting with XIO Strategies, a member of the Cubic Corporation family of companies.



Col. Paul C. Hurley Jr.

**Colonel Paul C. Hurley Jr.**, who has been selected for the rank of brigadier general, deputy

commander/director of operations, Military Surface Deployment and Distribution Command, Scott Air Force Base, Ill., has been assigned to commanding general, 19th Sustainment Command (Expeditionary), Eighth U.S. Army, Korea.

**Keith Charles** has been reinstated to the Senior Executive Service and is assigned as director, human capital initiatives, Office of the Under Secretary of Defense (Acquisition, Technology and Logistics), Washington, D.C. Charles previously served as a consultant with the Spectrum Group, Alexandria, Va.

**James A. MacStravic** has been appointed to the Senior Executive Service and is assigned as strategic coordinator, Office of the Under Secretary of Defense (Acquisition, Technology and Logistics), Washington, D.C. MacStravic previously served as an acquisition program manager with Air Force Materiel Command, Hanscom Air Force Base, Mass.

**R. Paul Ryan** has been assigned as the special assistant for science and technology communities of interest, Office

of the Under Secretary of Defense (Acquisition, Technology and Logistics), Washington, D.C. Ryan previously served as administrator, Defense Technical Information Center, Fort Belvoir, Va.



Jeff Cushing

Pelican Products, a designer and manufacturer of advanced lighting systems and virtually indestructible cases, has appointed **Jeff Cushing** as vice president of information technology.

**Robert Marcinek** has been appointed as vice president of supply chain consulting with XIO Strategies, a member of the Cubic Corporation family of companies.

**Correction:** In the February 2011 *Military Logistics Forum* we highlighted **George Allen** but not his new position, which is president of VT Group Technical Services.



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# MRAPS to Afghanistan

By **CHRISTOPHER PRAWDZIK**  
MLF CORRESPONDENT  
PRAWDZIK@KMIMEDIAGROUP.COM

The numbers from a January 18, 2011, report from the Congressional Research Service don't beat around the bush: Up-armored HMMWVs carry a 22 percent casualty rate, and M-1 Abrams main battle tanks have a 15 percent casualty rate. Mine resistant ambush protected vehicles (MRAPs), on the other hand, have a 6 percent casualty rate.

The report, "Mine-Resistant, Ambush-Protected (MRAP) Vehicles: Background and Issues for Congress," by military ground forces specialist Andrew Feickert, discusses the evolution of the MRAP, which was actually used in limited numbers as far back as 2003 for route clearance operations in Iraq.

But as the improvised explosive device (IED) became the weapon of choice for insurgents in Iraq, the MRAP was in high demand. Tougher than the up-armored HMMWV, MRAPs origi-

nally came in three primary categories, carrying up to seven, 11 or 13 people. As operations drop precipitously in Iraq—along with the threat level—many MRAPs are making the trip over to Afghanistan and are being put to work fighting against similar threats.

As of early January, the Department of Defense said that more than 13,500 MRAPs were already at work in Afghanistan—and deaths have decreased even as attacks have increased.

"Military officials note that almost 80 percent of roadside attacks against [HMMWVs] from January 2009 through the end of July 2010 killed vehicle occupants," Feickert writes. "Attacks against MRAP vehicles during that same period resulted in 15 percent fatalities."

But with this new theater comes some changes for this troop lifesaver.

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Heading up sustainment of the vehicles is ManTech International Corporation, which recently received a \$488 million contract to sustain the MRAP family of vehicles in Southwest Asia as well as in the United States.

Kevin Cody, president and general manager of systems sustainment and integrated logistics business unit, noted that ManTech provides comprehensive responsiveness to the realities of the theater in Afghanistan.

“We’ve done technical inspections at the point of departure, technical inspections once they arrive in theater and the distribu-

tion coordination between Iraq and Afghanistan or continental United States,” he said. “In Afghanistan we’ve been heavily involved in doing the deprocessing inspections, sustainment-level maintenance, battle damage repair, and most recently ... upgrading systems as they arrive in Afghanistan to meet the new needs of the battlefield.”

These modifications include a variety of protective devices and upgrades to axles and suspension systems.

Lou Addeo, president and chief operating officer of ManTech’s Technical Services Group, noted that the company’s history with the



Although many automotive components between various MRAP platforms are similar, a mix of vehicles invariably creates separate support requirements. [Photo courtesy of DoD]



Industry was quick to meet the urgent needs of the military to a heavier, protected vehicle more suited to the combat environments of Iraq and Afghanistan. [Photo courtesy of DoD]

military goes well beyond the MRAP. In fact, ManTech’s longtime—more than 20-year—relationship with the military positions it perfectly to continue its work.

He noted “a certain intimacy and knowledge of the DoD [and] the Army experience related to the use of reset, sustainment and the logistical supply chain relevant to equipment.” This involves multiple programs. “In regional service centers throughout the world, wherever the Army [or] the DoD has been,” he added, “we have been taking in and sustaining and maintaining, in large measure, the equipment.”

This includes deployment of ManTech professionals to establish regional support centers in locations such as Bosnia and Kosovo.

This knowledge and history is crucial as the military gears up and adapts to new challenges in Afghanistan.

David K. Hansen, program manager for the joint MRAP vehicle program for the Marine Corps, noted the number of steps required to get these vehicles ready for transport into Afghanistan.

“What we do when we send a truck over is it’s packed up and ready for shipment, and it doesn’t have all of the final antenna placements—you can’t throw a vehicle with all the antennas on it on an airplane or on a ship, so the antennas are all kind of down,” he said. “You don’t put any cryptologic equipment on it while it’s in transportation, and you don’t do the final checks for jammers and Blue Force Trackers and those kinds of things.”

It’s when the vehicles arrive that they go through deprocessing, as Cody mentioned. “I’ll make [it] equivalent to final dealer preparation that they do at the car dealer when you go get your car.”

This transformation, he said, takes about five working days, and then the vehicle goes through operational checks and drivers are trained on that particular vehicle variant.

Hansen also noted the differences between Iraq and Afghanistan, particularly the insufficient infrastructure and underdeveloped—or non-existent—roadways in the latter.

“Afghanistan is relatively the size of Texas ... but if you were to look at how many miles of road are in the state of Texas, you’d probably find millions of miles of roadway,” he said. “In Afghanistan there are only about 11,000 miles of road; everything else is a path that the local community—the Afghans—are using for goat paths and carts and things like that, and we’re trying to put 50,000-pound trucks out in these kinds of environments.”

While missions generally are the same in Afghanistan as in Iraq, the vehicles are evolving in many ways. While three categories of truck for a variety of duties are common, Hansen noted that the newest addition to Afghanistan is smaller five-person trucks, called the military all-terrain vehicle (M-ATV), with four personnel in addition to one gunner. Feickert’s Congressional report notes that 8,100 of these new vehicles were designed specifically to meet the military’s needs in Afghanistan.

“The M-ATV was kind of meant to replace the Humvee in Afghanistan, because it was supposed to be more mobile, a lot lighter than most of our MRAPs,” said Hansen. “The missions have not changed—I mean they are just tactical wheeled vehicles; they’re meant to move our troops to where they can engage and do their missions, and that’s what they’ve been doing the whole time.”

One of the biggest changes, Hansen said, between MRAPs used in Iraq versus Afghanistan, however, is to the suspension systems, as noted by ManTech.

“We’re upgrading the vehicles with an independent suspension system that handles the rougher terrain better,” he said. “You could do some non-independent suspension vehicles and put them in Iraq and they did just fine, then you put them in Afghanistan, you put them in fine dust and that rocky high desert terrain and up the mountains, and they don’t work too well.”

Phil Halsey, vice president for engineering, global tactical systems for BAE Systems, agreed. BAE Systems is the maker and deliverer of more than 5,000 MRAP vehicles to the Army and Marine Corps.

BAE produces the multi-terrain Caiman, a member of the Family of Medium Tactical Vehicles. New upgrades to the 10-person, six-wheeled vehicle include all-terrain and “soft soil” capabilities as well as upgraded temperature control and an independent suspension. In addition, BAE’s RG33 comes in a 4x4 or 6x6 configuration and specializes as a command and control vehicle or can serve as an ambulance or a variety of other missions.

Suspension systems have proven crucial in Afghanistan.

“Afghanistan makes it even much worse with the rocky terrain, steeper unimproved roads, mountainous terrain,” Halsey said. “You think about the roads and the dust and the rocks, it’s much more difficult from a tire, suspension, drive train and maintenance [standpoint] that goes with those.”

While these vehicles are not very widespread in Afghanistan yet, he said the support from field service representatives embedded with units, who provide support on the spot, is not much different from Iraq.

Pat Hall, program manager for the RG33 U.S. combat systems at BAE Systems, said that as the RG33 increases its presence in Afghanistan, so do the numbers of BAE field service representatives.

“You need a corresponding increase in those to support the number of vehicles,” he said. “But it’s also, I think, to help out with the maintenance of those vehicles and to train more drivers



Iraq and Afghanistan have starkly differing landscapes necessitating some modifications to some platforms. Again, the vehicle fleets have created logistics challenges that required the military and industry to adjust to. [Photo courtesy of DoD]

on how to operate the vehicle and maintain the vehicle.”

RG33s are currently undergoing suspension system upgrades in theater.

“We are doing that twofold—one is as we build new vehicles in the states, then the [Special Operations Command] RG33 variant is built with independent suspension, whereas previously, two years ago, they weren’t,” he said. “But then those vehicles that were built without independent suspension, we have a program in theater where those vehicles retrograde from the operating force and are upgraded with independent suspension and then pushed back to the operating forces.”

Halsey said a general progression of tactical vehicles has evolved over the last several years.

“One of the things that happened in the beginning, as you know, we all tried to deploy as fast as the Army needed it,” he said. “So you look at the RG33 or the Caiman or the other competitive platforms, and everybody’s put more weight on wheeled vehicles than we had before to try to meet the survivability requirements.”

Then, once that “first round” was over, he added, they were able to determine what the enemy was doing and in-turn retool and rework different aspects of the vehicles to improve survivability.

“The latest Caiman that’s being deployed with the independent suspension and new chassis also has survivability improvements to meet what the government needs,” he said. “So now what happens again, is now you add more mass to it, so that makes it tougher on tires, tougher on suspension. Now you need more horsepower, depending on what platform you start out [with].”

He noted that the RG33 possessed good power, but Caiman had to “power up.”

“That regular upgrade in some of the more foundational components of the vehicle, like suspension power train chassis, those are bigger deals,” he said, “and we’re moving almost as fast with those now as in the original MRAP deployments.” ★

For more information, contact *MLF* Editor Jeff Mckaughan at [jeffm@kmmidiagroup.com](mailto:jeffm@kmmidiagroup.com) or search our online archives for related stories at [www.MLF-kmi.com](http://www.MLF-kmi.com).



# Immediate Action Required

**RED RIVER ARMY DEPOT HAS MET THE CHALLENGE OF  
REPAIRING AND MAINTAINING MRAPS.**

By **BELINDA LEE**

Beginning in May 2007 when the Secretary of Defense established the mine resistant ambush protected vehicle program as the highest priority of the Department of Defense acquisition program, Red River Army Depot (RRAD) met the initiative full force and today is still providing unprecedented sustainment of the entire program.

“We are open for business to repair MRAPs at RRAD,” said RRAD commander, Colonel Daniel G. Mitchell.

The initial MRAP challenge was to deploy qualified technicians to Southwest Asia (SWA) in support of the fielding requirements. RRAD expediently provided deployed personnel to perform the SWA in-country mission of de-processing MRAP vehicles for issue, sustaining MRAP vehicles in operation, and providing qualified unit embedded maintenance teams. They have never missed a fielding and have maintained an in-theater average operational readiness of 94 percent on the MRAP program. In addition, today RRAD provides personnel at the recently established MRAP Sustainment Facility in Kuwait, to support MRAP FMC-plus work (fully mission capable).

The deployment initiative brought about the necessity to train military and civilian personnel to operate and maintain the MRAPs in the field. With RRAD as the host installation, the Joint Services MRAP University was established.

When the American military forces recognized the need to provide extensive accident preparedness training for users of the MRAP, RRAD fabricated the MET-MRAP egress trainer. The MET is a training system designed to support rollover egress training and provide vehicle crewmembers the confidence necessary to safely egress the vehicle in

the event of a rollover.

As the SWA mission has evolved, RRAD’s commitment to the sustainment of the MRAP has expanded. RRAD has been designated as the depot source of repair for the MRAP family of vehicles for all services and variants except those manufactured by Force Protection Industries. In October 2009, planning began for the stateside return of MRAPs and a pilot program was designed to establish sustainment capability. RRAD successfully completed the pilot project in January 2011. As a result, 306 MRAPs have been designated for repair/upgrade programs at RRAD. The Air Force will also be sending part of their MaxxPro variant MRAPs to RRAD for reset. The Army MRAP program manager intends to increase these programs as MRAPs retrograde from Southwest Asia.

## **WAIT—STOP—IMMEDIATE ACTION REQUIRED**

A critical need situation arose and RRAD was called upon to repair 16 MRAP MaxxPro ambulances in support of pre-deployment training exercises for soldiers assigned to Fort Bliss, Texas. Because of the urgency, the vehicles were airlifted from Kuwait to RRAD in November. The scope of work required technical inspection, ordering materiel and coordinating with appropriate organizations to determine functionality of various specialty components on the vehicles. Because of the complexity of equipment involved, coordination and strict timelines were necessary to guarantee completion of the mission in a timely fashion. Mission Complete: Fort Bliss, 3/1 AD Unit is now conducting pre-deployment training in preparation for its upcoming Afghanistan mission.

“Our dedicated people accepted the task and successfully completed the mission. Not even late arrival and short turn-around time stood in the way of a successful February delivery to the unit,” said Mitchell.

## **TODAY**

RRAD is continuing to develop shop processes, special tooling, training modules and facility configurations in anticipation of the 306 MRAPs designated for repair at RRAD. This program could be initiated within the next few weeks and once again RRAD will be prepared.

## **ON THE HORIZON**

Today’s MRAP discussion focuses on repairing a portion OCONUS and returning a portion to the states for repair/upgrade. As the depot source of repair for the MRAP, RRAD is aggressively taking steps to posture the depot to support the MRAP depot program. Working with the MRAP Joint Project Office, TACOM item managers and industry, RRAD understands the objective and with our “can do” attitude and business approach we are confident that we will meet or exceed all customer expectations.

As Colonel Mitchell stated, “RRAD is open for MRAP business overseas and at home.” ★

*Belinda Lee is the public affairs officer for Red River Army Depot.*

For more information, contact MLF Editor Jeff McKaughan at [jeffm@kmmidiagroup.com](mailto:jeffm@kmmidiagroup.com) or search our online archives for related stories at [www.MLF-kmi.com](http://www.MLF-kmi.com).

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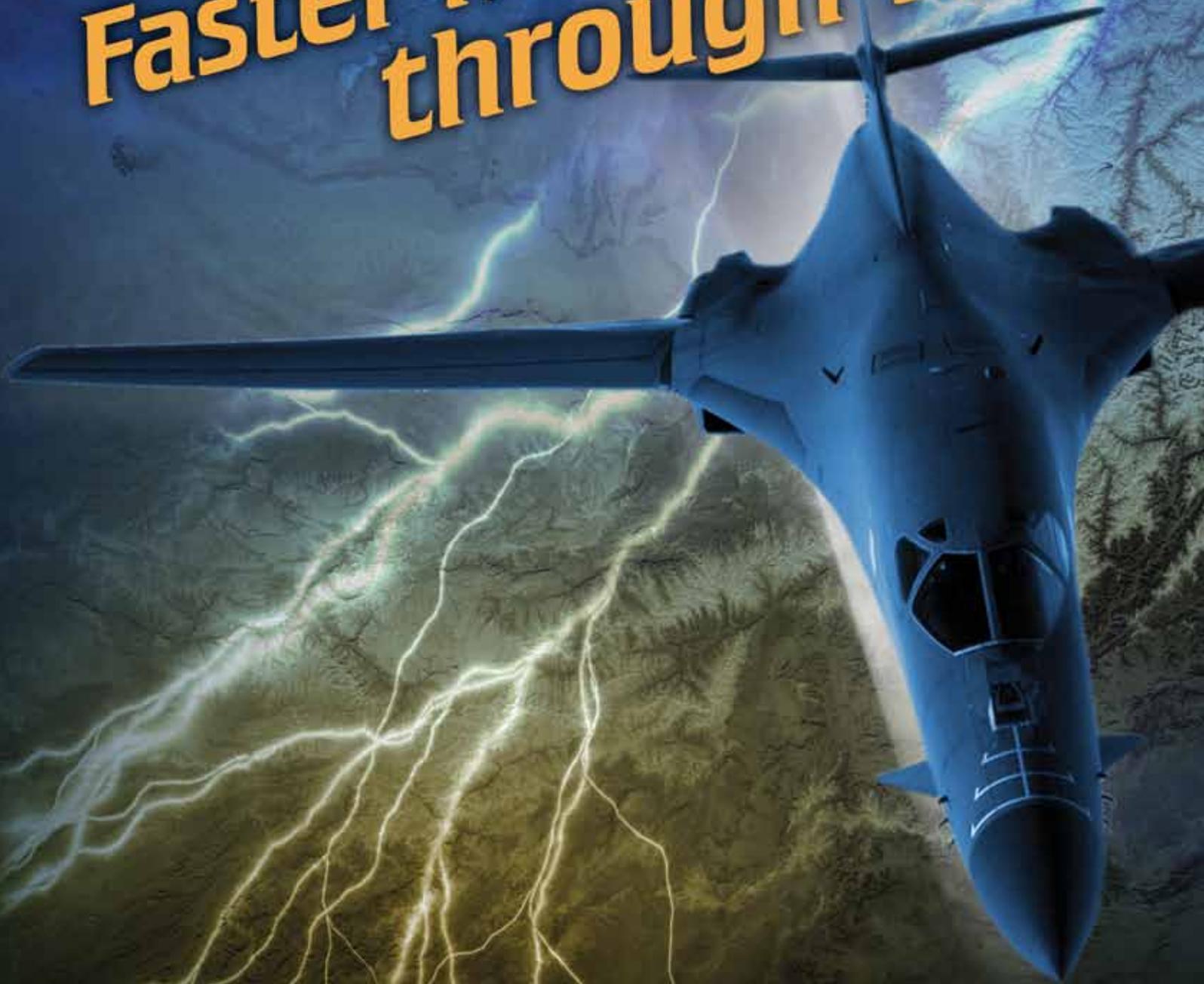
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# Faster Maintenance through HVM





*By HENRY CANADAY  
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The U.S. Air Force continues its shift toward a new model of maintenance. Called high-velocity maintenance (HVM), the new approach is modeled on the best-practice commercial aircraft maintenance that minimizes downtime and maximizes availability.

HVM has four basic principles, each of which must be translated into detailed policies and procedures for individual aircraft. First, planners must thoroughly understand the condition of an individual aircraft prior to its arrival in depot. Second, they must have all the parts, tools and skilled manpower ready when the aircraft arrives in depot. Third, mechanics must follow a standard sequence of work during visits and adjust quickly for surprises and changes. The fourth tenet follows from the first three. More mechanics will generally be working on the aircraft simultaneously, getting more done more quickly, and thus getting aircraft out of the depot sooner. This higher application of man-hours per day is called the burn rate and it is one measure of progress toward true HVM.

The Air Force could eventually apply HVM to many models, and the approach is applicable to many other military assets. But the service is testing the new approach with three aircraft: the C-130 Hercules at Warner Robins Air Force Base, Ga.; the B-1 Lancer at Tinker, Okla.; and the F-22 Raptor at Hill, Utah.

HVM is furthest advanced on the C-130s at Warner Robins. Traditionally, program depot of maintenance (PDM) on C-130s was done once every six years. Isochronal inspections to assess conditions and attempt to predict PDM tasks were done in the field every 450 days.

Under HVM, depot maintenance is instead divided into four briefer visits made at 18-month intervals. One focuses on fuselage maintenance, another on wing work, another on the tail section and another on flight controls. The four visits can be done in any order, according to the specific needs of each aircraft. And it is during each visit that inspections are conducted on other sections of the airplane to predict work during the next visits.

Warner Robins is validating the HVM approach with a series of nine visits on the older C-130Es and Hs. By March 2011, it was working on its sixth C-130 using HVM tenets. "With every validation we continue to make measurable progress," said Jerry Mobley, sustainment directorate HVM team lead. "Our work packages are getting better and we're making progress on properly sequencing the work as well as continuing to improve supportability of the work package."

The first HVM principle, understanding the aircraft, has usually been satisfied. There were no surprises on the first four visits, although on the fifth visit, which was almost a full PDM, there was some unpredicted corrosion work necessary. "The pre-induction inspection process has been extremely successful in the identification and planning of maintenance requirements before an aircraft arrives," Mobley said.

Pre-positioning of parts and tools has been working well throughout the validation visits. Warner Robins has been improving at the third HVM principle, planning tasks and rapidly adjusting these when necessary.

After the first two visits, when work had to be stopped when it got out of sequence, industrial engineers were brought in and adjustments have since been made more quickly. "Revised processes to identify discrepancies and resolve them through the maintenance work request system has also reaped benefits, reducing the time from days to hours," Mobley said.

But there are still challenges. "In the production area, adhering to planned, daily sequenced work still is our main challenge." Much of this is due to past habits. "We are continuing to educate at all levels to drive the change."

Burn rate was originally 125 to 145 labor hours per day. By the fifth visit, it was nearly 300 hours per day and more than 340 hours

per day once the aircraft was in dock. By the sixth visit burn rate was 361 hours per day and 441 hours when the aircraft was in dock. The depot is aiming for 500 hours daily.

Warner Robins now plans to do two more validations of HVM tenets, focusing on empennage. "Our current schedule focuses on applying HVM to PDM aircraft inducted after June 2011," Mobley said. "Transition plans are well under way for making the move from validation efforts into production of HVM on the PDM line."

Warner Robins started validating HVM on older C-130s. The first of the newer C-130Js, with a structural monitoring system not available on older models, is due for its first 12-year check in late April. Six more C-130Js will come in, to either Warner Robins or Baltimore, in fiscal 2011.

Tom Wetherall, deputy vice president for global sustainment at Lockheed Martin, explained that HVM will be done on Js according to Maintenance Steering Group (MSG3) practices. Lockheed made its recommendations for MSG3 maintenance practices on Js in January, and these are now being reviewed.

The MSG3 approach prescribes a commercial program of A checks at 270 days, B checks at 540 days, C checks 1,080 days and then a second C check at the depot at 1,080 days. Mobley said A and B letter checks line up closely with traditional home station checks, roughly every nine months, with isochronal inspections roughly every 18 months. "There are two alternating C checks, C1 and C2, with slightly different requirements, Mobley said. "C1 and C2 checks alternate between consecutive A and B checks, separated by 36 months. The heaviest maintenance is after the first 144 months of operational use and becomes a recurring requirement every 72 months thereafter, which equates to adding it every third C2."

Wetherall predicts that maintenance programs on Es, Hs and Js should eventually converge. Mobley said the Program Office is taking a hard look at using progressive maintenance in letter checks as a basis for handling maintenance for the entire C-130 fleet. He stressed that the Air Force's goal is to cut downtime on all C-130s as much as possible and it is not unrealistic to aim for a 20 percent reduction in depot downtime.

"We are talking about this approach to our international customers," Wetherall noted. Australia and the United Kingdom have implemented a similar approach and Norway has long had it for its four C-130s.

In addition to validation visits, Warner Robins has selected fleet-scheduling software that currently supports F-15 Eagles, and expects to use it for C-130s by December 2011. The center also needs a new fleet-management application for comprehensive configuration management and requirements forecasting. "We are working with our engineering and IT organizations to possibly use existing configuration and database systems until the full capabilities of asset management and resource forecasting are available in a standard Air Force enterprise system," Mobley said.

Tinker has been doing PDM on the B-1 every five years. It is considering whether to switch to intervals of 15 or 30 months or remain with the 60-month period. By early March, Tinker had completed two prototype high-velocity PDMS on B-1s. The base inducted its third jet on January 18, the fourth on January 24 and the fifth on February 28. In all, it expects to do 13 prototypes by September 30, 2011.

Tinker re-engineered several tasks on its first prototype, two more tasks on the second prototype and continues to re-engineer more tasks each time a new aircraft comes in to depot. The overall

aim is a mechanic-centric process, with kits of parts, tools and technical documents ready at point-of-use. Each mechanic should also have a check list and optimal sequence of actions to follow.

“We are moving forward and doing HVM,” summarized Colonel Charles Sherwin, the Air Force’s B-1 program manager. “We have done the deep dives on the prototypes, and we are kitting and doing the supply chain management and engineering.” The base works closely with the Defense Logistics Agency on supply-chain challenges.

Tinker has already developed kits for all the parts that are needed 100 percent of the time. “They are at point-of-use and very successful, the mechanics love it,” Sherwin said. Every morning Sherwin and his team go over deviation reports that list two kinds of items that need action: gaps that have been found in HVM procedures themselves or failures of mechanics or others to follow the new HVM procedures. “We are data driven and will not make a decision until the data are in,” Sherwin noted.

Boeing is supporting HVM on the B-1 in four ways, according to Rick Greenwell, the company’s program director for the B-1. It is deploying a diagnostics system to help predict depot work. Servers for this system will be installed in June or July, testing will be conducted this summer and completion is expected in March 2012. Boeing is also working on the kitting of parts and tools for both the 100 percent parts and for another set of parts that are not needed all the time. The company consulted its own commercial experience with the 737 as well as Warner Robins on the C-130 and KC-135 maintenance managers to develop kitting procedures. And Boeing is developing the MSG3, similar to the Air Force’s reliability-centered maintenance, policies and procedures for maintenance of the B-1. “Boeing is very important to what we do,” Sherwin said.

Tinker expects to cycle through all its B-1s by 2013. PDMs on the bomber originally required 180 days, plus or minus 10 or 20 days. The base has not decided yet whether to stick with PDMs at 60 months or move to shorter intervals. “Our goal is to get PDMs down to 120 days or less if possible,” Sherwin said. “Then we can make a decision on whether we can break that up into smaller chunks.”

The Tinker team seems confident they will reach their goals. “This will be very successful and we can apply it to other systems,” predicted Marta Conant, Air Force program manager for the B-1. “This is the only aircraft to fly 24 by 7 ATO [air tasking order],” stressed Sherwin. “This is vital, and HVM is one of ways we will keep it available.”

Hill is starting HVM on the F-22. HVM does not require such dramatic changes on this new aircraft as on C-130s and B-1s since HVM principles were built into the F-22 program from the beginning.

Lieutenant Colonel Eric North, manager of F-22 systems support, notes that the F-22 does not have a scheduled PDM. It comes into depot only for modifications, upgrades or special problems like corrosion.



The F-22 is part of the high velocity maintenance evaluations being performed at Hill AFB. Different from the C-130 and B-1 being evaluated at other locations, the F-22 is a much newer system. [Photo courtesy of the U.S. Air Force]

Nevertheless, Hill is reviewing HVM principles and will implement as many it can. North’s team concentrates on understanding the aircraft, standardizing the work to be done and increasing the burn rate of touch labor.

The modifications done on an F-22 depend on when it came off the production line. That has meant different lengths of time in depot from 45 all the way up to 90 days. About 12 mechanics usually work on an F-22 at one time.

Hill is considering combining modifications that have been done in the field into a set of modifications done in depot. This would lengthen total depot time to up to 125 days but reduce total downtime. North expects all depot spans will be from 95 to 125 days, depending on the amount of work that must be accomplished for each aircraft. “HVM won’t shorten these time spans; it will however allow us to accomplish more hours of work in that span than previously accomplished.”

For example, there are now three levels of time compliant technical orders (TCTOs) issued for the F-22: urgent, immediate and routine. North will bring some of the routine TCTOs on the F-22 back to depot from the field. “It all depends on access. If we access the area that is in need of a TCTO, then we will most likely accomplish it.” He said this change could reduce total downtime more than HVM.

But the new approach will be pressed. “As we get more proficient with the aircraft and standard things that are done every day, we should be able to increase the amount of work we do while it is here and be able to deliver it back to the user earlier.” ★

For more information, contact *MLF* Editor Jeff McKaughan at [jeffm@kmiimagroup.com](mailto:jeffm@kmiimagroup.com) or search our online archives for related stories at [www.MLF-kmi.com](http://www.MLF-kmi.com).

# SUPPLY CHAIN

Compiled by KMI Media Group staff

## Enterprise Resource Planning System

CSC has launched the second of three pilots under Release 1 of the U.S. Air Force Expeditionary Combat Support System (ECSS), a major enterprise resource planning (ERP) program that will significantly upgrade the Air Force's global logistics capabilities.

This pilot delivers base equipment management capabilities to Hanscom Air Force Base, Mass., and five supporting Air Force organizations. The first pilot, which was deployed in July 2010, supports vehicle maintenance and tool control at Hanscom and several other supporting sites. The third pilot, which is in development and on schedule to begin testing this month, will enable base-level materiel management capabilities.

Combined, the three pilots under Release 1 will support approximately 40,000 users at more than 180 primary sites and establish the foundation for enterprise planning and further logistics transformation across the Air Force.

Once fully deployed, ECSS will provide the capability to optimize asset management by transforming how the Air Force manages its global supply chain. It will integrate all key stakeholders, including other military services, industry trading partners, the Department of Defense and various federal agencies. ECSS will enable the Air Force to reduce costs, largely by reducing spare parts inventory, and facilitate compliance with federal accounting requirements.

"ECSS's potential to improve Air Force logistics operations represents a possible quantum leap in supply chain management," said Chief of Staff of the U.S. Air Force General Norton A. Schwartz. "Along with total asset visibility, ECSS will standardize logistics processes and provide an enterprise-wide view of the supply chain, making efforts more efficient and data more precise."

"We are pleased with ECSS's solid, steady progress against expectations, and see that continuing through Release 1," said James W. Sheaffer, president of CSC's North American public sector line of business. "CSC is proud to support the Air Force's modernization efforts by addressing complex supply chain requirements with interoperable and agile solutions that enable faster and more effective decision-making."

## IR LED Lighting System

Dialight a provider of LED lighting systems and technologies, recently unveiled its new Vigilant Series L-810 RTO infrared series dual red/infrared LED L-810 obstruction light, the first and only L-810 product on the market featuring red and IR LEDs in a single unit.

The Vigilant IR series leverages the company's optics technology to ensure visibility around military bases, airfield perimeters, buildings, towers and other obstructions for aircraft pilots, both during normal flight or when aided by night vision systems, while minimizing light into surrounding areas.

Night vision goggles and aviator's night vision imaging systems often employ Class A, B, and C filters to block cockpit lighting from saturating the imaging system. It is possible that these filters can sometimes reduce the LED sources that emit light in the visible spectrum. The Vigilant Series overcomes this obstacle by combining visible red LEDs and IR LEDs in a single unit.

"This new IR unit features Dialight's

patent-pending optical, electrical and mechanical design to uniquely incorporate red and IR LEDs in a single unit that offers a much lower profile and lighter weight than any competing product," said Roy Burton, Dialight's Group chief executive.

Available in a single or dual fixture for new or retrofit applications, the L-810 obstruction light features a self-contained wiring compartment and is ideally suited for change-out from existing incandescent systems using the same wiring and housing. Highly shock and vibration resistant, the product is designed to operate flawlessly under some of the toughest conditions at temperatures ranging from -40°F to 131°F.

Consuming just 5.6 watts per unit, the Vigilant RTO is significantly more efficient than other dual-head red/IR units and uses 95 percent less energy than traditional incandescent systems. The system has a peak IR spectral intensity at 860 nanometers, and may be operated in steady-on or flashing mode.

## Sustainment Battle Lab

The U.S. Army has awarded Cubic Applications Inc., a mission support services subsidiary of Cubic Corporation, an \$18.8 million contract for functional and analytical support to the U.S. Army Combined Arms Support Command's (CASCOM) Sustainment Battle Lab, Fort Lee, Va.

The Sustainment Battle Lab assists the Army Concept Development and Experimentation Plan and the sustainment community by researching and evaluating existing and emerging logistics processes; developing future concepts, force designs and organizational relationships; and evaluating existing and emerging logistics technologies and facilities to support these activities.

The battle lab participates in

joint, Army and other service branch processes, experiments and war games in fulfilling its responsibilities. Under this contract, Cubic will provide management, analytical and technical support to the Sustainment Battle Lab and other CASCOM directorates for Army Concept Development and Experimentation Plan and Future Force initiatives.

"The support Cubic provides to this program will assist the Army's combat development process in a variety of venues by providing analytical rigor to develop quantifiable data so the Army can make informed decisions and see a positive return on their investment," said Joe Roszkowski, program director for Cubic's Operations Support Division in Prince George, Va.

## Centralized Lift Truck Management

Rush Tracking Systems, a provider of advanced tracking solutions, software and services for manufacturing, and warehouse operations, has released Orchestrator, a new software module in its VisibleEdge platform. Orchestrator integrates with existing WMS and ERP applications, streamlining the distribution and execution of work instructions to lift operators. These capabilities also provide the tools which allow for centralized lift truck management and enablement of a shared-services approach for fleet management.

Orchestrator significantly improves the forklift operator's experience by building

on the automated load and location data capture capabilities of the VisibleEdge solution. It provides a simple work queue management module for lift truck drivers that provides confirmation of load obtained, feedback on incorrectly picked loads and location capture of all loads moved, eliminating barcode scanning of inventory and locations. The VisibleEdge Orchestrator provides real-time feedback to management on resource, truck and inventory location and historical data of truck and resource usage.

This advanced forklift solution enables unprecedented real-time granular data that

supports improvements to operational control, inventory accuracy, shipping and receiving accuracy, operator productivity, streamlining material movements, reducing working capital, and improving return on net assets.

The solution is suited for constrained manufacturing and warehouse environments, and supports business processes such as automated shipping and receiving, returnable container tracking, work-in-progress tracking, stamping operations and finished goods tracking.

## Fuel Cell Milestone

Lockheed Martin and Technology Management Inc. (TMI) for the first time have operated a fuel cell generator for 1,000 hours using the military's standard fuel, JP-8. This milestone paves the way to field fuel cell generators in theater to create a more efficient, safe and affordable method to convert expensive fuel into electricity.

Fuel cell generators can reduce fuel consumption by 50 percent or more, compared to conventional internal combustion generators. Similar to a battery, fuel cells generate electricity through a chemical reaction, unlike the combustion engines used in military generators and automobiles.

"By the time fuel reaches deployed troops, the cost can reach hundreds of dollars, and the troops who transport that fuel are some of the most exposed on the battlefield," said Steve Sinsabaugh, Lockheed Martin fuel cell manager. "This milestone brings us closer to fielding military fuel cell generators, which could provide the military a safer, less expensive alternative to conventional power generators."

Lockheed Martin is working with Cleveland-based TMI, which is Ohio's oldest fuel cell company, and Stark State College to mature the fuel cell technology. This team received competitive grants from the Ohio Third Frontier, a program committed to creating new technology-based products, companies, industries and jobs, in 2009 and 2010 to advance fuel cell technology. More than 100,000 military generators are used worldwide to power services ranging from lighting and air conditioning to powering computers, radios, and command and control systems.

## Maintenance Support Device— Version 3

VT Miltope, a company of VT Systems Inc., recently rolled out their U.S. Army At-Platform Automatic Test Systems (APATS) Integrated Family of Test Equipment (IFTE) Maintenance Support Device-Version 3 (MSD-V3) program.

The MSD-V3 is being produced under a five-year indefinite delivery/indefinite quantity contract. The MSD-V3 is a militarized rugged laptop specifically designed and tested to withstand harsh tactical environments and is the Army's newest standard for at-platform maintenance test systems.

Since 1995, VT Miltope has been a major player in the U.S. Army's fielding of more than 40,000 APATS in the IFTE program. MSD-V3 is the physical manifestation of several years of user feedback, requirements, design and testing efforts by the Army-VT Miltope team. VT Miltope is proud to celebrate this accomplishment with its Army program partners and is excited to fulfill

the program requirements of up to 39,000 MSD-V3 systems.

"The MSD-V3 requirements were established through comprehensive collaboration with Army maintainers," said Colonel John S. Myers, project manager, Joint Combat Support Systems. "The MSD-V3 hardware that we are fielding will improve the soldier's ability to perform their maintenance mission in extreme environmental environments and challenging tactical conditions."

"VT Miltope's workforce enthusiastically embraces the MSD mission and its importance to the U.S. Army," said Retired Army Brigadier General Tom Dickinson, president and CEO, VT Miltope. "Today we are seeing the culmination of months of dedicated work to design a system that gives the soldier the tools necessary to keep systems in the fight. We are proud to deliver robust test equipment that works in the toughest, harshest environments."

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# Process Improver

# Q&A

## Leveraging Constant Process Improvement for Mission Performance

### Rear Admiral Mark F. Heinrich Supply Corps, United States Navy Commander, Fleet and Industrial Supply Centers

Rear Admiral Mark F. Heinrich currently serves as commander, Fleet and Industrial Supply Centers (COMFISCS), San Diego, Calif. COMFISCS is comprised of more than 6,400 military and civilian logistics professionals operating from 200 locations worldwide, providing an array of integrated global logistics and contracting services to Navy and Joint operational units across all warfare enterprises, and base supply functions at 77 shore entities.

Heinrich was commissioned in the Navy Supply Corps following graduation from the Naval Academy in May 1979. He holds a Bachelor of Science degree in engineering from the Naval Academy and masters' degrees in business administration and petroleum management from the University of Kansas. He is also a graduate of the Kellogg Graduate School of Management Advanced Executive Program.

Heinrich's previous position was as director, Logistics Operations and Readiness (J-3/4) for the Defense Logistics Agency (DLA), headquartered at Fort Belvoir, Va. From June to December 2008, he deployed to Kuwait as director of United States Central Command Deployment and Distribution Operations Center at Camp Arifjan, where he applied deployment and distribution expertise to enable the planning and execution of joint and combined force military operations.

His other shore assignments included serving as deputy director of the fuel department at Naval Supply Depot Subic Bay, Republic of the Philippines; fuels officer and air station services officer on the staff of commander, Naval Air Force, U.S. Pacific Fleet; energy policy intern in the Office of the Secretary of Defense; H-60 and H-2 business manager for Naval Aviation Supply Office; special assistant for pollution prevention and compliance in the Office of the Assistant Secretary of the Navy (Installations and Environment); executive assistant to commander, Naval Information Systems Management Center; Naval Air Station Whidbey Island supply officer; Naval Petroleum Office commanding officer; force supply officer on the staff of commander, Naval Surface Forces; and as commander, Defense Supply Center Richmond, Va., the lead supply center for aviation within DLA.

Heinrich's sea tours included duties as assistant supply officer of USS Kinkaid (DD 965), and supply officer of USS Gridley (CG 21) and USS Constellation (CV 64). While he was aboard Constellation, she was awarded a Golden Anchor, Battle E and the "Blue E" for Supply Excellence.

His personal decorations include two Defense Superior Service Medals, two Legions of Merit, a Defense Meritorious Service Medal,



and five Meritorious Service Medals, among various other awards. He is a qualified Surface Warfare Supply Corps Officer, Naval Aviation Supply Officer, and is a Department of the Navy Acquisition Professional.

Admiral Heinrich was interviewed by KMI Media Group Editor-in-Chief Jeff McKaughan

**Q: Let's talk about the physical overview of your command—its organizational structure, its size and maybe a comparison to what it was a year or two ago and where you think it might go?**

**A:** Well, our organization is worldwide. We're an echelon 3 organization of the Naval Supply Systems Command, with my boss, Rear Admiral Mike Lyden, in Mechanicsburg, Pa.

There are five echelon 3 organizations within the Naval Supply Systems Command—NAVSUP. There's the Navy Exchange Service Command [NEXCOM], Naval Inventory Control Point, Fleet and Industrial Supply Centers, and two smaller organizations, Naval Supply Information Systems Activity that does IT [information technology] support for business systems, and also an organization that does logistics planning, the Naval Operational Logistics Support Center. They provide planners to numbered fleets and they manage an operations center for us. So it's a great group of five commands.

We're the largest of the commands—with the exception of NEXCOM, which has a lot of folks who work at all their stores—with about 5,700 people, about 1,000 enlisted men, and the balance civil servants. Of course, in addition, there are a number of contractors.

But what has really been fascinating about the evolution of my organization has been what we shed. Over the last several years, we've executed the Base Realignment and Closure law, and we moved a pretty significant number of individuals who supported the logistics requirements of our shipyards and our big aviation depots—four shipyards, three aviation depots—to the Defense Logistics Agency.

Candidly, as a result of that, we've had the opportunity to start to slue our view away from the industrial activities and squarely on our fleet operating customers, and that has been very healthy for us.

The other thing that we've done to wed ourselves closer to the fleet and less to bricks and mortar is a warehouse transfer initiative, to move warehousing to the Defense Logistics Agency. I learned when I was the director of operations at Defense Logistics Agency, as have other members of our leadership team who did a tour at DLA, that the Defense Logistics Agency really are the DoD's pros when it comes to managing warehouses. As a result, we've realized that it's efficient and effective for us to leverage those DLA experts in warehousing and let them manage our warehouses for us. They do it better, they do it more efficiently, and they do it very well for all of us.

**Q: You talked about it allowed you to slue your view toward your operational customers, your fleet customers. Was that a planned outcome of this, or an accidental benefit?**

**A:** I would love to tell you that the people who designed the BRAC had that in mind, but I think what they really had in mind was that all of the service depots—the Army depots that do tanks and Humvees; the Air Force depots that do the heavy work on very large aircraft like refuelers, and small aircraft like the F-16s; the Marine Corps depots that do tanks and Humvees; plus the Navy depots that do shipyards, that repair ships and aircraft—the expectation was really on those organizations. The Defense Logistics Agency would take all of those organizations and start to create parallel business processes and efficiencies that would be the result of alignment.

That was the focus of BRAC. It is an unanticipated consequence, and a good one for us, that we can focus on the operating customer, because that's where we started many years ago—and we're proving that a singular focus on our operational customer in this uncertain operating environment is critical to being successful.

**Q: The budget request for FY12 has come out. What will the numbers mean for you?**

**A:** Well, I think it's going to be less. I don't know how much less right now, but I think it's going to be less.

As a result of the expectation that it's going to be less, we euphemistically characterize that as creating solvency problems. In advance of knowing what that number is, we're working hard to create some solvency for our Naval Supply Systems Command

and for my organization by leveraging Lean Six Sigma, by leveraging constant process improvement, the black belts and green belts that we've trained to look across our products and service and improve each one of them.

**Q: And that's a process you've already started, not waiting for the number to fall?**

**A:** That's right. We have a general sense of where we want to get to, but the way we're getting after that is by improving our processes—and in some cases, aligning our processes.

In an area like warehousing, we still have some warehouses at naval air stations, assessing whether some air stations may have longer operating hours than they need, and trying to manage those hours. Looking at whether we have the right number of aircraft refuelers. We can look at the number of refuelers versus the number of gallons dispensed across air stations and assess whether some have more and some have less. Now we recognize air stations have different businesses and different operational cycles, but that's just one of many examples. And let me talk about a couple of others.

Some of our lean efforts are really exciting. Household goods is one, and I will tell you that when you think of what we do, frankly managing household goods is probably one of the last things you think of, but it's a very important business base for us because we manage the affairs of sailors and their families who have to move around the country as a result of the orders they receive from our bureau personnel. We've improved that process by leveraging the Defense Personal Property System being developed by the U.S. Transportation Command. We've reduced the number of people we need in individual storefronts by increasing folks at call centers who can talk with employees for as long as it takes them to fill out a form online. And we've just created equity and process alignment by looking across the Navy.

The final thing we're doing in household goods is we're creating joint backrooms. Everyone understands the concept of a backroom business process, and what we're doing for the Navy is creating two large joint backrooms here in the United States—one in San Diego and one in Jacksonville, Fla. With the support of the Secretary of Defense, Office of Transportation Policy, we are going to be able to take those backrooms and use them to support other service customers in that geographic area.

**Q: Not just Navy customers?**

**A:** That's right. And in return, the Air Force in the northeast is going to support our backroom needs. The Army in the middle-Atlantic area is going to support our backroom needs, and the Army in the northwest is going to support our backroom needs, as an example. And in central southwest, in Texas and Oklahoma, the Air Force will support us. So it's very exciting.

**Q: Do you have a single major challenge that you think you will face in the next 12-15 months?**

**A:** I do, and there's one among the many challenges we have. One comes out more than any of the others, and that's the deployment of a brand-new SAP ERP [enterprise resource planning] system. The way the Navy decided to do it, to deliver this ERP system, is

to do our central inventory control points first and also establish the accounting and finance functions as well. The accounting and finance functions for the Navy have been established for about half.

The inventory control point, this function that will support the process of turning off a very old COBOL system, that is getting turned off. We're in the process of rolling out the last 40 percent of our SKUs, or parts, in our naval inventory control point.

That's going to finish this month, in March. Then in May, we're going to do the first of four rollouts to start delivering this sap functionality to our field activities, and the first ones will be in Hawaii and Norfolk, Va. After that, then we'll have three additional rollouts to deliver this functionality around the world to our facilities. It takes a lot of work, it takes a lot of training, change management, and truly we're changing culture. As many people acknowledge, culture will eat strategy for lunch if you don't get it right, and so we're working very hard to be ahead of the game and remind folks how important this cultural change is. It's very exciting.

**Q: Let's go back to the warehousing and the transfer of much of your warehouse capacity to DLA. You talked about the gains for the Navy in tangible returns, but what were/are the cultural challenges to do that and how did you overcome those?**

**A:** I've learned from many mentors that you don't have to own things to control things. You have to set standards and expectations, and you have to monitor and measure. As a result of that, I feel very comfortable in delivering warehousing as a mission, as an example, to the Defense Logistics Agency. What's really exciting is what we're getting out of the transfer.

Indian Head, Md., is a perfect example. We're storing hazardous material in warehouses that were built 100 years ago to store soda ash. We have warehouses that are almost national historic facilities in many places because the Navy is so heavily dependent on ships and aircraft, we have been unable to improve our warehouses. It's not for lack of trying; it's just a product of the budget environment that we're in. As a result, we have warehouses that we probably couldn't bring to a high standard should we want to do that—Indian Head is a perfect example.

By leveraging the Defense Logistics Agency and their engineers—who do a great job of building warehouses with effective cubes, with effective footprints—so we can take material out of places like Indian Head and places like Cheatham Annex, and put it in the wonderful DLA facility in Richmond, Va., which has space available.

Separately, not only does it prevent us from having to improve or maintain older warehouses, in some cases 100-year-old warehouses, but in the case of Indian Head, it's going to allow Indian Head to cancel a MILCON [military construction] project. They had planned—but not yet funded—a \$40 million MILCON project to build a set of warehouse infrastructure there to better support the needs of their customers.

In the case of Cheatham Annex, it's allowing the Navy Expeditionary Combat Command, which has large amounts of equipment that they'd like to get under cover, to leverage these warehouses as they're emptied out to put some of the equipment under cover. This will probably reduce or eliminate the wear and tear on equipment that was just stored out in the open.

I can go on and on, but the bottom line is labor savings, savings

in contracts, savings in MILCON, savings for other constituents in the Navy that would have to lease space, and as we reduce our infrastructure, we expect to reduce our infrastructure by tens of percentages. That's going to reduce our base operating support bills as well. We'll just have to make sure that we're good stewards as we put new IT systems in these warehouses to make sure we can effectively account for them.

**Q: You still own and have warehouses—how did you decide what warehouses to move? Which things were in the warehouses that you moved and which did you keep?**

**A:** The warehouses we have to keep right now are warehouses at our naval air stations and the main reason we're keeping them at this stage is, first, because I believe in thinking big, but starting small and then scaling. We've given Defense Logistics Agency plenty of things to work on and they have the challenge ahead to take the warehouses we've given them and create efficiency, and I have no doubt they'll do that.

Additionally, one of the challenges we have is some of the systems that we operate—like our Naval Aviation Logistics Management Information System—do not have links to the DLA warehouse management system, the Distribution Standard System.

Nonetheless, we've given DLA well over 5 million square feet of warehouse space, and I have no doubt that they've got plenty of things they can do to make that more efficient.



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**Q: Let's talk about the Navy's new littoral combat ship, which is going to be an additional chain for you to manage. What are you doing to prepare for that acquisition and what else do you have to do?**

**A:** The first two littoral combat ships are operating, the *Freedom* and the *Independence*, with *Fort Worth* and *Coronado*—LCS 3 and LCS 4—being built right now. As those ships emerge from the builders' yards and begin to operate, the work that was traditionally done by a supply department inside the lifelines of that ship will be done by my organization, the Fleet Industrial Supply Centers. The unit that we've created is called the Littoral Combat Ship Support Team. It's in San Diego, and is designed to support about 12 ships. It's a very lean team with one officer and some number of enlisted men and civilians.

Our goal is to effectively support these ships with about 4.5-5 people per ship assigned. We're essentially doing the first two ships with about nine people. That is going to create an efficiency for the Navy, because most every ship class within the Navy have more than 4.5-5 people doing the job of managing that material inside the lifelines. So we're going to do a much better job for the Navy.

But demonstrating we can do it is okay with one, is not so hard with two, with the other two, *Coronado* and *Fort Worth*, when they're delivered it will make it a little bit harder for us. As we get to five and six, seven and eight, up through 12 in one location, that will probably challenge us pretty well. It's exciting to see what we're capable of, because we have to support these ships. We have to make them successful. They are unlike any other ship we've ever supported.

**Q: Will the basing of the ships create any special issues for you? Do you think that one builder's ships will be stationed on one coast and the other on the other?**

**A:** I don't know yet because the decision hasn't been made, but I would not be surprised if you see a mix of ships in San Diego and a mix of ships in Florida. I'm just thinking out loud, but if you tried to put one class of ships in San Diego and one class of ships in Florida, as an example, it would force you, because we're building two types of littoral combat ship at the same time, to establish teams in both locations, perhaps earlier than we would have. It also forces the Navy to build extra infrastructure in those locations earlier than I think they had planned.

There's no problem about having two types of littoral combat ship in one home port—that shouldn't bother us at all. I think you'll see 11 and 12 ships in San Diego and then they'll shift to the East Coast for the 13th.

**Q: You're managing a global supply chain. What systems do you have in place that allow you to keep track of your assets, to predict what you're going to need ahead of when you need it, to have the right supplies on hand at the right locations?**

**A:** There's a couple of ways to answer that question. The CNO said, and I quote him, 'We are a great Navy because of our people, and we are a global Navy because of our logistics.' So our Navy is successful as a global Navy because of our logistics.

If I tie back to the people that I depend on on a day-to-day

basis, I'm very proud of those folks. We have seven commanding officers that command large organizations around the country. Those seven officers as a whole command more than 100 sites, actually about 110 sites, and those 110 sites are really key to this organization. We have a great product and service team that is responsible for ensuring good alignment and good processes for each of our teams, but I depend on those commanding officers to command.

In San Diego, we have Captain David Pimpo, who is responsible for everything from Fallon, Nev., all the way down to the border. In Pearl Harbor, Hawaii, we're actually managing not just a Navy base but now a joint base so Captain John Polowczyk, for example, is responsible for the support to the flight line at Joint base Pearl Hickam. Captain Matt Feely, who is in Yokosuka, Japan, controls an organization that goes all the way from Korea to Guam to Australia and to Singapore, and to Diego Garcia. I have Captain Dana Weiner in Sigonella, [Italy], who commands an organization that goes from Bahrain to Rota, Spain, down to the Horn of Africa, to Djibouti. In Norfolk, Captain Lee Singleton commands an organization that goes from Great Lakes and Millington, Tenn., in the west and Groton, Conn., in the north, to Norfolk. And down in Florida, Captain Joyce Robinson commands our supply center in Jacksonville that includes ports on the Gulf Coast and support for ships operating in South America. Lastly, Captain Jim Dolan, in the Pacific Northwest, commands all of our efforts to provide logistics support to naval facilities, all of the logistics requirements for ships based in the Pacific Northwest.

It's a big group covering a lot of territory. These are really fabulous commanding officers. They're really how we command and control this organization, because I believe that commanders should command.

**Q: When talking about the naval air stations you mentioned fuel. You're responsible for Navy POL. Tell me about that enterprise.**

**A:** First off, it's kind of my first love, because I began my Navy career as a fuelie, after learning to be a surface navy logistician. My first ashore assignment was at the fuel pier in Subic Bay, in the Republic of the Philippines. After that I had an opportunity to go then to the Naval Air Force staff and become the fuels officer on the Naval Air Force staff. I was there from about '84 to '86, and I learned firsthand how important it is to effectively manage fuel operations at air stations. I actually had to go out and inspect them.

We are doing so much right now. We are working with DLA, we're working with all of our stakeholders to improve the facilities. This year at DLA, we'll have in some cases hundreds of millions of dollars available to the services to effectively work and improve their facilities. But it can't be allocated or executed without very clear forethought and diligence, which means the projects that we write have to be very effective.

Not only do we support the Navy, but I talked about the joint base at Pearl Hickam. We support the air field there, and then even at Anderson Air Force Base, we support Anderson airfield up there by being responsible for that infrastructure. All told, the infrastructure we own totals well over \$11 billion, so that's pretty significant.

**Q: And that includes the pipelines, the fuel storage facilities, throughput trucks, and everything to move fuel from storage to the plane or ship?**

**A:** That's right. Right now we're working on, just to give you an example of the facilities challenges we have, right now we're building a brand new fuel farm in Point Loma, Calif. We've had a fuel farm or a coaling station there for 100 years. In fact this week, we demolished one of the last above ground tanks from the original fuel farm—built in 1917. The facility that we're replacing was an old antiquated facility that just challenged us every day because of the way the pipes were coupled, because of the position of the tanks, and we're replacing it with the largest, most expensive MILCON DLA has approved so far—\$195 million.

Additionally, we're working on a fuel pier to go with that for another \$78 million. That's the kind of financial business that we're involved in here, maintaining the facility. Plus we've got huge fuel reserves around the world to support the needs of our operational forces, and we work very hard to ensure those fuel reserves are always well-controlled.

**Q: Alternative energy: Is that an area that your command is involved with and looking at, testing, trialing, both for military platforms and facilities ashore?**

**A:** It is, but more for military platforms. We're involved in supporting Rear Admiral Phil Cullom from the OPNAV staff, the CNO staff, in effectively delivering a pretty significant amount of fuel in 2012 to support demonstration of our green fleet. Now right now we're delivering fuel to Patuxent River so the Naval Air Systems Command can test it.

Once we're done with that, we'll deliver a pretty significant amount of both jet fuel and diesel fuel in the hundreds of thousands of gallons. We'll deliver that fuel to probably the Northwest, where they'll load it on an oiler and use it in the RIMPAC [Rim of Pacific] exercise next year to show the potential success of our alternative fuels.

We provided chemistry support when the Navy recently flew an F/A-18 with a 50/50 blend of jet fuel and power fuel.

**Q: What's your business relationship with industry? Do you go out and look to them and their business practices to see if those business practices are of value to you?**

**A:** I do. I talk to folks from industry all the time, and we have professional exchanges through organizations like the National Defense Industrial Association or the National Defense Transportation Association. In fact, I was the master of ceremonies for the recent National Defense Transportation Association event at Gaylord National and I'll provide a keynote address at the NDIA Logistics event in Miami in March.

I've had a chance to compare notes with the executive vice president of Starbucks, Peter Gibbons, for the work that we're doing on SAP, and I compared notes with several other senior company officers as we work to roll out our latest ERP project. I think we're on the right track, based on what I hear from others.

Starbucks is rolling out their own ERP system, and they're at about the same stage we are, frankly. But I think we've got it exactly right, and it really is because of my relationship with

industry that I feel that confident. FedEx, Starbucks, DHL, and so many other vendors, not just transporters obviously, but many other vendors, our big primes, Lockheed, Boeing and others, I know folks in each of those organizations and I feel lucky to be able to talk to them on a regular basis.

**Q: Much of what drives commercial business now also drives in the military: contracting. Successful programs start with a well developed and managed acquisition and contracting process. What are you doing to ensure that your contracting teams are trained and effective?**

**A:** Well, two things. First off, as I talked about trying to find efficiencies in our business processes, contracting is one of those areas where we try to insulate that product and service from cost reductions because it's so important to us.

The second comment is we believe in what I call the youth movement. We have hired many, many contracting interns around our organization. These are people, in many cases fresh out of school, who have great education backgrounds who are jumping at the opportunity to be a part of our organization and get the training that a three-year internship brings. We bring in young men and women and, in some cases, recently retired military graduates. We bring them in at about a GS-7, and after three years they're a GS-12, and at that point they're looking for a facility to go work at. So these are great individuals, and the careful management of education requirements of contracting officers I think is what gives us strength.

**Q: The Persian Gulf is a dynamic region as it is even without the internal political situations, including those in Bahrain. Obviously the 5th fleet is there. Any comments on how that affects your day-to-day support of fleet operations from there?**

**A:** Sure. Well, we have a couple of thoughts. We are mindful of the important role that the 5th fleet plays, and as we work to ensure we're effectively facing Vice Admiral Mark Fox, we are adding to our roster there. We're putting a Navy captain there for the first time as a Fleet and Industrial Supply Centers representative, who can really work to be an enterprise rep, who can call any play he needs to call to ensure that the 5th fleet is being supported by the Naval Supply Systems Command.

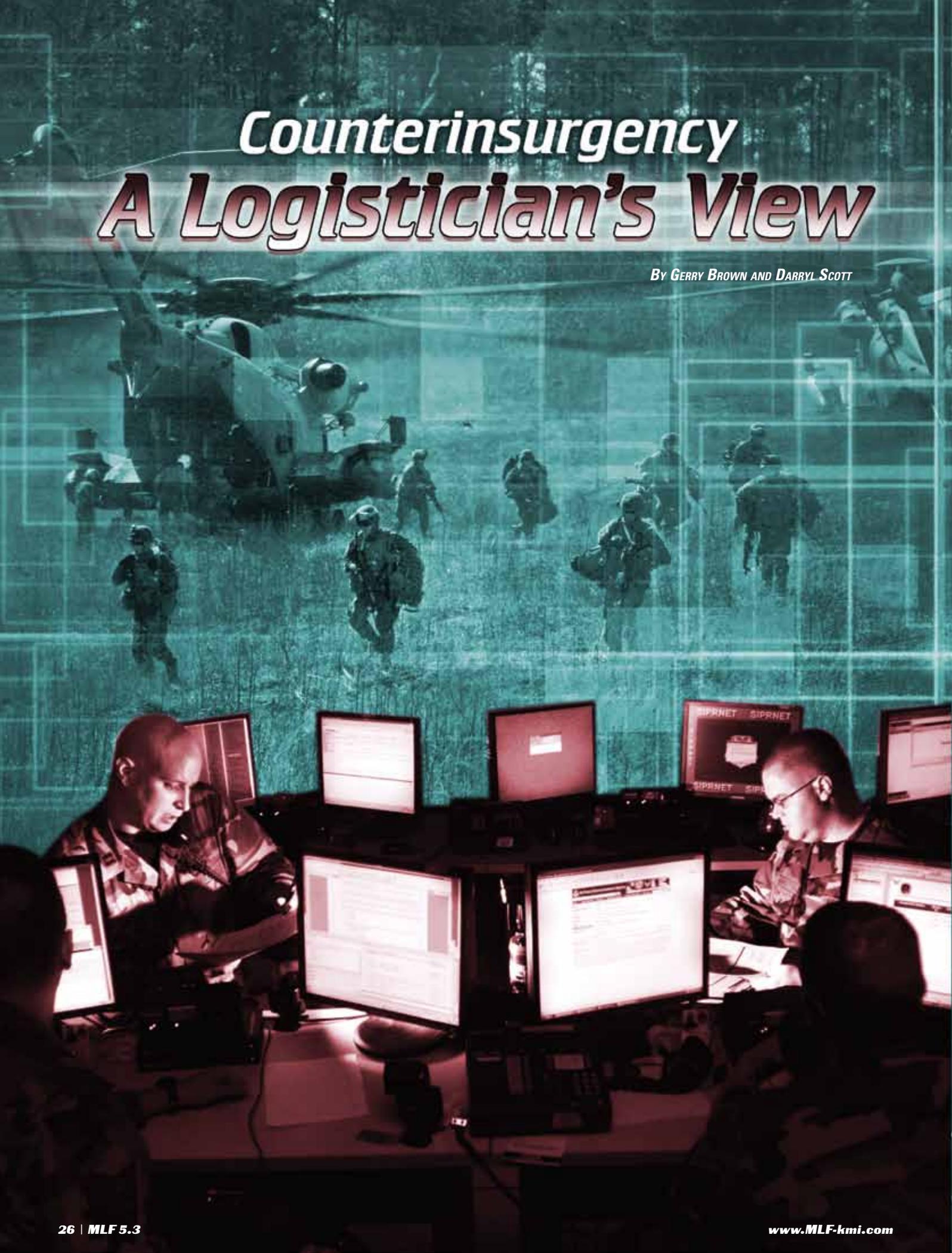
That's exciting. No telling where it will go, but we could very easily have our own flagpole out there in the not-too-distant future.

**Q: Any closing thoughts about the mission and the people of the command?**

**A:** You know, I'm at the Fleet and Industrial Supply Centers for a finite period of time. Every month I get the opportunity to recognize people who complete 20, 25, 30, and in some cases 35 years of service. And these are real impact players, and to listen to their experiences and what they've done reminds you that the people who we have are capable of anything. And being able to lead them is really what makes my job worthwhile. San Diego's a great place, the Fleet and Industrial Supply Centers enterprise has great responsibilities, but it's fun because of the people I work with and lead. I'm really honored to be able to do it. ★

# *Counterinsurgency A Logistician's View*

By GERRY BROWN AND DARRYL SCOTT



## **WHAT MAKES LOGISTICIANS SUITED FOR THIS MISSION?**

The DoD logistics function's mantra is support of the warfighter, and logisticians have played a significant, if often behind the scenes, role in historic U.S. military victories dating back hundreds of years. While the warfighter will continue to depend on the logistics functions for beans and bullets, current operators are often focused on counterinsurgency efforts around the world as a key component in full spectrum operations. Not only has counterinsurgency led to a change in the types of logistical support required by the warfighter, it has also led to a greatly increased importance on creating a better life for the local population. The Counterinsurgency (COIN) Manual, published by General Petraeus and General Amos in September 2006, identifies economics as a major line of operation in bringing stability to contested areas. It makes intuitive sense that men who cannot feed their families are susceptible to recruitment by insurgents, and that a population that sees economic ruin around it is willing to at least passively support our enemies. For some combat units in the field today, the security situation has improved to the point where economic and social stability is seen as important as kinetic operations as a strategy to promote peace and long-term stability.

Promoting economic stability, however, requires the unit commander to have access to a broad range of skill sets, including how to operate a business, how to tap into the possibilities of the global economy, and how to manage a sizeable project and ensure its continued viability. Fortunately for the economic/social lines of operation, the unit commander need look no further than military logisticians (defined in this article as maintenance, supply, transportation and contracting functions) for expertise and resources to win this particular aspect of the fight. There is no function in the U.S. government today with more potential to support the warfighter's economic objectives than military logisticians and contracting officers. Even as COIN doctrine is more fully developed at the strategic level, logisticians can make a key contribution at the tactical and operational level to its successful implementation today. This is true of logisticians across all services—the commonality in knowing how to manage inventory, a repair facility or a transportation network applies to COIN economics equally, regardless of uniform.

### **DEFINITION OF COUNTERINSURGENCY ECONOMICS**

Counterinsurgency economics in places like Anbar and Helmand are less focused on national macroeconomic indicators such as growth in GDP or a positive balance of trade than on immediately creating jobs and economic activity for the local population. In most cases, regardless of location, this is summarized for the local population as: Are there jobs at the local employer, be it a shop or a small factory? Is there a market for crops? Is life improving generally? As with tactical operations, this “fight” occurs factory by factory, village market by village market, and the military's ability to affect the fight is directly proportional to its capacity to deploy talent and funds directly to the area we want to impact, and continue that support until the area is secure.

Whether it is in business or military strategy, a key objective is always to make the other side fight on your terms. The United States and its allies have no peer in providing the best standard of living the world has ever known, and our advantages in this area compared to the Mahdi Army or al-Qaida are overwhelming. To win, however, we need to convert this capability into the actual delivery of measurable results quickly for the population we are working to influence.

Like the dramatic character who discovered that he had been speaking in prose all his life, logisticians have unwittingly prepared for this mission throughout their careers.

1) They may have operated working capital funded activities, which are as close to a business as one can find in the government; run maintenance operations; balanced inventory and demand; and developed a deep understanding of markets as a standard part of contracting market research. These skills are directly transferable to working with a machine shop in the Euphrates Valley, or helping a farming co-operative price their product and figure out the transportation system to get it to market in Kandahar. As a result, military logisticians and contracting officers are highly valued by the commercial community, and often run similar functions post-retirement.

2) Senior logisticians are likely to have business degrees, to have attended the Industrial College of the Armed Forces, or have other business training in fields such as accounting and project management. In addition, given the large number of logisticians in the Guard and Reserve, logisticians bring applicable skills from their civilian lives. We have met reservists who were senior executives in companies large and small, or had civilian experience in technical or professional fields with direct applications in theater. Experienced professionals bring immediate credibility and faster results in working with their counterparts in post-conflict environments, and the logistics community is full of such people.

3) Contracting officers and logisticians control, directly and indirectly, a significant amount of spending that can be targeted to improving economic conditions on the ground. They are responsible for procuring transportation, life support services, construction materiel and a host of other items which are increasingly bought locally. This not only supports COIN objectives, but, in many cases, it delivers better value for the government dollar, avoiding the significant costs and risks of shipping bulky material long distances, or avoiding ancillary costs associated with bringing third country nationals to the AOR.

Furthermore, international companies play a key role in economic activity at the local level. We hosted hundreds of foreign business people in Iraq and Afghanistan, including visitors from such household names as Case New Holland, Daimler, GE, Google, Honeywell, Hyatt, Kate Spade, and Microsoft, along with leaders in raisin production and carpet retailing, and found them willing to take risks for appropriate returns in emerging markets. The people in the DoD who best understand the process, ethics and economics of dealing with corporate partners are logisticians, and they have the local knowledge and integration with the military support structure to introduce potential foreign partners to post-conflict countries.

4) In many cases, as hard as it seems at the time, the easy part is building the clinic or local electric utility. A major challenge comes in ensuring that it remains operational after the thrill of the ribbon-cutting wears off. While no one will mistake a well in Afghanistan for the Joint Strike Fighter, the process of thinking about sustainment for both programs has similar elements. Concepts such as provisioning spare parts, developing maintenance routines and figuring out sustainment strategies are second nature to all of our logisticians. Applying these skills wisely could prevent Iraq and Afghanistan from becoming a land of broken toys.

We have seen logisticians applying their considerable skills to the economic fight today. For example, logisticians have partnered with local business to transfer waste material to them, which not only provides a more cost-effective means of disposal for the coalition, but it also gives the business an input which allows it to increase employment. Logisticians have used their private sector backgrounds in areas such as chemical engineering and metal recycling to work with factories in Iraq. Logisticians deployed and deploying today can draw on what their predecessors have accomplished.

## ***WHAT CAN BE DONE TODAY IN COUNTERINSURGENCY ECONOMICS***

Employing our considerable economic power in war zones is an emerging doctrine, and much remains to be done in developing policy, training and fully fleshing out concepts such as ‘money as a weapons system.’ In the meantime, based on our experiences in Iraq and Afghanistan, here are some guidelines to delivering value to our warfighter customers quickly:

1) First, the logistics community must make sure the COIN mission does not interfere with, and, where possible, complements traditional supply chain functions. Restarting a factory that processes local legumes cannot be to the detriment of providing beans (or bullets) to our forces. Frequently, however, using local companies not only builds valuable relationships and employs people who might otherwise be enticed to collaborate with the other side, it also provides better value for the U.S. government by delivering products and services at a lower total cost.

2) Study counterinsurgency doctrine and practice. This is the fight the warfighter customer is fighting now, and there are few better ways to succeed in business than knowing your customer. Then, learn how this doctrine is being applied locally. Where are clear/hold/build campaigns going on? Is there a re-integration effort underway? Is there a key employer, or key clan or tribe in the area? What’s the commander’s strategy to “influence” the local leadership?

3) Use the significant power of the logistics enterprise to support that strategy. A logistician familiar with COIN strategy can channel contracting to local businesses immediately after initial operations, as we have seen done during the surge in Iraq; identify viable businesses in the impacted area; ensure that CERP funded projects are sustainable; and use the disposal authority available to forces in theater to jumpstart local projects with donations of equipment and material. In a COIN operation, popular goodwill has a limited shelf life, and logisticians can help commanders deliver results before that goodwill runs out.

4) Apply end-to-end supply chain thinking to solve business problems. To augment the old saw about “Give a man a fish and he eats tonight, but teach a man to fish and he will eat all his life”—help the local fishermen find a better way to get their product to market and you’ve developed a business which will feed hundreds of people for a long time.

5) Get to know and work with your allies. Civil affairs teams and USAID personnel, going on 10 years of overseas contingency operations, are spread thin, and must cover governance, rule of law, social programs, health and other issues in addition to economics. The logistician, in many cases, is the person on the ground with the greatest knowledge base, and certainly the greatest resources, to



Military logisticians supporting counterinsurgency operations play a vital role, especially when engaging the local civilian population. [Photo courtesy of DoD]

assist and nurture new businesses. Furthermore, counterinsurgency economics is tremendously labor intensive. Simple meetings involve hours of planning and travel, are always too short, and are subject to disruption and postponement. The need for interpretation and the “lost in translation” effect can double or triple the time required to conduct business. Under these conditions, the more help the better.

6) Capture lessons learned. Learning what worked and what did not, and under what conditions, is key to future success. Logisticians need to systematically capture and share what they learn about the emerging field using what social networking and informal communication offers now. There is a tremendously steep learning curve in learning how to do business in what the investment community calls “frontier” markets such as Iraq and Afghanistan. Today’s logisticians are fortunate enough to build on the work of their predecessors with a wealth of knowledge about best practices in contracting, material management and maintenance. The same information sharing, albeit informal, is a necessary but not sufficient condition for success in counterinsurgency economics.

## ***CONCLUSION***

After many years of asymmetric conflict, the military has learned a tremendous amount about counterinsurgency economics. Building on its position as the people at the pointy end of the spear who best understand running a business and the life cycle of a public works project, and integrating that knowledge into counterinsurgency practice, will allow the logistics community to write another proud chapter in its outstanding history of warfighter support. ★

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*Gerry Brown worked with the Task Force for Business and Stability Operations in both Iraq and Afghanistan from 2006 to 2010 and is currently with the Office of the Secretary of Defense. Major General Darryl Scott, (USAF Ret) was the commanding general of the Joint Contracting Command - Iraq and Afghanistan from 2006 to 2008 and has been in private industry since.*

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# Knowledge is Power

**EDUCATING LOGISTICIANS TO EMPOWER THE WARFIGHTER.**

**By MAURA MCCARTHY  
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When Secretary Gates launched his efficiencies initiative last May, aiming to save \$100 billion over the next five years, he selected Under Secretary of Defense for Acquisition, Technology & Logistics Ashton Carter to spearhead the effort. In his September 2010 Memorandum for Acquisition Professionals, “Better Buying Power: Guidance for Obtaining Greater Efficiency and Productivity in Defense Spending,” Carter noted that “a capable, qualified, and appropriately sized acquisition workforce will be key to achieving efficiency.” The education and professional development of the military logistician becomes an even greater priority then, for it is they that must “do more without more” while effectively and efficiently supporting the warfighter. The following military education commands and civilian institutions offer programs to educate and develop the professional logistician.

## **DEFENSE ACQUISITION UNIVERSITY, LOGISTICS & SUSTAINMENT CENTER**

The Logistics & Sustainment Center at Defense Acquisition University (DAU) provides the 17,000 members of DoD’s life cycle logistics workforce the training mandated by the Defense Acquisition Workforce Improvement Act (DAWIA) as amended, and implements DoD instructions and policy.

Director Bill Kroben explained, “Our logistics portfolio focuses on product support across the life cycle—the things it takes to

develop, field, support, sustain and dispose of systems—combining both traditional ‘acquisition logistics’ as well as long-term product support and sustainment planning and execution ... We also seek through a variety of means, such as a program we call Core Plus, to facilitate and encourage students from other functional disciplines to better understand logistics processes, practices and principles, as well as to encourage life cycle logisticians to broaden their understanding of other disciplines in the acquisition community such as systems engineering, cost estimating, program management and contracting, among many others.”

Additionally, DAU courses “infuse faculty members who are long-time practitioners in the art and science of logistics, as well as a dynamic mix of Army, Navy, Marine Corps, Air Force, defense agency, and even some industry students ... It’s a great opportunity to learn from each other, and to broaden their understanding of how other organizations and people of different backgrounds can solve the same problem” Kroben said.

## **INSTITUTE FOR DEFENSE AND BUSINESS**

The Institute for Defense and Business (IDB), a nonprofit independent research and education institution created by UNC-Chapel Hill and the state of North Carolina, provides participants a shoulder-to-shoulder learning experience, bringing together the joint mili-

tary community, all services, government agencies and the private sector. IDB offers programs for logistic professionals at different career levels and programs designed to fill identified gaps in logistics education. The Center of Excellence in Logistics & Technology offers two executive education programs and an MBA, integrating military, private sector and academia; Log21 is tailored to early-career military and civilian logisticians; Depot and Arsenal Executive Leadership Program serves to enhance the business acumen of commanders assuming control of an industrial facility that usually has a predominantly civilian workforce.

Of IDB’s Seminar on Logistics Cooperation for Stabilization and Reconstruction (LCSR) IDB President Mark Cramer said, “LCSR addresses a real gap in preparing military logisticians to interact with logisticians from other parts of government or the private sector. Although a tremendous amount of practical knowledge was gained through efforts in Iraq and Afghanistan, as well as through major disaster relief efforts like in Haiti, there’s been very little institutionalization of knowledge gained or any real educational efforts to bring together all the communities and organizations that need to work together.”

IDB courses prepare the logistician to deal with a whole-of-government logistics environment. Cramer noted, “The days where an Army logistician needed to learn how to work with just Navy logistics people

are over ... You need to know a much broader spectrum of engagement across the interagency, or the whole of government, but really much larger than the whole of government as it involves other assets of the nation such as the private sector and the NGO community.”

### **AMERICAN PUBLIC UNIVERSITY SYSTEM/AMERICAN MILITARY UNIVERSITY**

APUS offers a BA and MA in transportation and logistics management and a Graduate Certificate in logistics management, which are all conducted online, enabling its student body—comprised of more than 50,000 students from 100 countries and employed by every branch and specialty of the military, as well as other federal and state agencies—to earn their degree from any corner of the globe.

Highlighting the technological challenges military logisticians face, Dr. Oliver Hedgepeth, transportation and logistics management (TLM) program director and Robert Jaffin, professor and former TLM Department chair explained, “American Military University’s transportation and logistics management courses specifically address the technological issues and problems facing the military in RFID technology ... In addition, our TLM program focuses on the convergence of commercial and military best practices, including cargo security management, military management and acquisition, port security and others.” As the logistics profession has evolved, a new emphasis has been placed on education. “Today, organizations demand more focused education for their logisticians. ‘On the job’ training is no longer sufficient ... We blend educational theory and practical experiences to teach trends within the industry today and to develop new, innovative tactics and visions for the future,” Hedgepeth and Jaffin said.

### **THE CENTER FOR SUPPLY CHAIN RESEARCH IN THE SMEAL COLLEGE OF BUSINESS AT PENNSYLVANIA STATE UNIVERSITY**

The Center for Supply Chain Research in the Smeal College of Business at Pennsylvania State University aims to “create a community of practitioners and scholars who are interested in furthering the field of supply chain management,” said Executive Director and Senior Research Associate

Skip Grenoble. “A little over 10 years ago we were asked to facilitate a month-long program where the Marine Corps brought in 20 of their top logisticians and spent a month learning about the private sector and things that could help them in going through a very vigorous improvement cycle of the modernization and transportation effort ... this eventually led to the creation of Marine Corps Logistics Education Program [MCLEP], which we’ve been doing for over 10 years,” explained Grenoble.

Twice a year the Marine Corps sends 55 logisticians to participate in the two-week long MCLEP, which focuses on integration of inventory management, transportation and distribution, order management, and maintenance and aims to enhance the effectiveness of logisticians operating in a joint environment. For students who have completed MCLEP or other tailored programs, Penn State offers multiple options to complete a certificate program in supply chain management and supply chain operational excellence.

### **AIR FORCE INSTITUTE OF TECHNOLOGY**

The Air Force Institute of Technology School of Systems and Logistics offers more than 80 professional continuing education courses. Major Lisa Ulshoffer, acting head of the Logistics department, explained, “Our courses are designed to cover the entire spectrum of a logistician’s career. Starting with a live course teaching basic logistics, to our live course teaching combat logistics focusing on the joint environment, to our seminar at the FGO level bringing in guest speakers covering topics at the operational/strategic level, then you move to the senior courses, both of which are seminars with guest speakers covering distribution and strategic level issues concerning logistics.

In addition, we have a series of 11 Web-based courses covering the eLog21 transformation of Air Force logistics.” Working within a constricted defense budget, Ulshoffer acknowledged that “the fiscal reality of the DoD is going to be tough. Requirements for logistics education, especially theater centric, is growing but is always considered low hanging fruit. We are working with all leadership to help them appreciate that though education doesn’t provide the immediate visible skill that training can deliver, it is essential to the long-term development of our logisticians.”

### **CENTER FOR JOINT STRATEGIES AND LOGISTICS**

The Center for Joint and Strategic Logistics at the National Defense University was established in October 2009 to shape the development of logisticians capable of meeting the complex challenges of the current and future operational environments. One of the key objectives of the center is to assist the Joint Professional Military Education institutions across the Department of Defense to develop their curriculum and work with the service staffs to enhance the teaching of joint logistics at the schools within the services.

The center’s director, retired Lieutenant General Claude “Chris” Christianson, emphasized the importance of these efforts in order to develop a professional force capable of finding and implementing creative and effective solutions to challenging and ill-defined problems. “Unlike the past, where we thought we be successful staying inside a box that we described, in the future the box could have no definition...we have to create a group of leaders who can deal with that type of uncertain environment. The uncertainty about the future demands that we focus our developmental efforts on those skills and attributes in leaders that will enhance their chances of success.”

### **LOGISTIC OFFICER ASSOCIATION**

A professional organization comprised of over 3,200 military and civilian logistic professionals, LOA’s mission, according to LOA president Colonel Doug Cato, “is to provide professional development to our members on the logistics spectrum. This professional development begins at the chapter level and continues through scholarly articles in the quarterly *Exceptional Release* journal, and the capstone event each year is our professional development conference.” Additionally, LOA supports those pursuing a career in logistics through their scholarship program, which was expanded in 2011 to include those pursuing bachelor’s and master’s degrees as well as high school students. Heading into its 30th year, Cato envisions “LOA becoming more of a logistics think tank, providing a ‘brain trust’ to solve logistics problems, while educating our members on the best logistical practices. It’s important we embrace our industry partners as we move forward, as many of those are retired military logistics professionals with a wealth of knowledge.”

## UNIVERSITY OF TEXAS AT DALLAS

The University of Texas at Dallas, a partner with Army Logistics Management College, offers a Master of Science in supply chain management designed to equip military logisticians with the skills needed to operate in a lean environment as well as experience interfacing with civilians. Modern logisticians face a constantly changing environment, said Shawn Alborz, director of operations management at UTD, and UTD's curriculum provides logisticians a holistic and full education. "Education in Lean Six Sigma, project management and SAP gives leaders the tools to communicate with large civilian corporations for sourcing and the ability to make the military supply chain more cost-effective. Because of the new generalized nature of military logistics officers, they are expected to have a good understanding of the entire military supply chain, not just parts." UTD addresses these challenges and "continues to put itself at the forefront of these

changes by bringing in industry experts to instruct and develop curriculum, providing coursework that allows students to excel in a more sophisticated environment, and by providing an environment that promotes supply chain/logistics leaders to share knowledge, which ultimately make our graduates competitive leaders," noted Alborz.

## NORTH DAKOTA STATE UNIVERSITY

North Dakota University offers a master's in managerial logistics (MML) that is a non-disquisition degree, addresses all 12 points of the National Logistics Curriculum outlined by Army Logistics Management College, and targets career military officers, DoD civilians and other logistic professionals. Director Denver Tolliver highlights the benefits of MML and said, "Most of the typical logistician's service time prior to entering the MML program has been spent at the tactical level, where execution has been based more on art than

science. By teaching the science of logistics, the MML program enables military logisticians to grow in their careers and operate at multiple levels and environments."

North Dakota plans to expand its program to include officers from all branches, not just the Army, as well as contractors and private sector students. "In the future, the MML will emphasize joint and global collaborations ... We intend to expand our global horizons through partnerships with universities in other nations, starting with a planned collaboration with El Jadida University in Morocco in 2011 to 2012. These international connections will enrich the learning experiences of military logisticians by broadening their perspectives and providing detailed case study information." ★

For more information, contact *MLF* Editor Jeff McKaughan at [jeffm@kmiimagroup.com](mailto:jeffm@kmiimagroup.com) or search our online archives for related stories at [www.MLF-kmi.com](http://www.MLF-kmi.com).

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# Unmanned Haulers

**REDUCING THE RISK OF RESUPPLY.**

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Cargo unmanned aerial vehicle concepts have been explored since the 1990s, but the United States military's recent push toward deploying cargo unmanned aerial systems has sprung from the conditions it now faces in Afghanistan. Poorly developed roads over forbidding terrain has made resupplying remote forward operating bases very difficult. Even more so, the rash of improvised explosive devices (IEDs), which have exacted unacceptable numbers of casualties from the personnel manning resupply convoys, has led to the cry—get the trucks off the road!

To that end, the Marine Corps has awarded contracts to teams offering aerial unmanned platforms with an eye toward selecting one within the next few months and deploying the vehicle to Afghanistan soon thereafter. But the move toward unmanned cargo systems is not limited to that program. The Office of Naval Research, for example, is funding projects that push research in this area. Private industry is also making advances, while efforts are also underway toward integrating unmanned ground vehicles into resupply operations.

"We envisioned a real need for this capability when we first started working on it in 2007," said Jim Naylor, director for business development for K-Max at Lockheed Martin. "We saw that warfighters would have to operate on limited potential routes to resupply points in remote areas. We also saw that they were being plagued by IEDs and saw the unmanned aerial system as a way to save lives and get warfighters out of harm's way."

The K-Max is a helicopter developed by Kaman Aerospace Corporation, whose capabilities were enhanced in partnership with Lockheed Martin. It is one of the platforms currently being considered by the Marine Corps.

The requirements identified by the Marine Corps call for an unmanned aerial resupply platform that is controlled from

the ground. The Office of Naval Research is investigating pushing that technology to allow for greater autonomy for the platform.

"ONR is investigating and developing technologies to support autonomous aerial cargo delivery to distributed forces in combat," said John Kinzer, an ONR program officer. "We are responding to capability gaps that have been identified through numerous studies of Marine Corps distributed operations and from reports of current operations."

In August 2009, the Marine Corps Warfighting Laboratory awarded contracts to the Boeing Company and to Team K-Max, consisting of Kaman Aerospace and Lockheed Martin, to support a Marine Corps assessment for an unmanned aerial system to deliver cargo delivery in the austere and mountainous environments of Afghanistan.

Referred to as the Immediate Cargo UAS project, the effort is intended to demonstrate the state of industry's current technological capability. Initial observations of the two platforms under consideration—Boeing's A-160T Hummingbird and Kaman's K-Max—took place at Dugway Proving Grounds in Utah in December 2010 and January 2011. Further assessments will be taking place before the winning platform is ultimately chosen.

The purpose of this effort is to expedite the deployment of viable technologies to the combat zone by delivering supplies from a main operating base to a forward position. The fielding of a cargo unmanned aerial system can also supplement existing aviation resupply efforts conducted by manned platforms.

The demonstration evaluated the abilities of the A160T and the K-Max to deliver at least 2,500 pounds of cargo in a six-hour period to a beyond line-of-sight location 75 nautical miles from a starting point. The Marine Corps' desired capability is to deliver 10,000 to 20,000 pounds of cargo during a 24-hour period over a

round trip distance of 150 nautical miles.

The two platforms under consideration are a study in contrasts. The A160 was developed as an unmanned multi-purpose platform. The K-Max is an adaptation of a manned system that has been hauling cargo in the commercial world for years. The A160 boasts high speeds and a smaller payload capacity. The K-Max has a greater payload capacity and was designed to be slow and steady.

"The A160 was designed from the ground up to be unmanned," said Ernie Wattan, Boeing's A160 program manager. "It brings fixed-wing performance to a rotor craft. It can operate in an austere environment with no takeoff runway. It is the world record holder for endurance in its class."

The aircraft is capable of speeds of 142 knots, a level that Boeing is trying to raise to 165 knots. The 2,500-pound aircraft has a maximum takeoff weight of 5,500 pounds, which Boeing is now trying to expand to 6,500. The A160 also boasts "a very strong fuselage and a very strong rotor system," said Wattan. "We are able to maximize the performance of the engine by running at lower RPMs and getting higher speeds." The multi-mission A160 has also performed ISR work.

Lockheed Martin was looking for an unmanned aerial platform to develop for logistics purposes when it came upon the K-Max. "We chose it because it is perfect for this type of mission," said Naylor.

Originally developed as a manned platform, the 6,000 pound K-Max can lift its own weight at sea level and 4,000 pounds at 15,000 feet. With maintenance costs of \$1,000 per hour, "it is low cost to operate," said Naylor. "We integrated our mission management and ground control capabilities to the K-Max to make it more robust."

"Kaman has been working on our unmanned system for a number of years but our ground control station was rudimentary," said Terry Fogarty, Kaman's general manager for unmanned aircraft

systems. “Integrating with the Lockheed Martin allowed us to improve the software and to add more components to have a redundant system.”

The aircraft’s intermeshing main rotors and lack of a tail rotor slows the speed of the aircraft—it maxes out at 100 knots unloaded and 80 loaded—but makes it easier to hover and to lift an expanded payload without a hydraulic system. The platform has extensive experience in the commercial world, most notably in the logging industry.

The K-Max’s cargo is held by a six-foot line, at the end of which is a commercial cargo hook or a carousel equipped with four separate hooks. “The purpose of the carousel is to load four distinct loads and drop at them at different locations,” said Fogarty. “It is a proven technology used in commercial applications today.

“This is a very low-cost platform because that is what the commercial market requires,” he added. “There is nothing fancy about it. We call it an unmanned aerial truck.”

The Office of Naval Research is working on a next generation vertical takeoff and landing (VTOL) air vehicle technology development in conjunction with the Army-led Joint Multi-Role Technology Capability Demonstration program. “ONR and NAVAIR are participating in this program,” said Kinzer, “which will explore concepts, conduct trade studies, and develop and demonstrate technologies for next generation rotorcraft.”

ONR is also planning a program in advanced autonomous capability for cargo unmanned aerial systems, called autonomous aerial cargo/utility system (AACUS), to begin in fiscal year 2012 and run through 2016. “The goal of this program,” said Kinzer, “is to develop and demonstrate revolutionary intelligent autonomous capabilities for a future aerial cargo and utility system that can provide timely, affordable, reliable and shipboard-compatible supply, retrograde and casualty evacuation. AACUS will use agile development processes with frequent laboratory and flight demonstrations.”

Lockheed Martin and Kaman Aerospace are already working on autonomous capabilities for the K-Max. “It can be programmed to fly from point A to point B,” said Naylor, “and can be reprogrammed en route to do an alternate route. It can

take off and land autonomously and can complete a mission to a GPS way point, hover, put down and release a load, and continue on its flight path.”

Besides autonomy, ONR is also exploring a high-speed vertical takeoff and landing air vehicle, according to Kinzer. “As part of the high-speed VTOL effort, two vehicle concepts have been explored,” he added, “a fan-in-wing configuration with Northrop Grumman, and mono-tilt rotor with Baldwin Technology.” Follow-on small scale development efforts for these configurations are not currently funded.

Baldwin Technology’s air vehicle concept involves carrying the cargo suspended below the aircraft. “This has no effect on stability and maneuverability during flight,” said Doug Baldwin, the company’s president. “It does provide a smaller size, lower weight and more fuel efficient aircraft and that translates into lower costs.”

The lack of funding has stymied Baldwin’s efforts somewhat, but he continues to invest in the concept. “We know we can build a vehicle that will fly,” he said. “We need to understand if it is operationally suitable. Can it carry supplies to the point of need and return back to the ship?”

Baldwin’s current efforts are focused on vehicle autonomy. “There has been some breakthrough work on helicopter autonomy which we have brought in house and integrated into our simulation environment,” he said. “We have demonstrated these methodologies on a small remote control aircraft.”

Also on the drawing boards is an autonomous unmanned ground vehicle, called the Gladiator, developed by Carnegie Mellon University and BAE Systems North America. The first tactical unmanned ground vehicle, it was developed for the U.S. Marine Corps under a \$26.4 million system development and demonstration contract from the U.S. Department of Defense’s Joint Program Office/Robotic Systems. Gladiator’s proponents anticipate that it could be deployed for a range of missions, including combat resupply, and also for search-and-discovery missions in hostile areas, urban battlefields, or minefields.

“Carnegie Mellon provided the robotics technology and overall design for the Gladiator, while BAE Systems and its partners manufactured the vehicle,” said Dimitrios Apostolopoulos, a senior

systems scientist at the Carnegie Mellon Robotics Institute.

Gladiator is a tele-operated, semi-autonomous vehicle that users can control through an interface display. “Gladiator is a smaller scale platform about the size of a golf cart,” said Apostolopoulos. “It is easily configurable and could be used for logistics support. It can carry quite a bit of payload,” on the order of 900 to 1,100 pounds.

Work on the Gladiator project began in 2002. Five platforms were delivered for evaluation in 2008. Since that time, Carnegie Mellon has been providing maintenance and technology support, but not much has happened in the last two years. “Interest appears to go up and down,” said Apostolopoulos.

“We thought the technology was well-conceived. It was not revolutionary but it did make some key advances,” he added. “One was that it could be adapted to multiple missions. Another was that the software was designed with safety in mind.”

The sensor and software equipped on the Gladiator prevents the vehicle from colliding with the Marines it is accompanying. If it is carrying a weapon, there are multiple controls in place to prevent misfiring.

Carnegie Mellon has also developed the software to make Gladiator more autonomous. Converting the tele-operated vehicle to an autonomous platform would require the addition of control software.

“I would like to see Gladiator deployed in the field,” said Apostolopoulos. “It provides good mobility and could be useful for logistics. It has excellent potential.”

As for the Marines’ current efforts, Boeing’s Wattan believes that “once they get the capability in theater, we’re going to be hard pressed to keep up with the demand.”

Wattan thinks there will be demand for the A160 elsewhere as well. That is why Boeing has actually set up a production line for the A160 in Mesa, Ariz., and has already turned out six platforms. ★

For more information, contact *MLF* Editor Jeff McKaughan at [jeffm@kmmidiagroup.com](mailto:jeffm@kmmidiagroup.com) or search our online archives for related stories at [www.MLF-kmi.com](http://www.MLF-kmi.com).



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**Ground Vehicle Reconstitution Programs**  
**Northrop Grumman Corporation**

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**Q: Please provide some background on Northrop Grumman Technical Services and the company's work with DoD in the logistics arena.**

**A:** Northrop Grumman has more than 70 years of experience in logistics support services and nearly a half-century in range operations. We are a recognized leader in the global systems logistics and support services marketplace.

Currently, we provide tactical vehicle maintenance and sustainment at both OCONUS and CONUS facilities and training centers. As a result, we have earned a strong reputation of excellent performance in this business area. At the National Training Center [NTC], Fort Irwin, Calif., we deliver a full range of logistics support to include operating a maintenance and repair program for more than 3,800 tracked and wheeled vehicles, basic issue items, communications equipment and weapons needed to support Army brigade combat team pre-combat deployment desert training. At the Joint Readiness Training Center [JRTC], Fort Polk, La., we deliver a wide variety of logistics services supporting Army brigade combat team pre-combat deployment training.

We maintain communications equipment, ground combat sensors and electronics, weapons, and more than 3,700 tactical vehicles. Internationally, as the prime contractor, we have been providing the logistics and support services at U.S. military bases within the Republic of Turkey and Spain. In Saudi Arabia, Technical Services provides direct and general support maintenance capability for more than 1,100 light armored vehicles. Most of these vehicles see hard service in a desert training

environment. These are just some examples of where we provide these services. There are other CONUS and OCONUS locations where we currently provide expanded support services including unmanned systems in Europe, the Pacific and the CENTCOM AOR.

**Q: As a major player in the military logistics arena, how is Technical Services helping DoD meet current key logistics objectives in this budget environment?**

**A:** The military services, especially the land forces, have a significant and growing problem in maintaining the current inventory of vehicles and meeting requirements as the result of the high operational tempo environment. The problem is further complicated by declining budgets. We understand the problem. We believe we have demonstrated a proven capacity to reset the equipment at the Army's CONUS training bases and at OCONUS facilities.

This flexible and agile reset capability, rather than the traditional method, accommodates services' requirements to cut costs in the current budget environment. Our capability to perform both field-level reset and having key public and private sector partners to perform sustainment-level reset based upon the most cost-effective business case also allows for modernization of the vehicles.

When appropriate, Northrop Grumman Technical Services can provide our customers a reset alternative at field sites for less cost than shipping the vehicles to the depot for minor modernization. We have also proven that we can accomplish this mission in a fixed-price environment, following the guidance issued by Under Secretary of Defense for Acquisition, Technology and Logistics Ashton Carter. The Department of Defense can significantly reduce its risk, save end-strength and

secure budget predictability in a fixed-price environment.

**Q: Does Technical Services have the full range of capability described above? If not how do you gain that capability?**

**A:** A major benefit we have is that we can collaborate and reach back to the entire Northrop Grumman enterprise to ensure the capability needed to meet our customers' requirements is available. While Northrop Grumman Technical Services does provide a broad service capability and competitive flexible pricing models, when required, we have a deep bench of capabilities, experience and technologies located throughout the corporation. In the area of ground vehicle sustainment, the greater Northrop Grumman Corporation can provide both logistics services and C4ISR capabilities, adding significant value to our users.

We also partner with other corporations, depots and small businesses to provide any needed capability. We will deliver the full package of capabilities.

Most importantly, we always partner with the local commander whom we support. We provide a high-operational ready rate for equipment needed to accomplish the commander's mission. At both JRTC and NTC, we exceed the Army's standard, enabling the local commander to meet the mission with fewer resources. Program performance is our top priority!

**Q: How has NGTS positioned itself and prepared for 2011?**

**A:** We have focused our resources on the fielded logistics market, which includes services that support customer missions where ever they are located. These services include combat vehicle fleet management and sustainment, equipment, electronics, and weapons maintenance as well as supply and support of operations. We employ innovative solutions to meet our customer's requirements today while always focused on tomorrow.

Our mission is to always deliver the services that we promised on time and on cost. Our valued customers deserve nothing less. ★

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