ARMY
AL&T

January–March 2010

UNITED STATES ARMY
ACQUISITION CORPS

THE UNMANNED AIRCRAFT SYSTEMS PROJECT OFFICE
MEETS ACQUISITION CHALLENGES

Unmanned Aircraft Systems Project Office

This issue showcases the magnificent work being accomplished by Program Executive Office Aviation's Unmanned Aircraft Systems Project Office (UAS PO) in providing our warfighters with valuable intelligence, surveillance, and reconnaissance capabilities and changing the face of modern warfare. UAS have become the weapon of choice for Army commanders in Iraq and Afghanistan. These so-called "flying binoculars" save lives and keep the troops out of harm's way.

The Army UAS story is a recent one. In 1999, a single Hunter system was sent to support U.S. troops in the Balkans, becoming the first Army UAS to support real-world operations. A year later, the UAS PO consisted of 70 people with an annual budget of $60 million. Today, the PO manages more than $1 billion annually with more than 1,100 unmanned aircraft in support of *Operations Enduring* and *Iraqi Freedom (OEF/OIF)*, and this demand for unmanned systems is continually increasing. It took the Army more than a decade to fly 100,000 UAS hours. It took us less than 1 year to fly the next 100,000 hours, and we fly more than that each year in theater. These systems operate 24 hours a day, 7 days a week, with multiple aircraft in the same unit operating simultaneously.

While commanders once viewed unmanned systems as expendable assets, they are now viewed as indispensable in extending battlefield awareness and expediting the engagement and destruction of targets. In accelerating procurement of UAS, Secretary of Defense Robert M. Gates told Congress earlier this year that, "UASs have become one of the most critical capabilities in our military. They give the troops the tremendous advantage of seeing full-motion, real-time streaming video over a target—such as an insurgent planting an IED [improvised explosive device]." Secretary Gates then highlighted the success of the Army's Task Force Odin in Iraq that resulted in a dramatic increase of full-motion video available to commanders. That success is now being replicated in Afghanistan.

The UAS PO has a number of success stories in meeting the rapid fielding of unmanned systems to the warfighter and meeting the urgent needs of battlefield commanders. The **Shadow** Tactical UAS, for example, is getting a longer wing to increase flight endurance by several hours, a software upgrade, and a much-sought laser designator to allow commanders and Soldiers to designate targets for precise munitions. The battery-operated **Raven** was fielded in just 20 weeks from funding. Weighing only about 4 pounds, it is a hand-launched and rucksack-portable unmanned system that provides Soldiers a live video feed both day and night with Global Positioning System tracking and still-image capabilities. Modular, the entire system weighs about 40 pounds and can be distributed throughout the squad, which minimizes the amount of additional weight for each Soldier. Most warfighters agree that the Raven is "fun" to operate and "ideal" for Afghanistan's mountainous terrain.

In July, the Army deployed a so-called quick reaction capability of its Extended Range/Multi-Purpose (ER/MP) **Sky Warrior** UAS to two platoons in theater. This system is proving to be a very powerful tool for our commanders because of its ability to fly at 25,000 feet; employ a redundant, automatic take-off and landing system; and benefit from both satellite communications and a line-of-sight Tactical Common Data Link. In the future, the ER/MP will be the mainstay of the division/corps commander's battleset for land warfare operations.

Another area in the exponential growth of unmanned systems is the Army's expansion of the Video from UAS for Interoperability Teaming from a single battalion of AH-64 Apache attack helicopters to 10 additional Apache battalions and other aircraft, including the OH-72 Kiowa Warrior. More advanced manned-unmanned teaming systems will enable helicopter pilots to direct unmanned systems.

Supporting an Army at war is critical, both tactically and strategically. From a tactical standpoint, we are providing weapon systems—manned and unmanned—and equipment that our warfighters need to succeed in their current missions. As we meet our ongoing requirements, we are looking to the future to support an Army at war from a strategic standpoint. We are taking the lessons learned in *OEF/OIF* and putting in place a plan to meet future requirements better and faster. Our goal is to compress the concept-to-combat cycle significantly to meet the immediate and future needs of our warfighters as rapidly as possible. The UAS PO has a lead role in our efforts.

Let me close by extending my very best wishes to you all for a very happy and healthy new year. Keep up the great work!

Dean G. Popps
Army Acquisition Executive

ARMY AL&T

ACQUISITION, LOGISTICS & TECHNOLOGY

January–March 2010

Cover Story

Expedited Hiring Authority (EHA) Helps Manage Human Capital Needs
Dana R. Osborne

Page 2

Features

Departments

For more news, information, and articles, please visit the USAASC Web site at **http://asc.army.mil**. Click on the *Army AL&T* Magazine tab located on the bottom of the flash banner in the center of the page.

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

By order of the Secretary of the Army

GEORGE W. CASEY JR.
General
United States Army
Chief of Staff

Official:

JOYCE E. MORROW
Administrative Assistant to the Secretary of the Army
0934801

Expedited Hiring Authority (EHA) Helps Manage Human Capital Needs

Dana R. Osborne

A year ago, the Office of the Secretary of Defense (OSD) directed the insourcing of existing contracted personnel positions to civilian positions. OSD further delegated EHA for acquisition positions, a move that is allowing organizations to quickly fill shortages in specific category positions with highly qualified individuals. The following is a conversation with the Army Unmanned Aircraft Systems Project Office (UAS PO), which did not immediately embrace the new hiring process; once it did, however, the office leadership changed its perspective on EHA.

Tim Owings, DPM, UAS PO, briefs new employees about the UAS office operations and products. (U.S. Army photo by Marianne Higgins, CAS Inc., a wholly owned subsidiary of ITT Corp. (CAS/ITT) contractor supporting the UAS PO.)

From Skeptic to Supporter

The Army UAS PO, part of Program Executive Office (PEO) Aviation, Redstone Arsenal, AL, has a clear mission: to acquire and deliver world-class interoperable, affordable systems through excellence in program management. There is one part of the mission, however, that has always been difficult: acquiring the best talent available. The EHA delegated by OSD on Dec. 23, 2008, and granted by the Department of the Army on Feb. 4, 2009, did not see rapid adoption last spring. As the UAS leadership states, that is not because of problems, but because it is such a radically different hiring process.

"We absolutely were skeptical," said Tim Owings, Deputy Project Manager (DPM), UAS PO. "Frankly, we were concerned that we might not have all the flexibility the hiring authority appeared to offer and that we might be creating more problems than we were solving. We were very concerned about creating anarchy in the workforce. I admit our skepticism led to some complacency on our part. Eventually,

> As we began to learn more and understand the information better, we knew this would be the opportunity of a lifetime to secure the SMEs we needed and wanted.

the possibility of being able to reshape the human capital side of our organization in ways that have not previously existed proved too great to pass up. We finally decided to dip our toe in the water and see what would happen, and we are very glad that we did."

As a growth organization, UAS PO is challenged to find and rapidly field advanced technologies and to give warfighters the tools they need to react decisively. To meet the demand, the PO insourced 44 positions during the last 4 months of 2009 and is working to fill 30 additional positions by March. These new positions, as well as additional matrixed positions, will result in growing the organization from 323 to 467 employees in less than 18 months. "Looking back, with our rapid growth needs, we should have jumped

into the EHA process much faster," stated Owings.

Kathy Roe, Civilian Personnel Advisory Center (CPAC) Human Resources (HR) Specialist who serves PEO Aviation, is thankful the UAS PO eventually did jump in. She has worked with Owings to implement EHA since the insourcing announcement was made. "At first, we just couldn't seem to get PEO Aviation interested," said Roe. "It was difficult for managers to accept different hiring rules, but once they understood the flexibility of EHA, they were ready to push ahead quickly."

Communication With the Workforce

"As we began to learn more and understand the information better, we knew this would be the opportunity of a

Tim Owings, DPM, UAS PO, discusses hiring issues and an upcoming job fair with Sofia Beldsoe, PEO Aviation Public Affairs (PA) Specialist (left), and Kathy Roe, CPAC HR Specialist serving PEO Aviation (right). (U.S. Army photo by Marianne Higgins, CAS/ITT contractor supporting the UAS PO.)

Tim Owings, DPM, UAS PO, encourages others to use EHA for their hiring needs. (U.S. Army photo by Marianne Higgins, CAS/ITT contractor supporting the UAS PO.)

lifetime to secure the subject matter experts [SMEs] we needed and wanted," said Owings. The trick, he added, was communication. "We had to let our employees and contractor partners know exactly what we were doing. Every step along the way, we did what we could to educate the workforce so members wouldn't worry that the positions we wanted to convert from contractor to government would result in job losses. That fear did exist and we learned that we were a little late in putting the fear to rest."

"The biggest challenge, from my perspective, was educating the workforce," stated Roe. "We've never done this before and people feared for their livelihood, so we had to expedite the education component."

Because a few rumors surfaced, the Public Affairs Office (PAO) expedited the strategic communications plan designed to address all major audiences: management, employees, prospective employees, contractors, and congressional representatives. "In designing the plan, we put ourselves in the employees' place, because that's who we are affecting," said Sofia Bledsoe, PEO Aviation PA Specialist. "A Web site with details that included a mechanism for asking questions was launched to make EHA implementation as transparent as possible. We still see questions trickle in, so we know people are seeking information when it is relevant for them to do so."

To add to the education component of the plan, the UAS PO held town hall meetings, published information in internal newsletters, and kept an open door policy for anyone who had questions. Following the advice of the Office of Public and Congressional Affairs, Owings said he followed the "one voice" message plan. "Job information is a subject that needs to be overcommunicated," said Owings. "People worry and may listen to some negative voices that exist, so to counteract that you have to ensure everyone

in management is on the same page. A singular message has to go to employees as well as to contractors and their leadership. Individuals or companies may not agree with what you're doing, but they will appreciate that you are honest and consistent in how you are keeping them informed."

Congressional representatives for the Redstone Arsenal community are heavily involved with the many DOD organizations and federal contracting companies that make up the area's economic base. "Because of the close relationships that people here have with members of Congress, a few began calling Washington, DC, worried that jobs might be cut, and we saw an uptick in congressional inquiries," said Owings. "We learned that we could have been out in front of the education piece much earlier."

"It is critical to make sure you have thought through everything, from the perspective of all key audiences, before moving ahead with any information publicly," said Bledsoe. "The subject matter—jobs—is always a sensitive one, and there will always be issues no matter how well prepared you are."

> Creating common HQC for the vacancy announcements has been great for streamlining the hiring process.

"We didn't do everything perfectly," said Owings. "But overall, we believe we did well and are still doing a very good job of communicating and executing our plan, thanks to this new process."

EHA Process

According to Roe, the use of common job descriptions across the PEO enhanced the EHA process. Different program managers were able to quickly identify and agree on common Highly Qualified Criteria (HQC), resulting in one announcement and one referral to all managers with vacancies. This allowed candidates to be considered for multiple opportunities with one résumé and could result in multiple job offers.

When a job posts, the resulting pool of résumés is available for up to 90 days according to the EHA. Similarly, in traditional hiring processes, the résumés are available for up to 6 months. This allows hiring managers to consider any résumés already collected if another position opens up during that period. This practice has worked very well for PEO Aviation. "Creating common HQC for the vacancy announcements has been great for streamlining the hiring process," said Owings.

"The HQC must be technical in nature," added Roe. "Also, it should be generic enough to attract a good pool of candidates from within both government and industry, but specific enough to meet the needs of management."

Once the announcement closes, the qualifications review process starts at CPAC. Engineering positions are designated by the Office of Personnel Management as professional positions and, as such, require an engineering degree. At management's request, CPAC can review résumés received from the EHA announcement for this requirement and only refer to

management those résumés that meet this requirement. The hiring managers then screen all applicants against the HQC they developed.

"In our case, the HQC set the floor of the qualifications," stated Owings. "Because we have a lot of specialized positions, we use a panel of SMEs to compare the résumés against the HQC and then we go a step further to compare them against our specific criteria. We like to determine if each screener is interpreting each résumé's data similarly so that no position hinges on the opinion of just one person. Part of our screening criteria is that we look for escalating career responsibilities and sometimes that information doesn't just jump off the résumé. That's where the value of face-to-face interviews comes in, which we conduct by panels."

Last fall, the UAS PO participated in a job fair hosted by PEO Aviation. "By combining both the job advertisements with the job fair, we felt we were casting the net as wide as possible to capture the best applicants available, and we will certainly repeat that process in the future," said Owings.

"The EHA has been the enabler for us to accomplish what we need to do; it really has changed the dynamic for us in terms of hiring," concluded Owings. "My recommendation to those who have not yet taken advantage of EHA is to take the plunge. The benefits are there. Otherwise, those highly qualified applicants will land in an organization that isn't yours."

DANA R. OSBORNE is the Acting Chief of the Resource Center, UAS PO, overseeing the new employee welcome process, events, and strategic communications. She holds a B.A. in business administration and has 18 years of government service, all within the UAS PO. Osborne is Level III certified in life-cycle logistics.

FIVE KEY CONSIDERATIONS TO IMPLEMENTING EHA

Kathy Roe and Tim Owings

1. Consult with the PAO in advance of any announcements so a strategic communications plan is created that includes "one voice" messaging to minimize confusion and rumors.

2. Communicate frequently with employees and contractor partners so they understand exactly what you are trying to accomplish. Establish monthly all-hands meetings, send out a series of e-mails with information, and post articles and information in internal newsletters.

3. Provide a mechanism for employees to ask questions, even anonymously, to help ensure transparency with the workforce. Consider a Web page(s) with detailed information, links to relevant information, and a feedback/question form.

4. Maintain an open door policy for those employees who respond better to verbal information or who prefer a private setting to discuss their concerns.

5. Consider hosting a job fair to complement job advertisements to ensure you reach the best workforce that is available both from within the DOD community and industry.

Meeting Acquisition Challenges Presented by the Army's Ground-Based Sense and Avoid (GBSAA) and Airspace Integration (AI) Efforts

LTC Trey Kelley

The proliferation and fielding of Unmanned Aircraft Systems (UAS) platforms in the U.S. military services are used to accomplish combat missions in support of worldwide contingency operations. The services' airspace needs are growing, and segregated airspace will no longer suffice for UAS training, testing, and operations. Operating UAS in tactical or combat airspace presents many unique challenges. However, operating UAS in nonsegregated portions of the National Airspace System (NAS) introduces issues for DOD and the Federal Aviation Administration (FAA) to meet the military's demand for UAS operations, testing, and training while maintaining the FAA's charter to keep the NAS safe.

SPC Mitchell Matney, a Raven operator for Headquarters and Headquarters Troop, 1st Squadron, 221st Cavalry Regiment, 4th Brigade Combat Team, 4th Infantry Division, launches a Raven Unmanned Aerial Vehicle at Combat Outpost Nagil, Laghman Province, Afghanistan, Oct. 13, 2009. (U.S. Army photo by SPC Derek Kuhn.)

There are several areas to tackle and gaps to fill to safely integrate UAS into the NAS. For instance, UAS do not operate with a pilot or operator on the actual aircraft, which makes it very difficult for UAS operations to comply with *Federal Aviation Regulation* (*FAR*) *Part 91.113* that states: "When weather conditions permit, regardless of whether an operation is conducted under instrument flight rules or visual flight rules, vigilance shall be maintained by each person operating an aircraft so as to see and avoid other aircraft. When a rule of this section gives another aircraft the right-of-way, the pilot shall give way to that aircraft and may not pass over, under, or ahead of it unless well clear." UAS must have an approved alternate means of compliance to the "see and avoid" requirement levied by this regulation.

SAA Solutions

DOD is looking to solve this issue with what is being called SAA technologies. The U.S. Air Force is the lead service for Airborne SAA (ABSAA), and the U.S. Army is the lead service for the development of GBSAA. GBSAA will be a near- and mid-term SAA solution and an element of the final GBSAA and ABSAA integrated solution. The Army's UAS Project Office (PO) has established the Unmanned Systems Airspace Integration Concepts Product Directorate (USAIC PD) for

LTC Trey Kelley, far right, Product Director for the USAIC Directorate within the UAS PO, discusses the limited availability of airspace for UAS flight tests with (left to right) Deputy Product Director Viva Austin and team members Dave Sickmeier of ITT Corp. and Larry Herbek of Science Applications International Corp. (U.S. Army photo by Marianne Higgins, CAS Inc., a wholly owned subsidiary of ITT Corp. contractor supporting the UAS PO.)

Shown here is the GBSAA proof of concept 3-D radar site. (U.S. Army photo courtesy of the UAS PO.)

the specific purpose of developing, testing, fielding, and sustaining a GBSAA system, which would give UAS operators an SAA capability, allowing them an alternate means of compliance with *FAR Part 91.113*. For UAS operators' compliance, this requires the integration of technology, operations, procedures, requirements, and standards development into a cohesive and seamless system for UAS to integrate routinely into the NAS with manned aircraft (see Figure 1).

The technical challenges that accompany this GBSAA effort are immense. Though much of the development is leveraging existing technology to satisfy the SAA function, it is quite a technical task to use this technology to perform functions never before completed and combine all of these disparate technologies together into an integrated system that is reliable and safe enough to be accepted by the military services and the FAA. The USAIC PD has collaborated with the other military services, industry, academia, and other government agencies (including the FAA) to develop a standard and repeatable process to successfully meet this technical challenge (see Figure 2).

The GBSAA process is adaptable based upon the required mission, the particular UAS needed to fly that mission, and the location (including the overlying airspace) where the UAS would fly the required mission. This GBSAA process is extremely well documented and, when finalized, will be used to emplace and employ a GBSAA system at any location to allow UAS operators to fly in the NAS wherever a GBSAA system has coverage. Generically, the GBSAA system consists of all ground-based sensors, networks, communications, logic, procedures, user interfaces, and any correlation and fusion functionality (see Figure 3).

The services have identified three proof-of-concept GBSAA sites to help develop and test GBSAA: Cherry Point Marine Corps Air Station, NC; Beale Air Force Base, CA; and El Mirage, CA. Each site has slightly different objectives. Currently, adequately equipped UAS fly in Class A airspace, where all manned and unmanned aircraft are cooperative, which means they have an operable transponder and are communicating with air traffic control facilities. The FAA defines Class A airspace as "the en route, high altitude

environment used by aircraft to transit from one area of the country to another" and exists in the U.S. at 18,000–60,000 feet mean sea level. The Army is using 3-D radar to survey a volume of airspace and gain the ability to fly UAS at night at El Mirage. Each of these sites has a specific goal, which is a first step to the final goal of unfettered and routine DOD UAS access to the NAS. Beyond the site-specific objectives, the USAIC PD has the following overarching strategic GBSAA objectives:

- Validate the GBSAA process.
- Validate GBSAA as an alternate means of compliance to the SAA regulation.
- Incrementally develop requirements for any SAA system.
- Develop the requirements and standards for evaluating and qualifying an SAA system.

Technical and Acquisition Challenges

With the extremely challenging technical issues and the aggressive goal of routine access, the acquisition

FIGURE 1

The standards and requirements for a GBSAA system being developed will be largely extensible and transferable to other locations and will be common to all SAA systems. (Graphic courtesy of the UAS PO.)
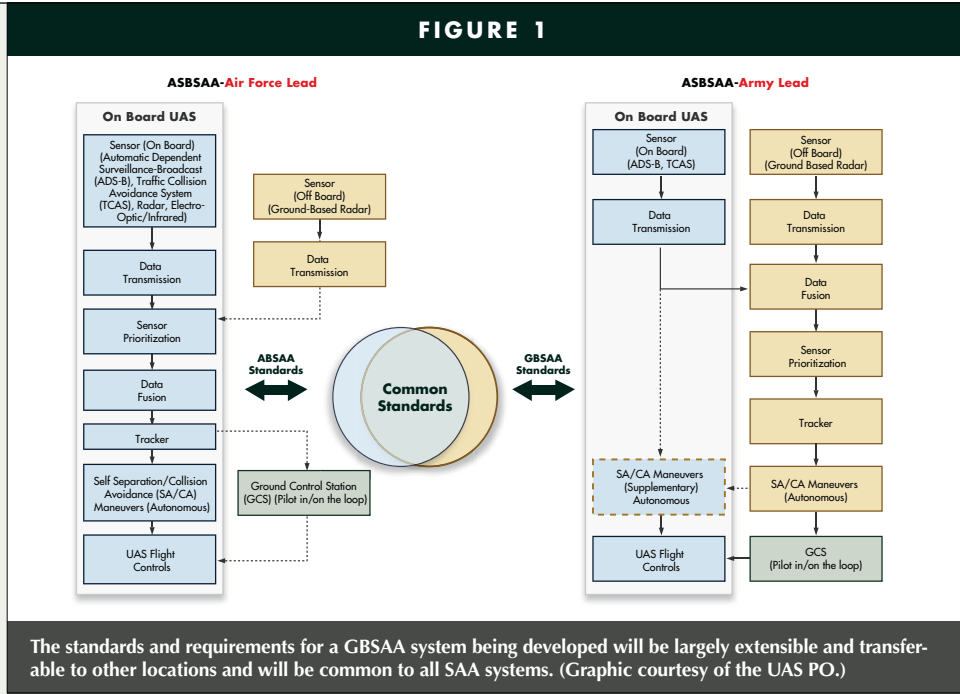
challenges surrounding this effort are just as daunting. The need has outpaced the documented requirements; therefore, an acquisition technology push will need to parallel a user requirement pull. This parallel push and pull becomes even more critical when considering the incremental strategy

adopted to ensure all NAS stakeholders are comfortable with the solutions and to inject appropriate and timely advances in technology into airspace integration material solutions.

This incremental strategy seems to be a logical plan on both the technical materiel development side, as well as on the acquisition and program management side. The technology is not currently mature enough to allow routine and unfettered access in the near term, but there is a growing demand from all services to fly UAS in some capacity immediately in the national airspace. Therefore, the USAIC PD will use existing technologies to reduce some of the current restrictions and simultaneously enhance those technologies, while maturing other technologies to continue reducing restrictions until the incremental strategy has attained the final goal of routine and unfettered access to the NAS for UAS. UAS operators will then be able to file a flight plan and fly under the same guidelines and regulations as would a manned aircraft, as the UAS would be in full compliance with *FAR Part 91* through the alternate means of compliance provided by the SAA system.

FIGURE 2
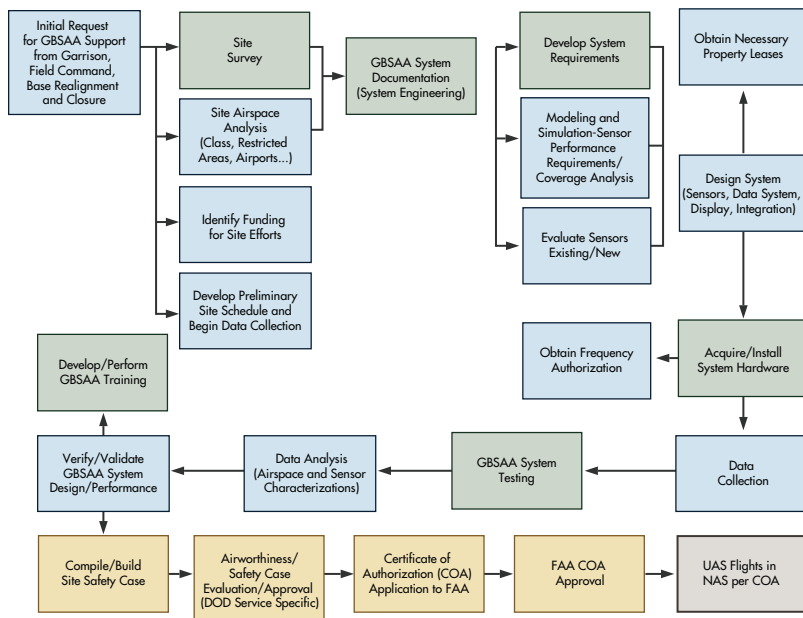
The Army has documented and organized the GBSAA approach and methodology being used at the El Mirage facility and is validating a jointly developed process for GBSAA, so it is standard and repeatable based upon the mission, system being flown, and location. (Graphic courtesy of the UAS PO.)

The Army's UAS PO has established the USAIC PD for the specific purpose of developing, testing, fielding, and sustaining a GBSAA system, which would give UAS operators an SAA capability.

Much still needs to be done in the technical and acquisition areas. The user community is diligently documenting the requirements for appropriate staffing. The materiel development community is grappling with acquisition plans and the resulting acquisition documentation and approval. Additionally, other related UAS NAS limitations and challenges to full NAS access exist. These areas include meeting system airworthiness requirements for NAS flight, operator training requirements appropriate to fly in the required NAS airspace, equipage requirements appropriate to the class of airspace a particular UAS will fly within, and operations and procedures appropriate for UAS flight in the NAS. All of these challenges are interconnected and no one problem can be solved in a vacuum without consideration for how it impacts the other areas. The USAIC PD mission is no different. Any advances and successes in the development of GBSAA or any SAA system must account for the impact to system airworthiness, operator training, operations and procedures, and equipage.

AI Integrated Product Team (AIIPT)

For the USAIC PD to appropriately be aware of these other areas, it requires a vigilance that is accomplished through cooperation with other UAS and airspace integration organizations. One way of accomplishing this cooperation and maintaining awareness is through active core membership in the Office of the Undersecretary of Defense for Acquisition, Technology, and Logistics (OUSD(AT&L)) UAS Task Force's (TF's) AIIPT. The OUSD(AT&L) UAS TF AIIPT is a forum in which many members from the DOD UAS NAS access community gather to discuss airspace integration challenges and update each other on accomplishments and plans of action. Members from all of the services represent organizations with missions and functions ranging from actual UAS operations to requirements and policy to acquisitions, technology, and logistics, among others. Ultimate success will require continued cooperation with all stakeholders through active participation in this forum and others.

As DOD's lead service for GBSAA, the Army, through the UAS PO and the outstanding employees of the USAIC PD, will continue to tirelessly and actively attack the challenges associated with the development, testing, fielding, and sustainment of GBSAA, while maintaining an awareness and vigilance through active cooperation with all stakeholders to realize the ultimate goal of unfettered and routine access to the NAS in a shared flight environment to include manned and unmanned aircraft. Our warfighters deserve this enthusiasm and the resulting benefits to UAS training, testing, and operations.

LTC TREY KELLEY is the Product Director for the USAIC Directorate within the UAS PO. He holds a B.A. in business administration from Furman University and an M.A. in computer resources and information management from Webster University. Kelley is also a graduate of the Aviation Officer Basic Course, U.S. Army Rotary Wing Aviator Course, Military Intelligence Officer Advanced Course, U.S. Army Fixed Wing Multi-Engine Qualification Course, and U.S. Army Command and General Staff College. He is Level II certified in program management and is a U.S. Army Acquisition Corps member.

FIGURE 3

A GBSAA system includes several components or functionalities. GBSAA is sensor-independent, but includes a sensor or system of sensors (currently ground radar). Additionally, the system includes procedures, networks, communications, correlation, fusion, logic, and a user interface. (Graphic courtesy of the UAS PO.)

Reshaping the Battlefield and Technology Acquisition: Unmanned Aircraft Systems (UAS) Project Office (PO) Changes How DOD Does Business

LTC Jennifer Jensen

Just 1 year ago, then-Under Secretary of Defense for Acquisition, Technology, and Logistics John Young commended the Army's initiatives to improve interoperability of ground control stations for UAS. "The Army has developed a great strategy," he said. "If we can adapt it across DOD, the acquisition team will have done something unprecedented: deliver a totally joint, common system that enables and empowers the warfighter."

Soldiers manage the UGCS from inside a climate-controlled, standard S-280 or S-788 U.S. Army shelter mounted on either a standard Army 5-ton Medium Tactical Vehicle or High-Mobility Multipurpose Wheeled Vehicle. The UGCS receives and disseminates battlefield video and SA data through state-of-the-art operator consoles that can provide command and control, payload control, and weapons launch. (U.S. Army photo courtesy of the UAS PO.)

The interoperability challenge is even more important as the warfighter comes to rely on UAS data at all levels of command. If sensor data must flow from platform to sensor operator to processor to Soldier across multiple, sometimes incompatible, systems, timely distribution of decision-quality information across the battlefield is nearly impossible. Common systems are the centerpiece of the rapid sensor-to-shooter flow battlefield commanders must have to succeed.

Common Systems Integration (CSI) Product Office

Common systems are a growing reality. The focused push began in 2006 when Program Executive Office (PEO) Aviation's UAS PO established the CSI team. PEO Aviation cemented the CSI role in 2007 by making it the Executive Agent for manned/unmanned (MUM) teaming technologies, responsible for publishing interoperability profiles, data standards, and guidance and overseeing implementation of this technology on aviation platforms. In 2008, the Army chartered CSI as a Product Office, and the Office of the Secretary of Defense (OSD) began leveraging CSI's interoperability profiles for UAS across DOD.

CSI is more than a typical "product" office; it is the keystone of the PEO Aviation thrust toward cohesive management of its entire portfolio. Toward this end, CSI continues to advance state-of-the-art interoperability profiles by championing the best practices touted by Young: open architecture, standard interfaces, and government-owned, jointly developed standards. Ultimately, CSI initiatives have reach well beyond specific products.

CSI continues to grow in scope and responsibility. Since the December 2008 review with Young, the team has taken on responsibility for managing several interoperable systems through their life cycles. In addition, OSD tapped CSI to lead a DOD working group in coordination with joint and industry partners to design the modular open systems architecture and interfaces that can be adopted across UAS. Through all these efforts, CSI continues to update and improve UAS interoperability standards between MUM aviation platforms, bridging the gap from the modular force to the future force.

"Jointly developed" is the vital ingredient. In 2007, CSI established an Interoperability Board of Directors composed not only of UAS PO product managers and technical leads for all Army aviation platforms, but also UAS industry partner leadership. CSI also formed an Interface Control Working Group that allows all interested government and industry parties to participate in the collaborative development of interoperability profiles. The government and industry partners work together to build the profiles from the bottom up, continue to participate in updates, and commit to incorporate them in their systems by "signing" the profiles.

The benefits are clear: a priority buy-in and ownership by companies who build the platforms, sensors, and communication systems; elimination of proprietary technologies that preclude future competition; architectures that allow modular improvements from across the industry community (much like the proliferation of new, innovative applications for smart phones); and inherent interoperability. These benefits have already been realized in the CSI efforts to develop and field two specific interoperability-enabling products, the

One System Remote Video Terminal (OSRVT) and the Universal Ground Control Station (UGCS).

Interoperability in the Air

Under CSI leadership, OSRVT development began in 2006 with first fielding only 1 year later. Today, there are more than 1,500 OSRVTs supporting troops in Iraq and Afghanistan. Users (including U.S. Air Force tactical controllers) continue to request them as fast as they can be made, with 100 fieldings per month in the last year. More and more, front-line warfighters, from ground commanders to Apache and Black Hawk aviators, share a common, real-time sight picture from sensors—regardless of platform or service—through the OSRVT. DOD leadership identified this system as making one of the largest impacts to date in Iraq and Afghanistan: "The responsiveness of that MUM teaming has really paid dividends and saved lives of our Soldiers," said retired GEN Richard A. Cody, then-Vice Chief of Staff of the Army.

The OSRVT is an example of the practical, positive warfighting impact of MUM interoperability standards and

product development. The OSRVT enhances battlefield situational awareness (SA) by putting near-real-time video and telemetry data from multiple MUM platforms directly in the hands of the combatant commander. The Soldier sees platform information and payload targeting data for every UAS in range overlaid in graphical format on a FalconView mapping system. He or she can select the data feed from the desired UAS, view near-real-time video, capture still images, and tag target icons on the map for immediate reference. The laptop system is mobile and easy to use while troops are on the move.

MUM teaming integrates air-ground operations to accomplish reconnaissance, attack, lift, and command and control missions. The merger of MUM systems and their information streams enables decisive action at the time and place of the maneuver commander's choosing. In 2008, PEO Aviation fielded the first Airborne OSRVT (known as MUMT-2) in Apache helicopters. Before OSRVT, the UAS operator would verbally describe a situation and location to the Apache pilot, who then had to identify that scene—which was constantly changing—as he/she arrived, assess the situation, and respond. Now, the Apache pilot employs the UAS sensor just as he would a sensor on his own aircraft, with the force-multiplying benefit that the UAS sensor can be 50–80 kilometers forward of the helicopter. In essence, this MUM integration gives the pilot the capability to look "into the future," enabling the crew to locate, identify, and target the enemy well before engagement and share this information in real-time with other friendly forces—all at standoff range from enemy threats.

A Combat Aviation Brigade commander deployed in theater described the impact of the Airborne OSRVT: "It's rapidly becoming seamless and responsive teaming. If we have good line-of-sight communications to/with

OSRVT is a mobile, lightweight, manpackable system that allows Soldiers to receive and display video and telemetry data, even while they are on the move, for enhanced SA. (U.S. Army photo courtesy of the UAS PO.)

the UAS, it's like having a wingman a bit higher up, with a different perspective." He added that having OSRVT in the Apache cockpit "makes it ridiculously powerful." At a higher level, the Defense Acquisition Executive conveyed the same message to Army Acquisition Executive Dean G. Popps in a March 2009 memorandum: "The integration of MUM assets leverages the best capabilities of both to provide improved warfighting capability."

CSI is now working to improve bandwidth efficiency by integrating Tactical Common Data Link and Digital Data Link protocols into airborne platforms, with first implementation in the Raven Small UAS. Simultaneously, CSI is developing the next generation OSRVT, known as Increment 2, which adds bidirectional functionality and encryption. With this capability, the OSRVT operator—on the ground or in the air—can assume control of a UAS payload and get the exact information needed in combat. This bidirectional capability was demonstrated successfully in 2008 and 2009 user assessments at Fort Benning, GA, and fielding will begin in FY11.

Interoperability on the Ground

Another CSI product critical to interoperability among UAS is the UGCS. This architecture is built to the latest interoperability profiles and employs standard interfaces for GCS-to-UAS and GCS-to-Ground Data Terminal communication.

UGCS is scheduled for fielding in 2011 with immediate use with the Shadow and Hunter Tactical UAS, followed closely by the Warrior. The UGCS will control any UAS compliant with the interoperability profiles and will share sensor data across joint and coalition forces. In addition to embodying interoperability, the UGCS program is an acquisition model, incorporating multiple cost-reduction strategies,

UGCS and RVTs are compatible with multiple UAS including the extended-range multipurpose UAS that provides combatant commanders with real-time responsive capability for long-dwell, wide area reconnaissance, surveillance, target acquisition, communications relay, and attack missions. (U.S. Army photo courtesy of the UAS PO.)

including full and open system-level competition, government ownership of the technical data package, and appropriate second-sourcing.

Young described the impact clearly: "The Army owns the rights and holds build-to-print competitions for this commodity hardware. The Army GCS strategy avoids proprietary systems and interfaces, allows us to use a wide range of vendors, and allows competition for value-added functionality. DOD can build on this Army GCS architecture, adding functional modules to allow control of the other services' unmanned aerial vehicles."

Redefining Technology Acquisition

UAS Project Manager COL Greg Gonzalez summarized the benefits of common systems: "The warfighter will no longer have to spend time training on different systems and time retraining to remain certified on all those systems. A common system will allow the warfighter to focus on the job at hand and react to real-time situations without having to stop and think about how to operate a system. Whenever we can do that, we are improving the chances for our Soldiers to remain alive." His team takes every acquisition step with this outcome in mind. The CSI Product

Office is changing the fight by providing unprecedented SA across Army, joint, special operations, and coalition forces.

In addition to this battlefield clarity, CSI has brought clarity to acquisition, driving interoperability from disjointed beginnings to an integrated maturity in just 3 years. The payoff is already tangible, both on the battlefield and in acquisition. CSI initiatives and process leadership—establishing standards and building partnership across the services and with industry—have put "ridiculously powerful" interoperable systems in the hands of warfighters today. CSI is achieving great success leveraging interoperable, open, modular, and scalable architectures and is setting a DOD precedent for acquiring systems in the future.

LTC JENNIFER JENSEN is the Product Manager Common Systems Integration, UAS PO, PEO Aviation. She holds a B.S. in aviation management, flight technology from the Florida Institute of Technology, an M.B.A. from New Mexico State University, and a master's in military operations art and science from Air University. She is certified Level III in program management, Level II in contracting, and Level I in logistics and is a U.S. Army Acquisition Corps member.

Unmanned Aircraft Systems (UAS) Project Office (PO) Finds Powerful Cost Efficiency Advantages Through Proper Performance-Based Logistics (PBL)

Tim Owings

In today's challenging economic landscape, cost efficiency and operational performance have become two of the most important metrics of success for DOD acquisition programs. This is especially true in the areas of system support and sustainment. The size of logistics contracts in relation to the rest of the program budget and the long-term implications for total life-cycle management dictate that DOD acquisition programs continually strive to improve upon past methodologies and challenge traditional norms to realize cost reductions while simultaneously improving performance and safeguarding readiness.

PFC Thomas Montgomery, assigned to Unmanned Aerial Systems Platoon, Alpha Co., Special Troops Battalion (Bn), 3rd Brigade (Bde), 1st Cavalry Division (Div.), stores a Shadow Tactical UAS in a hangar at Forward Operating Base (FOB) Diamondback, near Mosul, Iraq, July 22, 2009. (U.S. Navy photo by MC1 Carmichael Yepez.)

One methodology at the center of the current debate over best business practices is PBL. The purpose of this article is not to convert the unreformed, but rather to dispel some of the rumors and stereotypes surrounding PBL and show how the Army UAS PO has used this contractual approach to great advantage.

To fully understand PBL, it is best to understand what it is not. It is not Contracted Logistics Services, and it is not something that can be turned off and on easily. To work properly, a PBL program requires a high level of trust and long-term commitment and, therefore, the initial buy-in costs can be high. This is because PBL uses metrics and incentives to align the contractor's goals with the government's desires, but it does not dictate the methods or limit the contractor's ability to determine how to do so. Yet, it is that very flexibility and freedom that often dissuades program managers from adopting a PBL construct. To do so entails a full-scale conversion that can be all encompassing. One can liken it to a switch from English measurement to the metric system; half measures do not work well and dilute the benefits that a PBL strategy can provide.

Shadow PBL Product Support Team

The Product Manager's Office for Ground Maneuver, supporting the Shadow Tactical UAS within the UAS PO, has used a PBL contracting strategy with its prime vendor, AAI Corp., since its inception in 2003. During its initial stages, there was a learning curve

accompanied by some unrealistic expectations. It was first believed that the government would only need to acquire spare parts for system support one time, but the rapid procurement of additional systems beyond the initial Army Acquisition Objective dictated otherwise. Additionally, the Product Office never anticipated the eight to tenfold increase in flight operations from combat deployment. Something had to be done.

The Shadow PBL Product Support Team, consisting of logistics and acquisition specialists from both the UAS PO and AAI Corp., has proactively pursued the continued implementation of PBL, conducting annual assessments of the program. During the FY08 assessment, our team felt that the program was exceptionally effective in maintaining warfighter readiness with increasing cost efficiency, but that we were not yet experiencing the cost efficiency anticipated. As a result, the team refocused on how to modify the PBL strategy to change this paradigm.

The first step was to revisit the performance metrics. Originally, four metrics were developed in FY03 to define the performance-based, contractor-managed support efforts. These metrics were mapped to the Operational Requirements Document. The original metrics are defined in Chart 1.A on Page 17.

As a result of the FY07 PBL audit, the Shadow PBL Team agreed upon an updated set of metrics (Chart 1.B) that put emphasis on reducing open depot maintenance work orders and also added a metric aimed at the reduction of air vehicle mishaps. It was felt that focus in both of these areas would, over time, contribute to the reduction of total ownership cost. The results seen over that contract period were extremely positive with a clear reduction in mishaps, from approximately 450 mishaps per 100,000 flight hours to less than 150, and significant improvements in cost efficiency evidenced by a 25-percent reduction in contract cost.

With the FY08 PBL contract, the Shadow PBL Product Support Team matured the metrics (shown in Chart 1.C) based on a better way to quantify depot efficiency and the Depot Maintenance Ratio (DMR) metric was replaced with the Depot Mean Down Time (DMDT) metric. The rationale was simple: under the DMR metric, the total time that a part spent in maintenance was not adequately accounted for, so more involved repairs were delayed. A part broken for 1 day counted the same as a part broken for 365 days. DMDT, by factoring in the time component, forced the vendor from a last in, first out model to a first in, first out model. This has resulted in reduced repair turnaround time from more than 105 days to less than 55 days. The impact of this minor adjustment resulted in a 25-percent contract cost reduction while the System Status Readiness (SSR) rate remained consistently above 90 percent.

It is important to understand that under the PBL construct, the Product Support Integrator (PSI), AAI Corp., receives no fee based on expenditure of cost. The PSI can only receive a fee by achieving the contractual performance-based metrics. Additionally, the PBL contract has traditionally provided for cost sharing. If the PSI underruns the projected cost of the effort, the PSI shares financially in the savings. Likewise, if the PSI overruns the effort, it does not receive cost reimbursement for a considerable percentage of the cost growth.

Results

The terms and conditions of the PBL contract define the incentive score (IS) as representing the weighted sum of the metrics. In FY08, SSR was weighted at 30 percent, Reliability Growth Rate (RGR) at 35 percent, and DMDT at 35 percent. In Chart 2 on Page 18, note the Shadow PBL Team's performance during the FY08 reporting period.

SPC Christopher Ellis, assigned to Unmanned Aerial Systems Platoon, Alpha Co., Special Troops Bn, 3rd Bde, 1st Cavalry Div., conducts a radio check as he prepares to launch a Shadow Tactical UAS at FOB Diamondback July 22, 2009. (U.S. Navy photo by MC1 Carmichael Yepez.)

Particularly noteworthy, as related to the performance of the Shadow PBL Team, is that despite increasing operational tempo (OPTEMPO):

- Operational readiness and availability, as encompassed in the SSR, has remained at or above 90 percent.
- The mishap rate, as measured by the RGR, is continuing its downward trend to less than half of the 2006 rate.
- The DMDT for an item being repaired at the depot is less than 60 days including transportation time in and out of theater.

Just as importantly, Chart 3 on Page 19 shows the impact, over the phases of the Shadow PBL implementation, that the Shadow PBL Team has had on life-cycle total ownership cost reduction:

- The Army Cost Position was provided as part of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology Milestone C decision process. It was estimated to be 10 percent of the total system procurement cost. At the time, the plan was based on a fielding plan that supported 44 RQ-7B systems, to include the UAS training center at Fort Huachuca, AZ.

Shown here is a Shadow Tactical UAS in flight. (DOD photo.)

- Base PBL is the peacetime OPTEMPO profile that supports contracted hours/system/year at 85 percent operational readiness.
- System months represent the number of systems that must be supported cumulatively each month of the contract period of performance. As the RQ-7B is still being fielded and as units fall into the deployment cycle, system months help manage the dynamics of the RQ-7B schedule.

In certain circles, PBL has been viewed as a business fad and is derided in much the same fashion as Total Quality Management and Lean Six Sigma when

those concepts were first espoused. It is true that these methods are not a panacea, but time has shown that when applied under the right circumstances, they can provide powerful results. The results above prove that the same is true of PBL.

TIM OWINGS is the Deputy Project Manager, UAS PO. He holds a B.S. in aerospace engineering and an M.B.A. from Auburn University. Owings is Level III certified in program management and a U.S. Army Acquisition Corps member.

CHART 1. PERFORMANCE METRICS

A. ORIGINAL METRICS	B. UPDATED METRICS	C. MATURED METRICS
SSR = 85 percent	**SSR = 85 percent**	**SSR = 85 percent**
$\dfrac{\text{Total Time - Down Time (at Subsystem Level)}}{\text{Total Time}}$	$\dfrac{\text{Total Time - Down Time (at Subsystem Level)}}{\text{Total Time}}$	$\dfrac{\text{Total Time - Down Time (at Subsystem Level)}}{\text{Total Time}}$
CWT = 90 percent	**DMR**	**DMDT = 60 Days**
$\dfrac{\text{Total Requirements - Number of Unsuccessfully Filled Total Requirements}}{}$	$\dfrac{\text{Total Flight Hours Current Quarter}}{\text{Number of Open Depot Maintenance Actions}}$	$\dfrac{\text{Total Down Time}}{\text{Depot Maintenance Actions}}$
Field Service Representative Quotient	**Performance Requirement: 17-18 to 1**	**Performance Requirement: 17-18 to 1**
Customer satisfaction quotients evaluated via Contractor		
Performance Assessment Reporting System Report		
Logistics Maintenance Ratio	**RGR**	**RGR = average 33.5/100,000 hours**
$\dfrac{\text{Total Operating Hours}}{\text{Number of Unscheduled Maintenance Actions}}$	Performance against a Reliability Growth Curve	Performance against a Reliability Growth Curve

CHART 2. SCORING CONFERENCE RESULTS TABLES

NOVEMBER 2007 – JANUARY 2008

Metric	Nov. 2007		Dec. 2007		Jan. 2008		Average Quarterly Score	Average Quarterly Points	Weight Factor	Quarterly Weighted IS Points
	Score	Points	Score	Points	Score	Points				
SSR	97	115	97.5	115	96.8	110	972.8	115	0.3	34.5
RGR	0.63	110	0.59	110	1.82	80	N/A	100	0.35	35
DMDT	N/A	N/A	N/A	N/A	N/A	N/A	76	95	0.35	33.25

2008 1ST QUARTER INCENTIVE SCORE   102.75

FEBRUARY 2008 – APRIL 2008

Metric	Feb. 2008		March 2008		April 2008		Average Quarterly Score	Average Quarterly Points	Weight Factor	Quarterly Weighted IS Points
	Score	Points	Score	Points	Score	Points				
SSR	96.7	110	96.3	110	96.5	110	96.5	110	0.3	33
RGR	2.04	75	0.44	115	1.06	90	N/A	93.33	0.35	32.67
DMDT	N/A	N/A	N/A	N/A	N/A	N/A	74	95	0.35	33.25

QUARTERLY INCENTIVE SCORE   98.9

MAY 2008 – JULY 2008

Metric	May 2008		June 2008		July 2008		Average Quarterly Score	Average Quarterly Points	Weight Factor	Quarterly Weighted IS Points
	Score	Points	Score	Points	Score	Points				
SSR	92.4	105	96.8	110	95.5	110	94.1	110	0.3	33
RGR	1.52	93	0.94	95	1.59	83	N/A	87	0.35	30.45
DMDT	N/A	N/A	N/A	N/A	N/A	N/A	75	95	0.35	33.25

QUARTERLY INCENTIVE SCORE   96.7

AUGUST 2008 – OCTOBER 2008

Metric	Aug. 2008		Sept. 2008		Oct. 2008		Average Quarterly Score	Average Quarterly Points	Weight Factor	Quarterly Weighted IS Points
	Score	Points	Score	Points	Score	Points				
SSR	95.2	110	95.6	110	99.5	120	94.91	110	0.3	33
RGR	1.92	80	3.33	60	2.13	75	N/A	71.6	0.35	25.08
DMDT	N/A	N/A	N/A	N/A	N/A	N/A	59.4	110	0.35	38.5

QUARTERLY INCENTIVE SCORE   96.6

CHART 3. PBL COSTS

PBL COST FOR THE BASE EFFORTS FYs 06–08 VERSUS THE ORIGINAL ARMY COST POSITION (ACP)

	ACP (Milestone C) FY03	FY06 [5] (600 hours/OPTEMPO)	FY07 [5]	FY08 [5] (300 hours/OPTEMPO)
Contact Line Item Number 0101 (Base PBL)	$66,000,000	$32,000,000	$53,803,721	$50,777,428
System Months Supported	528	225	645	737
Cost of Readiness (COR)/Month [1]	$125,000	$116,334	$83,417	$68,897
COR/Year [2]	$1,500,000	$1,396,008	$1,000,999	$826,770
Percent Cost Reduction vs Previous Fiscal Year [3]			28.3 percent	17.41 percent
Percent Reduction of Total Ownership Cost (TOC) vs ACP [4]		6.93 percent	33.27 percent	44.88 percent

PBL COST FOR DEPLOYMENT WITH OPTEMPO MORE THAN 8 TIMES BASE PEACETIME PLANNING [6]

	FY06 (OPTEMPO Hours) ~34,500	FY07 (OPTEMPO Hours) ~86,250	FY08 (OPTEMPO Hours) ~104,575
Contract Line Item Number 0109 Deployment (not U.S. Marine Corps)	$66,000,000	$61,413,037	$66,579,166
System Months Supported	115	225	327
COR/Month	$521,739	$272,947	$203,606
COR/Year	$6,260,870	$3,275,362	$2,443,272
Percent Cost Reduction vs Previous Fiscal Year		47.69 percent	25.4 percent

1. The "COR/Month" is calculated as follows: Total Negotiated Contract Price (for the Base or Deployment Contract Line Item Number) ÷ Number of System Months = COR/Month.

2. The "COR/Year" is calculated as follows: COR per Month × 12 = COR/Year.

3. The following formula calculates "Percent Cost Reduction vs Previous Fiscal Year": 1 − (Current Fiscal Year COR/Year ÷ Previous Fiscal Year COR/Year).

4. The following formula calculates "Percent Reduction of TOC vs ACP": 1 − (Current Fiscal Year COR/Year ÷ ACP COR/Year).

5. Planning OPTEMPO for the base PBL efforts has equaled 600 hours/year (50 hours/month) at 85 percent operational readiness. For FY08, based on overseas contingency operation efforts, base hours have been reduced to 300 hours/year (25 hours/month).

6. Planning OPTEMPO for deployments is "over and above" the base hours and fluctuates based on warfighter requirements.

Contracted Deployed OPTEMPO per Month			
	FY06	FY07	FY08
Contracted Hours	34,500	86,250	104,575
Hours/System Month	300	383	320
Hours/System Year	3,600	4,600	3,838

OPTEMPO hours, for each system, are in addition to the base OPTEMPO hours. Total OPTEMPO hours procured by the FY08 effort (deployed and CONUS) are 114,536.

Army civilians play a growing and unprecedented role in the Army today. Here, DA civilian Lynn Badie, a logistics management specialist serving with the 401st Army Field Support Brigade (AFSB) headquarters as a deployed volunteer, looks over absentee ballot materials at Camp Arifjan, Kuwait. (U.S. Army photo by Jim Hinnant, 401st AFSB.)

Army Civilian Development and Insourcing—Challenges for the Future

Kellyn D. Ritter

With our military at war for more than 8 years, civilians are playing an increasingly important role in the Army. Army civilians provide an invaluable service as they now are involved in functions that previously were done primarily by the military. Now more than ever, it is critical that the Army civilian community is developed, educated, and trained for supporting an Army at war. Army civilian leaders held a panel discussion Oct. 7, 2009, at the Association of the United States Army Annual Exposition and Meeting to discuss the challenges and progress of Army civilian development and insourcing.

Civilians' Role

Civilians play an unprecedented role in the Army. Today, we have more engagement and deployment of Army civilians than ever before in our Nation's history. Assistant Secretary of the Army for Manpower and Reserve Affairs (ASAM&RA) Thomas R. Lamont advised, "Each and every day Army civilian employees support Soldiers and their Families. Our Army in many cases is supported by civilians, equipped by civilians, transported by civilians, resourced by civilians, and led by civilians. This support happens both here in CONUS and overseas to include Iraq and Afghanistan."

Karl Schneider, Principal Director to the ASAM&RA, reiterated the important role Army civilians comprise. "The Generating Force itself is a majority of Army civilians," he said. "That part of the Army that trains and equips our forces is run essentially by civilians. … Because of the war, our ability to assign military personnel to the Generating Force is challenged … so that makes civilians even more important to us."

Challenges

Schneider described today's environment in which the Army Civilian Corps resides. It is a tremendous time of change for the Army with Base Realignment and Closure (BRAC) and retirement of a large amount of the workforce. Through these changes, the Army continues to fight the ongoing war in which it has been involved for 8 years. These factors cause enormous stress on an already busy Army and Civilian Corps.

Schneider advised that the Army has almost 300,000 civilians and will need to hire an additional 100,000 in the next several years. Although the hiring increase can be demanding, an overhaul of our Civilian Corps can be advantageous. "We can see this as a problem," Schneider said, "but we can also see it as an opportunity to improve on what is already an excellent corps of Army civilians." Although it is a challenge, the need for Army civilians has never been greater, and so the Army has an opportunity to acquire personnel to strengthen the Civilian Corps even further.

Schneider advised that growing the Civilian Corps gives the Army the opportunity to determine the type of people it wants in the workforce. Army leaders can choose what skills, values, and attributes our Army civilians should have. Just as the military chooses and trains only the best, so should the Army Civilian Corps. Some civilian attributes Schneider mentioned as valuable include agility, creativity, problem-solving skills, teamwork, and collaboration. "We want the very best. The country needs the very best. Our Army needs the very best," he said.

Mark Lewis, Assistant Deputy Chief of Staff (DCS), G-3/5/7, advised that the challenges our Army faces will not cease anytime soon. The persistent conflict we've been engaged in for 8 years will continue a long time, as "global trends will exacerbate the current ideological struggle," said Lewis.

Lamont advised that because the world and the nature of warfare are always changing, we must continue to adapt. "To meet the challenges of the 21st century, the Army and the Civilian Corps must continue to transform," he said. Lamont spoke of actions that the Army can take to ensure continued success for our Civilian Corps in the future:

- Work to provide and improve our hiring and recruiting process. A streamlined hiring process is key to recruiting a dynamic workforce.
- Managing our personnel count so we know what talent is needed, where and when it is needed.
- Have a sound strategy for developing the civilian workforce.

Civilian Development

Joe McDade, Assistant DCS, Army G-1, advised of the current state for advancement and professional development opportunities in the Army Civilian Corps. A number of Army civilian professional development programs are world-class and better than any in the federal government. However, this is not uniform across all programs. Forty percent of the workforce's professional development is managed, but it is managed inconsistently due to the differing quality of programs across the force. We must make Army civilian professional development uniform across the workforce. McDade also advised that 60 percent of the workforce's professional development is not managed and does

ASAM&RA Thomas R. Lamont described Army civilians' increased function in the Army. "Our Army in many cases is supported by civilians, equipped by civilians, transported by civilians, resourced by civilians, and led by civilians," he said. (U.S. Army photo by McArthur Newell II, BRTRC.)

not have a career path or acquisition career field (ACF). He directed that this must change quickly but deliberately.

McDade advised that, "As we go forward with civilian development, it has to be an enterprise approach." He described a recent Human Capital Enterprise Board offsite in which Army senior leaders met to discuss human capital initiatives. McDade and others presented a mandate for change at the offsite to improve civilian development, and leadership pledged that the development would be a priority for the Army in FY10. The board endorsed "a concept where the M&RA and the G-1 partnership team would meet with every single deputy of the U.S. Army staff and the most senior SESs [Senior Executive Services] from all of the commands with the largest number of civilians," said McDade. This had never been done in the Army before. These personnel met for 2 days to talk about civilian development goals, guiding principles, and the way ahead and came up with recommendations to improve the Civilian Corps. The recommendations include:

- Access, train, develop, and retain a high-quality and diverse civilian force that serves the Nation's Army mission.
- Deliberately develop to perform in joint, interagency, intergovernmental, and multinational environments, as the military does.
- Deliberately develop to provide a cadre of competitive internal candidates prepared to fill key positions.
- Make a social contract to select civilians for developmental opportunities with programmatics and funding in place.

To accomplish these goals, McDade advised that we need a best-in-class philosophy for civilian development. Civilians should be tested just as we test military officers. Additionally, to manage civilian talent, several robust processes must be integrated. An

Principal Director to the ASAM&RA Karl Schneider advised that growing the Civilian Corps is a challenge, but also an advantage as it gives the Army the opportunity to determine the skills, values, and attributes the workforce will have. (U.S. Army photo by McArthur Newell II, BRTRC.)

example of such a process is defining SES positions consistently across the workforce and assessing all SESs with the new methodology. McDade advised that the board is now examining these recommendations and developing deliberate processes with leadership.

McDade commended Army leadership for leading the way to change in Army civilian development. "If you have the kind of endorsement and vision that articulates," he said, "I think the U.S. Army is poised to go from good to great. … With that kind of commitment, I think we are poised to take the Army not one or two notches up, but we're about to do something that's truly world-class."

Insourcing

Insourcing is part of the solution to growing and developing the Army Civilian Corps. Dr. John Anderson, Deputy Assistant Secretary of the Army for Force Management Manpower/ Resources Office, ASAM&RA, advised that the Army is planning to insource approximately 7,160 jobs in FY10 and approximately 11,080 in FYs 11–15.

Anderson advised that prior to 2008, insourcing was constrained. He described the outsourcing dilemma that has risen in the Army: "There is

a consensus at the strategic level, both from critics of how the Department [of the Army (DA)] is executing its insourcing program and those who support it, that the DA's reliance on contractors is out of balance. Namely, there are real concerns that we may have contracted inherently governmental functions in some cases and have lacked organic intellectual capital required for proper oversight of contracted work. … There is broad agreement that we've contracted out too much."

Anderson described core aspects of insourcing that will enable the Army to effectively insource and restore balance to the Army Civilian Corps. These aspects include:

- Identify contracts to insource and strategically identify new requirements to insource.
- Implement insourcing in the program and budget processes.
- Accommodate insourcing in the hiring process.
- Define the acquisition workforce that we want to grow, given the nature of the insourcing problem we're trying to solve.

With the abundance of guidance on insourcing, Army personnel are often overwhelmed by the multitude

of regulations. The Army now has a policy Web site on insourcing and contractor inventories to simplify and clarify guidance: **http://www.asamra. army.mil/insourcing**.

Civilian development and insourcing are significant issues not only for today's workforce, but for the Army of the future.

Acquisition Community

Craig A. Spisak, U.S. Army Acquisition Support Center (USAASC) Director, spoke about how insourcing will affect the acquisition workforce. The acquisition workforce is comprised of approximately 40,000 DA civilians across 12 ACFs. Approximately 2 percent of the acquisition workforce is military (approximately 1,650 officers and several hundred noncommissioned officers). "When you look at that population and integrated mix in total and the capability they provide to the Army, the acquisition professional capability is critical," said Spisak.

Over the last 15 years, the acquisition workforce has seen significant reductions, particularly in the civilian sector, along with an enormous increase in mission requirements and responsibilities. "While we're asking the workforce to do more in a more complex environment, we've given them fewer resources," said Spisak. "We're at a point where we recognize we've lost a lot of in-house, organic

capability [that's needed] to perform our functions in the way we are chartered to provide capability to the Army."

Insourcing is critical to bringing key capabilities back into the acquisition workforce. Approximately 4,000 positions are expected to be insourced in the acquisition workforce over the next 5–6 years. The ACFs that are in the greatest need of insourcing include program management, engineering, science and technology, business cost estimating and financial management, logistics, and information technology.

In conjunction with insourcing, the acquisition workforce is using the *Defense Acquisition Workforce Development Fund*, directed by *Section 852* of the *National Defense Authorization Act*, to bring critical functions back to the acquisition workforce. This fund enables DOD to recruit and hire, develop and train, and recognize and retain its acquisition workforce. Spisak described it as follows: "The act establishes a tax on service contracts across the entire DA, and each of the services gets a portion of that money back to focus on training and development, hiring, recognition, and retention of acquisition workforce positions." The complete language of the law can be found at **http://www.govtrack. us/congress/billtext. xpd?bill=h110-4986**.

Challenges for civilian development and insourcing in the acquisition workforce include complying with statute

regulations regarding who can and cannot perform acquisition functions (per the *Defense Acquisition Workforce Improvement Act* and subsequent policy), obtaining acquisition training to meet certifications (certification requires a 3-prong plan of training, education, and experience for acquisition professionals), and competing with BRAC for talent. "We will continue to manage this acquisition workforce population from a holistic top-down approach where we look across the entire workforce at those capabilities that we have to provide to the Army," said Spisak. "We will then work with the individual commands and organizations to ensure that we can identify their specific requirements and allocate those 4,000 positions across the acquisition community."

Civilian development and insourcing are significant issues not only for today's workforce, but for the Army of the future. They are critical to keeping the Army Civilian Corps a viable, relevant, and ready force that can continue to support our Army at war. Successful implementation of these initiatives also ensures that the Civilian Corps is prepared to support the Army in future conflicts. Army civilians play an ever increasing role in the success of our Army and they must be prepared to continue their missions. As Lewis stated, "We [Army civilians] are not 'extra.' We're not a cost; we're an investment. We're part of the Army and more so than we've ever been."

Joe McDade, Assistant DCS, Army G-1, described a recent Human Capital Enterprise Board offsite in which Army leadership pledged that civilian development would be a priority for the Army in FY10. The board is now examining leadership's recommendations and developing deliberate processes to accommodate them. (U.S. Army photo by McArthur Newell II, BRTRC.)

KELLYN D. RITTER provides contract support to USAASC through BRTRC Technology Marketing Group. She holds a B.A. in English from Dickinson College.

Army Senior Leaders Discuss Rebalancing and Transforming the Force

Jaclyn Pitts

Rebalancing, modularizing, and transforming the U.S. Army are three resounding issues that senior leaders contemplate as we move forward in what has been called an "era of persistent conflict." GEN Charles C. Campbell, Commanding General (CG), U.S. Army Forces Command (FORSCOM), and Sergeant Major of the Army (SMA) Kenneth O. Preston discussed the impact of these issues and where the Army must go from here at the Infantry Warfighting Conference in Columbus, GA, Sept. 24, 2009.

The ARFORGEN model employs ARNG and USAR components as parts of a fully integrated operational force. Here, SPC Ryan Crosby, a Provincial Reconstruction Team Paktika Security Forces member from the Arizona ARNG, works security near the village of Sultani, Afghanistan, Oct. 26, 2009. (U.S. Army photo by SSG Dallas Edwards.)

Major Paradigm Changes

Campbell said there have been three major paradigm changes that the U.S. Army has embraced since the terrorist attacks of Sept. 11, 2001: modularity, the new strategic construct of the Army Force Generation (ARFORGEN) model, and employing the Army National Guard (ARNG) and U.S. Army Reserve (USAR) components as parts of a fully integrated operational force. Campbell also provided a deployment update. At the end of FY09, the Army had deployed 48 brigades and reset 33. In FY11, the Army plans to deploy 47 brigades, and force modularization will be complete. Additionally, 8 major Army commands will be relocated over the course of FY11.

Campbell also addressed two "great epiphanies" of the Army after the first phase of *Operation Iraqi Freedom* (*OIF*). First, the Army realized it needed a

> Without question, we have relied on our National Guard and Reserves during this persistent conflict, and they have stood up and delivered.

way to replace forces that had been generated and deployed to *OIF*. "The previous process the Army used to generate forces was a more linear system," he said. "Because of the requirements to repetitively deploy formations, because of a supply and demand mismatch, and because we were changing our structure to a more mobile, brigade-centric Army, we developed a rotational model, or ARFORGEN."

FORSCOM has continued to refine the ARFORGEN process since its inception in 2006. The process involves moving units through a cyclical process

of three categories or pools—train and reset, ready, and available—based on when they are expected to be available for deployment. This allows the Army to be agile and respond to changing demands for forces.

"Manning is our dilemma, and the ARFORGEN process allowed us to successfully synchronize the 2007 surge," Campbell said. "No other Army in the world can even fathom the scope, complexity, or ambitiousness [of that feat]." As the Army continues to transform and adapt to new threats, it will operate along the continuum of both kinetic and nonkinetic warfare. "Our challenge as an Army is refocusing ourselves reflective of this reality," Campbell said.

The second "great epiphany" for the Army was operationalizing the ARNG and USAR to change their roles from a strategic reserve to integrated components of an operation. "Without question, we have relied on our National Guard and Reserves during this persistent conflict, and they have stood up and delivered," Campbell said.

A Force Out of Balance

Preston told the audience that we live in an "era of persistent conflict," and that this era is not likely to change any time soon. To combat current and future threats, we must maintain an aggressive counterinsurgency campaign. However, to maintain such a regime, balance must be restored to a force that is overworked, under-strength, and war-weary. "Right now, the demands exceed our capabilities," Preston said. "With the current pace and tempo, many question our ability to sustain an all-volunteer force."
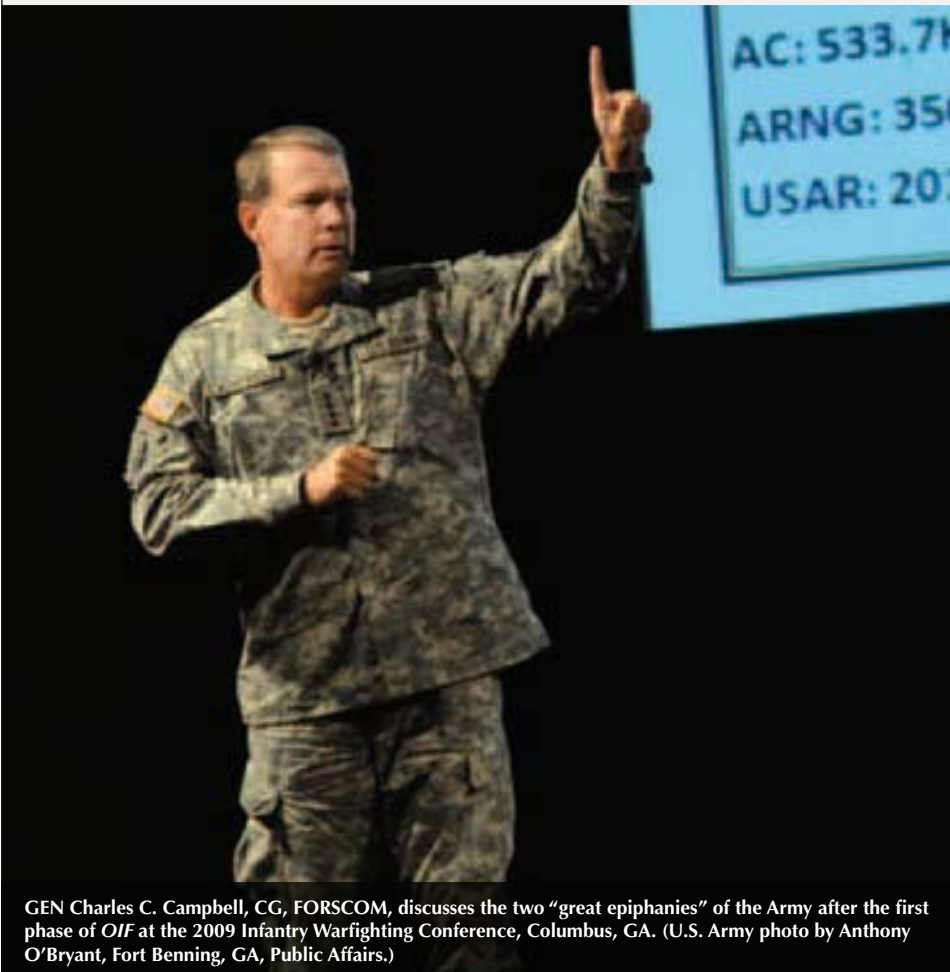
GEN Charles C. Campbell, CG, FORSCOM, discusses the two "great epiphanies" of the Army after the first phase of *OIF* at the 2009 Infantry Warfighting Conference, Columbus, GA. (U.S. Army photo by Anthony O'Bryant, Fort Benning, GA, Public Affairs.)

SMA Kenneth O. Preston discussed rebalancing the Army and stress on the force at the 2009 Infantry Warfighting Conference. Here, he answers questions about Soldiers' dwell time and other issues facing the Army during a visit to Fort Jackson, SC, Sept. 24, 2009. (U.S. Army photo by Steve Reeves, *Fort Jackson Leader*.)

> To combat current and future threats, we must maintain an aggressive counterinsurgency campaign.

And it's not only the Soldiers feeling the stress, Preston noted. Army Families are also feeling the strain from lengthy deployments and shortened dwell time. The amount of time between deployments is far short of the 2-year Army standard. Current resets are insufficient, given the "redeployment, block leave, reset, train up, gear up" process that often gets compressed into 12 months. Also, when Soldiers are told to "take a knee," they are often assigned to the schoolhouse, the National Training Center, or recruiting duty, which keeps them working 10- to 12-hour days for 6 or 7 days a week, to train Soldiers or meet the mission.

When GEN George W. Casey Jr. became the Chief of Staff of the Army in April 2007, he outlined four strategic imperatives to put the Army back into balance, Preston said: sustain, prepare, reset, and transform. Preston stressed the importance of sustaining an all-volunteer force. He attributed meeting a growth objective of 547,000 by the end of FY08 (2 years ahead of schedule) to high retention rates. With an initiative underway to grow the Army by an additional 22,000, promising retention rates, and the completion of modularization and Base Realignment and Closure moves in sight, the Army may be balanced within the next few years.

A Promise of Hope

Campbell reminded the audience that what they and our Nation are doing, "is goodness," he said. "Preventing people from being killed, brutalized, and oppressed is something our Nation has willingly chosen to do over the course of generations, and the work you do in Iraq, Afghanistan, and elsewhere in the world allows others to contemplate a life as men and women of free choice. A life where hope has replaced despair, where peace has replaced conflict, and where the human spirit can soar and not be suppressed, and where the future can be brighter than the past. That is what being an American Soldier is about. Wherever you go in the world, the sight of an American Soldier in uniform, to all those that are shackled and enslaved and oppressed, means hope, relief, and deliverance."

JACLYN PITTS provides contract support to the U.S. Army Acquisition Support Center through BRTRC Technology Marketing Group. She holds a B.S. in journalism from West Virginia University and a B.S. in criminal justice from Kaplan University.

Armor Warfighting: Meeting the Full-Spectrum Challenge

Jaclyn Pitts and Kellyn D. Ritter

Full-spectrum operations that combine offensive, defensive, and stability operations are the norm of today's battlefield. Our Army must be prepared to operate in these types of operations to achieve mission success. Army leaders gathered at the 2009 Armor Warfighting Conference May 12–14, 2009, Fort Knox, KY, to shed light on how the Armor branch of the Army is adapting to be successful in full-spectrum operations.

To be successful in full-spectrum operations, Soldiers must conduct offensive, defensive, and stability operations simultaneously. Here, Soldiers of the 4th BCT, 1st Armored Division, practice cordon and search techniques as they train. (U.S. Army photo by SGT Mark Miranda.)

Armor's Role in Full-Spectrum Operations

MG Donald M. Campbell Jr., 42nd Chief of Armor, provided an update about the state of the Army's Armor Force. "I can assure you as I stand here today," said Campbell, "that our great branch is meeting the challenges of the full-spectrum fight right now. And as I look to the future, I'm very confident that we're going to be able to meet that full-spectrum challenge as we look to the next fight and into the future."

Campbell advised that the U.S. Army Armor Center and School at Fort Knox performs several key missions to ensure the armor community is ready for full-spectrum operations. These include leader development, support of Army Force Generation (ARFORGEN), and future capabilities development. Regarding leader development, he said, "We've got to continue to adapt and

make sure that we're fitting in with TRADOC's [U.S. Army Training and Doctrine Command's] look at adaptive leaders in this joint, international environment." To do this, the Army needs to ensure armor core competencies are accomplished. Campbell advised we must continue to develop Soldiers as leaders through programs that focus on how we fight as a combined Army team. The Army needs to create and foster adaptive leaders, develop armor core competencies and skill sets, and ensure that teamwork is an essential aspect of the combined arms team.

LTG Rick Lynch, then-Commanding General (CG), III Corps and Fort Hood, TX, discussed training for full-spectrum operations. Lynch stressed that the Armor Force needs to train for the mission at hand as well as future operations, which is a very tough task. However, he advised that it can be done.

"You can do it all if indeed you have an effective training management program," he said. Lynch advised to remove the mentality of "either/or" and adopt an all-encompassing attitude that current and full-spectrum operations can be simultaneously accomplished. "[Soldiers sometimes] focus so much on the mission at hand that they forget about the mission that might be," he advised.

Lynch advised that to be successful in full-spectrum operations, lethal platoon and company teams—necessary for battlefield success—need to be able to conduct major combat operations, be lethal with both small arms and major weapon systems, report accurately, and mark and bypass obstacles. Soldiers need to be trained on how to do these missions simultaneously and must have leaders who lead by example. Lynch advised that we need to train Soldiers how to transfer from combat operations

to stability operations, as lethal platoon and company teams require competent battle staffs that can plan and conduct these operations simultaneously.

> We must continue to develop Soldiers as leaders through programs that focus on how we fight as a combined Army team.

Challenges

GEN Charles C. Campbell, CG, U.S. Army Forces Command (FORSCOM), gave his perspective on full-spectrum challenges facing the Army today and in years to come. "I have served in this Army as a commissioned officer for more than 39 years, and I've learned that challenges make life interesting, and challenges overcome make life meaningful," he said. "I can assure you that if you're going to be in the Army for the next several years, your life is going to be interesting."

Campbell discussed challenges of growing and rebalancing the Army. Most of the Army's growth has been in the active component, which was approved to grow to 547,000. In the process of growing, the Army is also continuing to modularize and move to a brigade-centric structure. As of the time of the conference, the Army

had exceeded its growth goal for FY09, which Campbell attributed to the Army's quality leadership. "It has a lot to do with the young leaders in this room and the thousands like you who influence Soldiers to make good choices in their lives, and, among those choices, they choose to continue to serve our great Nation," he said.

Campbell also addressed the upcoming Base Realignment and Closure moves that will relocate eight of the Army's major commands in 2011. "Life is going to be interesting the next 3 years," he said. "I am confident we will take on all this and get it done." Campbell said he has been asked why the Army would want to make such major moves while modularizing and growing the Army, all in the middle of two wars. "If you're going to transform the Army, and you're going to implement transformational

change, you've got to do it when the resources are available," he said. "In this case, you've got a convergence of resources and a window of opportunity that's closing, so we've got to get this work done."

ARFORGEN

Campbell also discussed the rotational ARFORGEN model, which continues to mature and be refined. He explained how ARFORGEN is a supply-based model and a demand-based process by which the Army is attempting to synchronize the systems of equipping, training, modernizing, mobilizing, and deploying. "We struggle because we are stressed under the many demands for inventory," he explained.

The Army was built on a linear force generation model, and many institutional processes still have not adapted to ARFORGEN just yet. In 2006, the Secretary of the Army approved the rotational model across all components, so there are still many adaptations to be made. "We've got to get a balanced Army to execute a balanced strategy," Campbell said. "We've got to restore some skills that we used to have in abundance."

Fulfilling Capabilities for Full-Spectrum Operations

TRADOC Capability Managers (TCMs) are the user's voice in recognizing and fielding capabilities that enable our Soldiers to achieve full-spectrum operations. TCMs play a vital role in obtaining Soldier feedback regarding armor equipment and then incorporating that feedback into capabilities that can be fielded. COL Jeff B. Swisher, TCM Heavy Brigade Combat Team (HBCT), described his job as the "capability integrator across DOTMPL-PF [doctrine, organization,

GEN Charles C. Campbell, CG, FORSCOM, briefs the 2009 Armor Warfighting Conference audience on challenges facing the Army today and in the future. (U.S. Army photo courtesy of Fort Knox Public Affairs Office (PAO).)

training, materiel, personnel, and leader development, personnel and facility] of the HBCT and, more importantly, the voice of the brigade commander, battalion commander, and Soldiers of the HBCT to TRADOC, the Department of the Army, and wingmen in the acquisition community." Swisher advised that the TCM's "priority is always to support the warfighter." He/she is also focused on units preparing to deploy for combat, as well as future modernization of the BCT. The TCM concentrates on capabilities' survivability, sustainability/mobility, lethality, and interoperability/network battle command.

COL Bill Simril, TCM Infantry BCT (IBCT), advised that TCMs also envision how technologies are being used in their BCT and the possibilities of those technological capabilities. TCMs concentrate on assessing the current way business is done versus how it will work once those technologies are implemented. "Technology does not impress me," said Simril. "What impresses me is putting that technology in the hands of Soldiers and seeing what they can do with it. [Our job is] helping those Soldiers to maximize that technology in their formations."

The TCM works out how best to integrate capabilities without diminishing the inherent capabilities of their BCT. "These technologies must enhance the way the BCT fights, but they cannot fundamentally change it," said Simril. He also advised that the capabilities must be optimized for full-spectrum operations and their benefits need to outweigh the risks. Regarding the technologies in the process of being accelerated into the IBCT (to include

LTG Robert W. Cone, CG, III Corps and Fort Hood, and then-CG, CSTC-A, discusses his perspective on operations in Afghanistan. (U.S. Army photo courtesy of Fort Knox PAO.)

those that are part of the Army BCT Modernization Program (formerly the Future Combat Systems program)), Simril advised that they will give the unparalleled capability of precision at the small unit level. "If we obtain technology that allows us to get the right squad at the right time at the right building," he said, "think about what that does for us."

Swisher advised that TCMs add plenty of capability to BCTs, including both materiel and organizational initiatives. He also advised that TCMs are constantly looking at how to keep equipment—in his case the Abrams Tank and Bradley Fighting Vehicle—relevant to the fight. Regarding organizational initiatives, Army leaders and TCMs examine the HBCT organizational formations and look at where units can be shifted to achieve additional needed capabilities. All of this aids in the Army's mission to successfully conduct full-spectrum operations.

Full-Spectrum Operations in Afghanistan

LTG Robert W. Cone, CG, III Corps and Fort Hood, TX, and then-CG, Combined Security Transition Command-Afghanistan (CSTC-A), gave the audience his perspective on operations in Afghanistan as CSTC-A CG for 18 months, June 2007–December 2008. He explained that there is a "culture of poverty" in Afghanistan. "No matter how you look at [it], this country is poor and short on natural resources," he said.

"Seventy percent of the people are illiterate and innumerate, for that matter. As for trying to develop people, it's a challenge," he continued. "[These people] are charismatic; they've been fighting this war for 30 years, and they are great warlords, but when it comes to managing complex systems, that's where their problem is." Cone explained that the majority of U.S. efforts in Afghanistan need to be placed in helping Afghans manage systems necessary to run their army and government.

A culture of poverty breeds corruption, and Afghanistan is no exception. Cone explained that there is no history of effective policing in Afghanistan;

> If you're going to transform the Army, and you're going to implement transformational change, you've got to do it when the resources are available.

it has always been tribal and religious law. The warlord is the governor, and all his henchmen become the police officers. It is a society based on honor and pride, because that's all they have, Cone said. He also explained that Afghans put family first and will do anything to support their families, even if it means selling or trading opium or other illegal substances.

Afghanistan is 80 percent rural, and in the end, a mixture of central institutions (army and police) will be able to "stitch this country together," Cone said. "After 7 years, [Afghanistan] President [Hamid] Karzai does not appear capable of imposing a strong central government." Another problem is the pervasive narcotics trade, as Afghanistan is the source of 93 percent of the world's opium. "If we go after the drug trade too strongly, it will unite with forces of the insurgency," Cone explained. "We understand that there could be as much as $300 billion a year passing between the drug trade and the insurgency."

"I think we're making very positive strides," Cone said. However, what people don't understand, he noted, is that problems with terrain and

> Progress in the Afghan army is evident through the fact that the country's army leads 51 percent of combat operations.

environment make progress difficult. "We have to take lessons [from Iraq] and make sure we apply the right ones." Cone also stressed the importance of building Afghan capacity, not subordinating it to NATO units. Many NATO countries rotate in and out of the country within 4–6 months, making it difficult to build substantial relationships and trust.

Progress in the Afghan army is evident through the fact that the country's army, which had grown to approximately 134,000 when Cone was there, leads 51 percent of combat operations. Cone's command took the Afghan army's existing infantry battalion and leadership and put them through a 14-week ranger course, which proved to be a successful venture. Cone said the course helped create 7 battalions, with 5 more to build.

The Afghan army is the country's only functioning institution, Cone said, and it has come a long way. "Nothing is more powerful than one of your young Soldiers sitting down with Afghan soldiers, showing them how to do something and showing the willingness that they'll risk their lives and lead by their actions and not by their words; that is what is so powerful with the Afghans," Cone said. "We have that right, above all else."

As our Army continues to wage in the persistent conflict of the past 8 years, it must continue to adapt to conducting full-spectrum operations. As reiterated by MG Donald M. Campbell Jr. at the conclusion of the Armor Warfighting Conference, "What we were about this week is warfighting; warfighting at the end of the day is making sure that we put Soldiers on the ground and they are as ready as they could ever be with the most lethal, the most survivable, most sustainable kit we can give them." The Armor Force and the Army as a whole must continue to provide Soldiers with those capabilities in a full-spectrum environment.

MG Donald M. Campbell Jr., 42nd Chief of Armor, advised that the Army's Armor Force is meeting the challenges of the full-spectrum fight. (U.S. Army photo courtesy of Fort Knox PAO.)

JACLYN PITTS provides contract support to the U.S. Army Acquisition Support Center (USAASC) through BRTRC Technology Marketing Group. She holds a B.S. in journalism from West Virginia University and a B.S. in criminal justice from Kaplan University.

KELLYN D. RITTER provides contract support to USAASC through BRTRC Technology Marketing Group. She holds a B.A. in English from Dickinson College.

The Way Ahead for Field Artillery (FA)— A Joint Collaboration for Success

Whitney F. Pyle

In this era of persistent conflict, the U.S. Army FA community is facing and adapting to a breadth of unprecedented challenges to continue to defeat adversaries on the battlefield. Headquartered at Fort Sill, OK, the FA's mission is to be the Army's integrator of lethal and nonlethal weapons across the full spectrum of operations.

Detachment 1, Alpha Battery (Btry), 2nd Battalion (Bn), 4th FA Regiment (Regt), Soldiers from Fort Sill fire a Guided Multiple Launch Rocket System at a building where insurgents were storing explosives and a nearby weapons cache in the open desert near Bayji, Iraq. (U.S. Army photo by SGT Richard Rzepka, 1st Brigade Combat Team, 101st Airborne Division Public Affairs.)

21st Century Fires Challenges

Army FA continually strives to develop new technologies and fire support assets that are effective on today's battlefield, with the goal being to keep U.S. forces the most lethal and agile in the world. As overseas contingency operations (OCO) requirements are constantly evolving, the FA community is dealing with new challenges in keeping U.S. forces' fires support relevant. These adversities include globalization, shifting demographics, weapons of mass destruction, climate changes, and fragile states where our forces are fighting. FA is shifting its priorities and implementing new strategies to combat these challenges. Looking to the future, FA will focus on five initiatives to ensure that our forces continue to be the most dominant on the battlefield.

First, the FA community will recruit and retain quality Soldiers, leaders, and civilians by executing branch-specific training, leveraging lessons learned from the field, and providing recommendations to senior leaders on the personnel life cycle and career path of

Marines with Mike Btry, 3rd Bn, 11th Marine Regt, fire an M485 Illumination Round from their M777A2 Lightweight 155mm Howitzer at a designated target during their Tactical Air Control Party qualifications Nov. 6, 2009. (USMC photo by LCpl Andrew Thorburn, USMC Air Ground Combat Center.)

FA members. Second, there will be a greater focus on leadership development and growing joint fires professionals for the Army. The objective is to produce the world's best trained and most effective fires warriors and leaders. Third, it is imperative for FA to support the current fight while incorporating the Army Force Generation Model—this means resetting, retaining, and revitalizing the present FA force. Fourth, there is a need to transform the force and instill a proactive mindset for our Soldiers. Instead of waiting to react, the FA force must be able to anticipate warfighter requirements and advocate the appropriate resources necessary to provide for ever-changing needs. Lastly, FA will further engage with the joint community to develop a culture of outreach, communications, collaboration, and coordination among all components of the U.S. military.

As the FA community embarks on accomplishing its top initiatives, a joint

effort is necessary for success. Army FA is making strides in collaborating with the Army Special Operations Forces (ARSOF), U.S. Marine Corps (USMC), and U.S. Air Force (USAF) to ensure superior fires support for all U.S. forces.

A Focus on Airspace Integration

During a presentation at the 2009 Fire Support Seminar, Fort Sill, USAF Director of Operation Planning, Policy, and Strategy MG William Rew said that a closer relationship between U.S. air and ground forces is needed. "Technology is at a state where we [USAF] can better support the ground warfighter," he said. The changing nature of conflict and challenges in dealing with irregular warfare has brought on a shifting air power focus. Because of increased airspace use by the different services, new doctrinal relationships are being established to ensure the most effective use of that space. According to the Combined Force Air Component Command, airspace is the least understood aspect of OCO. Currently, USAF and the Army are working to clarify airspace restrictions. They are focusing on integration and synchronization, rather than just de-confliction, to ensure that airspace is safe and effective for all U.S. forces.

Marines with Btry D, 2nd Bn, 14th Marine Regt, set up a firing position in a HIMARS during a test fire at Camp Barber, Afghanistan, Feb. 15, 2009. HIMARS is able to launch its weapons and move away from the area at high speed before enemy forces can detect the launch site. (USMC photo by LCpl Ronald Stauffer, Special Purpose Marine Air Ground Task Force-Afghanistan.)

> There is a need to transform the force and instill a proactive mindset for our Soldiers. The FA force must be able to anticipate warfighter requirements and advocate the appropriate resources needed to provide for ever-changing needs.

Establishing Fires Support in ARSOF

ARSOF doesn't own terrain, but rather, always operates in conjunction with someone else's territory. Additionally, it is the only maneuver force in the Army that doesn't have its own organic fires capability. In 2004, ARSOF began a pilot program to integrate a fires division into its force with the goal of achieving greater integration and interoperability between all of the U.S. services. Since the program began, it has made great strides in both lethal and nonlethal fires incorporation. Because of the network structure of insurgent groups, ARSOF employs both systematic and dynamic targeting to disrupt these networks. ARSOF has successfully embedded fire support elements at the Special Forces Group

and battalion levels and is currently developing specific ARSOF fire support doctrine. Looking to the future, ARSOF hopes to better meld targeting and fires processes with precision systems; develop and integrate its requirements and tactics, techniques, and procedures into emerging fire support doctrine; and partner with other services on new fire support development.

USMC Fires Developments

USMC's goal is to be most ready when the Nation is least ready. Leveraging its agile and adaptable troops, USMC is upgrading its fire support tactics to help develop a more effective and efficient fires strategy for all joint services. Examples of USMC contributions to the Nation's fires assets include the

High-Mobility Artillery Rocket System (HIMARS), Expeditionary Fire Support System (EFSS), and the M777A2 Lightweight 155mm Howitzer.

A joint Army and USMC initiative, HIMARS engages and defeats enemy artillery, air defense concentrations, trucks, light armor, and personnel carriers, as well as protects friendly troop and supply concentrations. HIMARS is able to launch its weapons and move away from the area at high speed before enemy forces can detect the launch site. The EFSS is a mortar-based system that provides mobile fire support for expeditionary forces by using a 120mm rifled towed mortar that can fire ammunition. The mortar system has a range of 8.2 kilometers (5.8 miles) and works in conjunction with HIMARS. Deployed with the Army and USMC, the M777A2 Lightweight 155mm Howitzer is rapidly deployable and provides accurate fire support—accurate enough to target individual rooms within a building, reducing the chance of innocent casualties and allowing supporting fire to be brought down much closer to friendly troops.

The Future of FA

The FA community's goal is very clear—to develop agile, adaptive, and decisive FA forces that provide the right fires and effects in the right amount at the right time in support of all U.S. warfighters. By incorporating new ways of thinking and collaborating with the different services, FA can ensure that our Soldiers on the frontlines will continually be equipped with the most effective and lethal fires support assets available—for both the current and future fight.

SrA Sorie Bangura, 332nd Expeditionary Operation Support Squadron, monitors the airspace over Iraq. New doctrinal relationships are being established between the U.S. forces to ensure the most effective use of airspace. (USAF photo by SrA Brian Ferguson.)

WHITNEY F. PYLE is an editor for *Army AL&T* Magazine and supports the U.S. Army Acquisition Support Center through BRTRC Technology Marketing Group. She holds a B.A. in English from Virginia Tech.

General Motors (GM) Partners With Army's Yuma Proving Ground (YPG)

Mark Schauer

Army testers at YPG have full access to GM test tracks such as this one pictured, which can accommodate vehicles with axle loads as heavy as 18,000 pounds, a hefty enough capacity to accommodate nearly 80 percent of all wheeled military vehicles. (U.S. Army photo by Mark Schauer.)

At first glance, the Army and GM have little in common. However, both entities need to test vehicles for reliability in all kinds of conditions: GM to provide high-quality automobiles to consumers and the Army to ensure that America's Soldiers have the most reliable equipment possible on any potential battlefield.

The need of both parties for a specialized hot weather automotive test facility recently led to a groundbreaking partnership between the Army and the Nation's largest auto company, GM, to share a state-of-the-art test complex constructed on the vast expanse of the second largest Army installation in the Nation—YPG, in Southwest Arizona. The 2,400-acre complex was dedicated amidst great fanfare in July 2009.

"In the early stages, it wasn't clear that things would come out this well," said Ken Morris, GM's Executive Director for Vehicle Integration and Proving Grounds. "It took a great deal of work from both GM's team and the Army's to make it happen."

Desert Testers

Unlike the typical Army installation, YPG's mission is not primarily the training of troops, but the test and evaluation of armaments and equipment. Of the approximately 2,500 individuals employed at YPG, less than 200 are uniformed personnel.

The genesis for the partnership between the Army and GM was in the 1990s. During the first Persian Gulf War,

> The facility is significantly more compact than its predecessor in Mesa, yet boasts a wealth of capability the Army needs.

Army officials were troubled by a spike in tire blowouts in combat areas overseas caused by high temperatures and continuous driving at high speeds. Although YPG was the Army's premier hot weather test site, it lacked a sufficiently specialized facility to conduct continuous high-speed testing on paved roads. DOD recognized the need for such a facility, but the high cost of constructing one was prohibitive at a time when the end of the Cold War and efforts to balance the federal budget combined to squeeze military budgets. In response to these hard facts, a legal device called enhanced use lease (EUL) was developed to allow the military to lease government property to private sector entities whose business may be relevant to military needs.

Meanwhile, GM was seeking to relocate from its 50-year-old hot weather test track in Mesa, AZ, that was both antiquated and situated on prime land in one of the Nation's hottest real estate

markets. GM officials responded to a solicitation letter sent to them and other auto companies by Army officials seeking an EUL partner for desert testing. GM was one of eight automotive industry companies given tours of the potential site and expressed the most interest of any contender.

There were several other tantalizing benefits to locating at YPG. At their previous location in Mesa, photographers in the employ of GM's competitors or automotive industry publications could surreptitiously take pictures of new cars under test from recently constructed houses adjacent to the once-isolated facility. On the ranges of YPG, urban encroachment is not a threat. Additionally, the busy airspace over the proving ground is restricted to military aircraft. "Building at YPG meant we never again would have to worry about spy photographers crawling over the fence," said Morris.

On the other side of this overpass is the ride and handling track, which has intentional defects ranging from mildly annoying tar strips and short waves to multiple waddles and deep troughs that bounce the stomach into the throat. The overpass is one of two circular tracks that simulate freeway driving. (U.S. Army photo by Mark Schauer.)

GM's facility is significantly more compact than its predecessor in Mesa, yet boasts a wealth of capability the Army needs. The 14,000 square-foot shop floor has 40 vehicle bays outfitted with computerized equipment and sensors. (U.S. Army photo by Mark Schauer.)

The partnership was finalized in May 2007, by which time word of GM's potential relocation to YPG had been exciting Yuma business leaders for months, and for good reason. The proposed $100 million facility would provide welcome economic growth to the burgeoning county where YPG is already the largest single employer of civilians. GM's well-known financial struggles the next year filled these same people with worry, but the project was spared. "There was severe pressure to cut costs," recalled Frank West, GM's Desert Proving Ground Manager. "Sometimes that can fracture a team, but we buckled down and worked together to make a lot of tough choices."

They also faced challenges that were atypical for a corporate construction project. YPG's distant history as a training facility for mechanized troops during World War II meant the possibility of hazards from old land mines or other live shells. A thorough sweep for unexploded ordnance had to be conducted prior to groundbreaking, as did additional environmental assessments.

This task was completed in February 2008 as architects put the finishing touches on the track's design. GM's headquarters approved the design and directed construction to begin in May of that year.

The Tracks

Despite its recent struggles, a visit to the new test track demonstrates that GM knows cars well. The entire facility, from the rows of cubicles in the administration building to the track itself, radiates a palpable aura of cool, minimalist corporate precision. The 14,000-square-foot shop floor is brilliantly illuminated and spotlessly clean and accommodates rows of brand new GM models, some outfitted with camouflage over their trim. Each of the 40 vehicle bays is outfitted with computerized equipment and sensors. Exhaust from running vehicles is vented out

through long plastic tubes that disappear into receptacles in the floor. The facility is significantly more compact than its predecessor in Mesa, yet boasts a wealth of capability the Army needs.

"This complex is efficient and state-of-the-art," said West. "It is better suited to what we are doing. In Mesa, we were scattered over a dozen buildings, while here we are in one. Everyone is just a few steps away from the garage."

Outside the garage are bays for weighing, washing, and vacuuming test vehicles. Stacks of seat-shaped weights ready to place in vehicles stand nearby. Across the way are more than a dozen covered fuel pumps with various grades and blends of gasoline and diesel, including alternative fuels. Just before the entrance to the first track is a set of grades with various degrees of steepness

This test facility is in one of America's most pristine deserts, and GM intends to take full advantage of the environment.

> This track is an outstanding capability for the Army because the agreement allows it to be used for testing and training, and, more importantly, for both manned and unmanned vehicles.

to test brakes and transmissions. The two parallel straightaway tracks that simulate freeway driving, complete with overpasses and exits, already have skid marks from screeching brakes, as does the 1,000-by-1,000 foot vehicle dynamics pad, a flat, unmarked swath of asphalt in which the depth of the asphalt throughout varies by less than the width of five sheets of paper. Testers evaluate vehicle handling on this pad by negotiating an orange cone slalom and then driving fast through a "J" turn, a sharply banking horseshoe curve that opens onto the wide asphalt. Surrounding all of this is the 3.5-mile-long circular track. The top speed on this track is 150 miles per hour (mph). Vehicles exceeding 100 mph need to secure permission prior to the test.

This test facility is in one of America's most pristine deserts, and GM intends to take full advantage of the environment. One structure along the track is referred to as the soak shed, but vehicle torture chamber might be a more applicable term. After running a vehicle around the circular track at high speeds for an extended period of time, testers park the vehicle inside one of the tall, unventilated trio of garages to bake—courtesy of the unrelenting summer sun. Afterward, drivers start up the vehicle, crank up the air conditioning, and continue doing laps around the track to see how much heat stress the car can take without overheating or vapor locking.

Perhaps the most fascinating of the courses is the ride and handling track, in which virtually every less-than-pristine road condition one can think of is re-created. The intentional defects

along this track range from mildly annoying tar strips and short waves to multiple waddles and deep troughs that bounce the stomach into the throat. All of these, and more, are helpfully marked with highway-worthy blue signs identifying their flaws.

Army testers at YPG have full access to these roadways, which can accommodate vehicles with axle loads as heavy as 18,000 pounds, a hefty enough capacity to accommodate nearly 80 percent of all wheeled military vehicles. Additionally, a clause in the EUL agreement grants YPG the right to drive 10,000 miles per year with vehicles having axle loads as heavy as 10 tons, giving testers leeway with vehicles that have been slightly up-armored. The majority of the tracks can support vehicles with a gross vehicle weight of 80,000 pounds, about 20 times heavier than GM's largest sport utility vehicles. YPG also has the option to use another GM test track in Milford, MI.

All of these other options will be mere "icing on the cake" upon completion of a 4.5-mile-long paved oval and a 4-mile gravel oval track that can accommodate high-speed testing of both wheeled and tracked vehicles in the Army's inventory, including the wheeled vehicles too heavy to be tested at the GM facility. Also in the planning stages is a paved 2-mile performance straightaway specifically designed for precise vehicle performance measurements. The paved and gravel ovals are expected to be completed by spring 2010, but the proving ground staff is already busy making good use of the existing tracks. "Access to this facility gives us many

new capabilities," said Zack El-Ansari, YPG's Combat Automotive Division Director. "We've already certified our first six drivers."

A New Day

By the time the last of the assembled dignitaries and media representatives drifted out of the complex on its dedication day in July, the desert sun was shining as usual. The new test track was clearly in the prime of its usefulness amid the rapidly rising temperature and unrelenting heat, and the officials whose vision made this complex a reality were already looking ahead to the distant future, fitting for a complex with a 50-year lease with options for renewal. Among them was Graham Stullenbarger, the now-retired YPG Natural Environments Test Office Chief.

"This track is an outstanding capability for the Army because the agreement allows it to be used for testing and training, and, more importantly, for both manned and unmanned vehicles," said Stullenbarger. "When the Army moves into robotic vehicles, we'll have an ideal place to test."

The representatives of GM could appreciate Stullenbarger's forward-thinking stance. "Each day, our team is going to get to know the YPG team better, and it'll become very natural to share things and work through things together," said Morris. "That makes me happy, for it is indicative of the new GM."

"The cultures of YPG and the new GM facility are very similar," concurred West. "We are relatively small groups of extremely talented people who love doing what we do. It is a relationship that will last for a long, long time."

MARK SCHAUER is a public affairs writer at YPG. He holds a B.A. in history from Northern Arizona University.

Warfighters Discuss Vehicle Performance at Ground Combat Vehicle Conference

Chris Williams

During the final day of the National Defense Industry Association's (NDIA's) Ground Combat Vehicle Conference, held Oct. 12–14, 2009, in Dearborn, MI, U.S. Army TACOM Life Cycle Management Command (LCMC) community members received a rare opportunity to hear directly from the users of the products they work with on a daily basis.

A Stryker vehicle stands mission ready in a motor pool at Camp As Sayliyah in Qatar. Throughout the ground war in Southwest Asia, the Stryker's speed and maneuverability assisted Soldiers in quickly securing cities and performing a variety of operational missions. (U.S. Army photo by Dustin Senger.)

On Oct. 14, 2009, four speakers from various military branches addressed conference attendees, thanking TACOM LCMC associates for the work they put into the Army's ground vehicle systems and giving feedback on enhancements that could increase system capabilities. "To me, this is the most exciting part of this conference because today we have here the patriots who put the red, white, and blue all over the world," stated Panel Moderator MG (Ret.) Julian Burns. "Each of these gentlemen has wartime experience, many with multiple tours. This is about winning battles, and we've got the men here who know how to do it."

LTC Keith Barclay regaled attendees with praise about the Army's fleet of armored and tactical ground vehicles during his deployment to Iraq. Barclay's battalion used a variety of vehicles to complete its mission, including the Bradley Fighting Vehicle (BFV), the M1 Abrams Main Battle Tank, Mine Resistant Ambush Protected vehicles, and High-Mobility Multipurpose Wheeled Vehicles. Barclay lauded the vehicles' performance, sustainability, and survivability under very challenging environmental and operating conditions, acknowledging that the M1 Abrams was invaluable in penetrating

> We always want to provide our warfighters with as much protection as we possibly can, but we can never lose sight of the fact that the mission must be accomplished.

city areas while the BFV's maneuverability made it an ideal patrol vehicle. "We could not achieve surprise or match the enemy without the use of our combat vehicles," Barclay commented. "Of the eight Soldiers our unit lost in Iraq, all of them were to dismounted operations—not one was lost in a BFV or a tank during our 15-month deployment."

LTC Scott Leonard, U.S. Marine Corps (USMC) 1st Light Armored Reconnaissance Battalion, highlighted the importance of Light Armored Vehicles during his time on the Iraq-Syria border. Marines in Leonard's battalion operated more than 465,700 miles and 45,400 hours during their time in Iraq, much of which occurred in the desert, where the Marines lived off the vehicles. Leonard commented that the vehicles performed "magnificently," and he urged the conference to keep survivability in mind when designing future vehicles, but not at the

expense of lethality. "You can design a bubble to put warfighters in, keeping us safe from almost any harm. I truly believe that. But you have to balance that by understanding the turning point where the vehicle is no longer lethal, where the warfighter is put into such a bubble that reduced situational awareness takes away the ability to complete the mission," Leonard continued. "We always want to provide our warfighters with as much protection as we possibly can, but we can never lose sight of the fact that the mission must be accomplished."

COL John Hort provided a dramatic account of how armored ground vehicles saved lives during the battle of Sadr City in March 2008. During this attack, militias from throughout Iraq converged in the city and engaged U.S. forces, firing as many as 86 rocket attacks into the Green Zone. With attacks coming from high-rise buildings and roadside improvised explosive

A panel of warfighters addresses the NDIA's Ground Combat Vehicle Conference and speaks about the role ground vehicles played in completing missions and keeping Soldiers safe. From left: COL John Hort, MSG Brad Kelley, USMC LTC Scott Leonard, 1SG Brandon Barnett, and LTC Keith Barclay. (U.S. Army Tank Automotive Research, Development, and Engineering Center (TARDEC) photo by Chris Williams.)

An M1A1 Abrams tank uses mine rollers to clear a palm grove of landmines in Iraq. Armored and tactical vehicles played crucial roles in penetrating, securing, and patrolling cities throughout Iraq and assisting in operational missions to keep warfighters safe. (U.S. Army photo by SPC Chase Kincaid.)

> Thank you for what you provide to the Soldier. The Soldiers who are still with me today are here largely because of what you provided to them.

devices, smaller lightly armored vehicles were unusable. Hort revealed that in less than 48 hours, his battalion switched from a motorized fleet to one comprised of BFVs, tanks, and other armored vehicles. The difference was crucial, as the armored vehicles provided the firepower and support needed to engage the enemy and provided the Iraqi army with the confidence to further pursue enemies after the militias had been driven back and defeated. "The tanks and Bradleys became my bread and butter for protecting our Soldiers so that we could go after the enemy," Hort stated. "The enemy couldn't compete and keep up with our American Soldiers or the technology and the armament protection that we brought to bear."

MSG Brad Kelley rounded out the panel by commenting on the Stryker Combat Vehicle's performance during an incident on Baghdad's Haifa Street in January 2007. Kelley's battalion received a call that an Iraqi Army battalion commander was pinned down by enemy fire in a downtown area. Kelley's battalion used Strykers to cordon off the street, enabling U.S. Soldiers to move to their positions and safely engage the enemy. Kelley stated that the vehicles' size and speed allowed Soldiers to quickly secure the area. "The Soldiers in the Strykers were the first ones to make contact and faced small-arms fire. They stayed mounted up and moved to their positions, returned fire, held the enemy, and pretty much put down the amount of fire that was coming at them," he explained. "Speed and lethality are key; the vehicle is light and agile and can quickly get where it needs to go. We were able to pick up and move on a moment's notice."

The panelists closed by urging those throughout the TACOM LCMC community to continue providing the best equipment possible, and offered feedback on changes in communications, survivability, and lethality that would allow them to complete missions safely and more effectively. "As a Soldier using today's equipment, you have to look at what you have, do the best with it, and, through lessons learned, look for trends that will continue to make us the most modern, lethal, and nonlethal Army in the world," stated Hort. "Thank you for what you provide to the Soldier. The Soldiers who are still with me today are here largely because of what you provided to them."

CHRIS WILLIAMS is a Writer/Editor with BRTRC and provides contract support to TARDEC's Strategic Communications team. He holds a B.A. in communication from Wayne State University, and has previously written for *The Source* newspaper in Shelby Township, MI, and *The Macomb Daily* and C & G Newspapers in Macomb County, MI.

LEAN SIX SIGMA/BUSINESS TRANSFORMATION

Renee Kelly (left front) discusses her LSS Green Belt Project, Missile Backorder Processing, with team members Carrie Caldwell, Bethany Marbut, and Debra Brenner, all from Project Office JAMS. (U.S. Army photo by Deanie Blankinchip.)

A Tool Set for Cultural Change and Operational Efficiency

Frank J. De Luca Jr.

I get the distinct pleasure to serve daily on the Program Executive Office (PEO) Missiles and Space (M&S) staff. One of my key duties, in addition to facilities, operations, and security, is serving as the Deployment Director for Business Transformation. Consequently, I am involved at both the management and execution levels of our business operations, looking across the entire PEO at our people and their business processes. Our objective is to provide efficient and effective products and services to our Nation's warfighters. Overall, I think that we do a fantastic job supporting our Soldiers; yet, realistically, we can always get better.

Recall the old high school mathematics example: relative to two points and continually dividing the distance between the two, the two points never touch. The reason is that there are infinite possibilities when you continually divide the distance between those two points; you never get there. In reality, that distance mathematics example applies to our current business practices. If you believe that what we do today can never get any better, then you simply ignore the infinite possibilities that continuous process improvement (CPI) brings to the Army business process of warfighter support.

In our PEO, I have seen dedicated people use continuous improvement tool sets to positively influence their world. In this article, I will share a few of those examples with you. Additionally, over the next few issues of *Army AL&T* Magazine, there will be a series of articles that will cover other examples that will discuss the practical application of CPI tool sets, such as Lean Six Sigma (LSS), that we use in our ongoing efforts to achieve process improvement, but more importantly, institutional and cultural change.

Joint Attack Munition System (JAMS) LSS Project

In the first accompanying article to this series on Page 47, we cover a very important project that COL Michael Cavalier, JAMS Project Manager, and his team initiated to address the HELLFIRE Missile Captive Carry project. For those of you who do not know Cavalier, he is a seasoned and innovative leader who is not afraid to accept change, try something new, and measure it solely on its contribution to the success of his people, program, and organization.

> If you believe that what we do today can never get any better, then you simply ignore the infinite possibilities that CPI brings to the Army business process of warfighter support.

What makes Cavalier a more effectual leader is that he is a recent Department of the Army-certified LSS Green Belt.

Understandably, Cavalier's diverse knowledge and broad experiences have fully prepared him to deal with the daily challenges of project management. However, to his personal and professional armory, he added a collection of LSS tools, techniques, and practices that he and his JAMS team used to address issues on the HELLFIRE missile. The team recognized the need to improve the efficiency and effectiveness of their system, and they improved the process using LSS. In their daunting, yet rewarding, task of implementing process improvement and cultural change, they are not alone. They are joined by BG Genaro Dellarocco, Program Executive Officer M&S, who is our organizational leader and LSS champion. Dellarocco literally and figuratively starts every day Lean, and he has created the operational and leadership environment that enables Cavalier and LSS to flourish and culturally evolve at a time when our Army needs it most.

LSS Benefits

It is no secret that our warfighters have more mission requirements than available dollars to meet critical mission needs. Consequently, other Army leaders, such as LTG N. Ross Thompson III, Principal Military Deputy to the

Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT), have fostered the deployment and use of CPI tools such as LSS to close the gap between critical mission requirements and total available dollars.

When it comes to critical mission requirements, there is an equally and institutionally compelling need to qualify, quantify, and justify Army capital investment. What most personnel are not aware of is that LSS actually provides project managers and operational leaders with an organized and integral process tool set that provides logical, validated, and defendable financial rationale to make more informed and lasting business decisions. Therefore, in our fiscally constrained environment, LSS provides a proven methodology to reduce operating costs and justify requirements simultaneously, while increasing the overall efficiency and effectiveness of providing products and services to our Nation's warfighters.

With regard to the LSS tools and methodologies, I think we all can slightly modify the old idiom that says "it is poor craftsmen who blame their tools" to what I think is more reflective of the LSS cultural environment—"it is poor craftsmen who refuse to use good tools." Or, maybe a better corollary is that if ignorance is bliss, then some folks are exceedingly blissful relative to the benefits that can be derived by using LSS tools in their business process environment.

COL Michael Cavalier, JAMS Project Manager, and his team used LSS to address the HELLFIRE Missile Captive Carry project. Pictured here is the HELLFIRE missile. (U.S. Army photo by Deanie Blankinchip.)

PEO M&S LSS Projects

Within PEO M&S, we have many individuals doing LSS projects. We collectively know that project activity, in and of itself, is not enough to achieve the Army's ultimate needs. We see the evolution of revolutionary practices, like those being implemented by Cavalier and his team, as the practical and imperial evidence to move from individual project completion to organizational cultural change, enabling all team members to demand the use of CPI and LSS as integral parts of their day-to-day activities.

True cultural change and its accompanying demands start to take root when leaders, managers, and employees alike begin to attack organizational problems using LSS. For example, Misty Glover, an intern in our Close Combat Weapon System (CCWS) Program Office, used LSS to develop a standardized training template, where none previously existed, for program management, business management, contracting, and engineering interns throughout our PEO. Bill Breffeilh, Deputy Program Manager (PM) Non-Line-of-Sight (NLOS), used the same tool set to address and resolve a process problem impacting the public release of information for his program. Then, Darryl Colvin, PM Lower Tier Project Office (LTPO), was able to perform a detailed analysis of contractor workload to his weapon system baseline using that exact same tool set. The result was four people, attacking four different issues, using one common tool set, implementing CPI to achieve cultural change and organizational excellence.

Consequently, beyond the core meat and technical potatoes of any LSS project, there is the pure human element—one where cultural change agents in the ASAALT office use a simple CPI process tool set that many would ignore, discount, or fain, and simply roll up their sleeves and make things better. They did this not because

An SH-60B Sea Hawk helicopter assigned to the "Wolfpack" of Helicopter Anti-Submarine Squadron Light 45 launches an AGM-114B HELLFIRE missile at a small boat target. (U.S. Navy photo by Austin Long.)

they have to, but because they want to. Realizing that beyond providing important operational results or aligning to strategic objectives, they made it better for themselves at the functional level. They achieved incremental organizational change using small process steps to effectively influence their day-to-day activities and contribute to their organization's cultural change.

Collectively, LSS practitioners embrace organizational innovation in a demonstrative manner that declares, for all employees to see and hear, that good enough is just not good enough. They openly state and factually demonstrate that, to quote Yogi Berra, "The future ain't what it used to be." Ultimately, seeking to prove that they are personal and professional change agents, they instinctively know that they made things better for themselves institutionally, while providing more efficient and effective products and services to our Nation's warfighters.

In our JAMS, CCWS, NLOS, and LTPO examples, these projects would never have happened without individual leadership that empowers employees to walk out from the crowded sidelines, lead by example, and try something new. This empowerment leads to achieving organizational innovation by challenging the often ingrained mindset "we've always done it that way" and by actually changing the ways we do business. This ultimately proves that in

the infinite possibilities of outcomes, we have moved the two points of CPI and strategic goals closer together using LSS as the tool set to affect cultural and organizational change.

I hope you found this article worth your time. Please see COL Cavalier's accompanying article, "Lean Six Sigma—Theory to Practice in Joint Attack Munition Systems," on Page 47. We in PEO M&S would like you to read about our other projects in upcoming articles and to participate in CPI to help our Army processes to become less cumbersome.

FRANK J. DE LUCA JR. is the Assistant Program Executive Officer for Strategic Planning and Operations, PEO M&S, Redstone Arsenal, AL, and a retired U.S. Air Force colonel with 31 years of service. In November 2006, he was recruited from industry to be an Army civilian. He holds a B.S. in aviation business management from Embry Riddle Aeronautical University and an M.A. in contracting from Webster University. De Luca is certified Level III in program management and life-cycle logistics and holds an LSS Black Belt certification.

LEAN SIX SIGMA/BUSINESS TRANSFORMATION

Pictured are some of the fixed-/rotary-wing aircraft and UAVs that use the missiles, rockets, or small guided munitions supported by the JAMS Project Office. (U.S. Army photo by Deanie Blankinchip and Gloria Bell, JAMS Project Office Graphics Department.)

Lean Six Sigma (LSS)—Theory to Practice in Joint Attack Munition Systems (JAMS)

COL Michael Cavalier

LSS is an Armywide initiative to sustain effectiveness and improve efficiency. From an enterprise perspective, a properly employed LSS program has the potential to significantly decrease the cycle time associated with the acquisition process and substantially reduce the cost of weapon systems. The JAMS Project Office has applied LSS across the products of the project office with a single objective—to provide the best capability to warfighters. This article discusses a multigenerational project initiated to improve our data collection capabilities on the HELLFIRE missile. Analysis of HELLFIRE data allows for optimizing maintenance processes at the HELLFIRE Maintenance Depot (HMD) in Anniston, AL, which reduces cycle time and improves availability of missiles to deployed units.

The JAMS Project Office's mission is to provide joint warfighters with effective and efficient life-cycle management of a myriad of critical air-to-ground missile and rocket weapon systems. The JAMS team is committed to providing aviation forces with the right weapons at the right time at the right place. The team manages five separate missile/rocket systems: the Joint-Air-to-Ground and HELLFIRE missiles, the Viper Strike and Griffin small guided munitions, the 2.75 Hydra Rocket, and all the associated launchers. Inherent in our mission is the imperative to continuously improve our support to the joint warfighter community. Recently, we experienced groundbreaking success using LSS tools and techniques to evaluate and improve programmatic processes, especially those directly associated with our high-demand weapon systems.

The initial focus of our LSS projects was to eliminate nonvalue-added (NVA) tasks and reduce cycle times associated with internal transactional processes. While transactional process improvement projects provide excellent training and certification opportunities, it is often more difficult to show how the benefits achieved provide an immediate impact to the combatant commander. However, as the JAMS team establishes a solid base of Green and Black Belt practitioners and mentors, our focus is shifting to more complex projects directly aligned with our weapon systems. One such project, the HELLFIRE Captive Carry Data Monitoring project, is described in this article using the framework of the 5-phase LSS model: define, measure, analyze, improve, and control.

Define

Before discussing the *define* phase of the HELLFIRE Captive Carry Data Monitoring project, it is important to understand some background information. Our weapon systems were originally designed for short-term

The HMU records the missile's power on time, captive carry time, ambient temperature, and battery life. In this photo, the temperature (23 C) is displayed. (U.S. Army photo by Deanie Blankinchip and Gloria Bell, JAMS Project Office Graphics Department.)

captive carry prior to launch and for operational use in deliberate operations. However, in current operations, our weapons are on-wing for extended periods of time and often employed in less deliberate mission profiles. Extended on-wing captive carry time across the spectrum of aviation platforms exposes missiles to extremely challenging and rapidly changing flight regimes. For instance, unmanned aerial vehicles (UAVs) fly in a relatively high altitude, low temperature environment when compared to helicopters, which generally operate in high temperature environments prone to substantial vibration, erosion, and corrosion. Differences between the design objectives and actual employment methods impact safety, reliability, and availability.

To analyze and assess the impact of operating for an extended period of time in extreme environments on missile safety, reliability, and availability, the LSS model required a robust problem statement, goal statement, and business impact as follows:

• Problem Statement—Currently, no reliable and accurate method/process exists to collect and analyze HELLFIRE missile captive carry hours.

• Goal Statement—Increase the reliability and accuracy of HELLFIRE captive carry time reporting to 75 percent. Accurate HELLFIRE captive carry time affords leveraging the tenets of condition-based maintenance (CBM) initiatives, allowing for procedure development to eventually affect predictive and preemptive actions that will decrease operations and sustainment costs, increase readiness and availability, and reduce the maintenance burden on our Soldiers.

• Business Impact—Eliminating unnecessary reset and repair activities by optimizing our maintenance policy and procedures will significantly reduce cycle time and save money.

Measure

The project's *measure* phase proved to be a challenge because, unlike production processes where examples are plentiful, examples of LSS projects on maintenance processes are not readily available. On the positive side, the HMD had sufficient Pareto data readily available for analysis. The HMD records contain high-fidelity data on all repairs completed at the facility going back several years. Data analysis revealed that the missile's guidance

section accounts for the biggest portion of failures. However, the Pareto analysis could not adequately determine the guidance section's failure rate. The guidance section consists primarily of electronic parts with a few mechanical parts, leading most experts to predict a corresponding low failure rate. Our hypothesis was that we were replacing more components than necessary to minimize cost, reduce cycle time, and maximize missile availability.

While analyzing the Pareto data, we also noticed that the HMD was receiving a large portion of missiles from deployed units with No Evidence of Failure (NEOF). These missiles make up the Refurbish and Container Markings categories on the Pareto. Nearly all of the NEOFs were shipped to the HMD in serviceable condition and able to pass all functional testing. Therefore, most were cleaned, repainted, and returned to serviceable inventory.
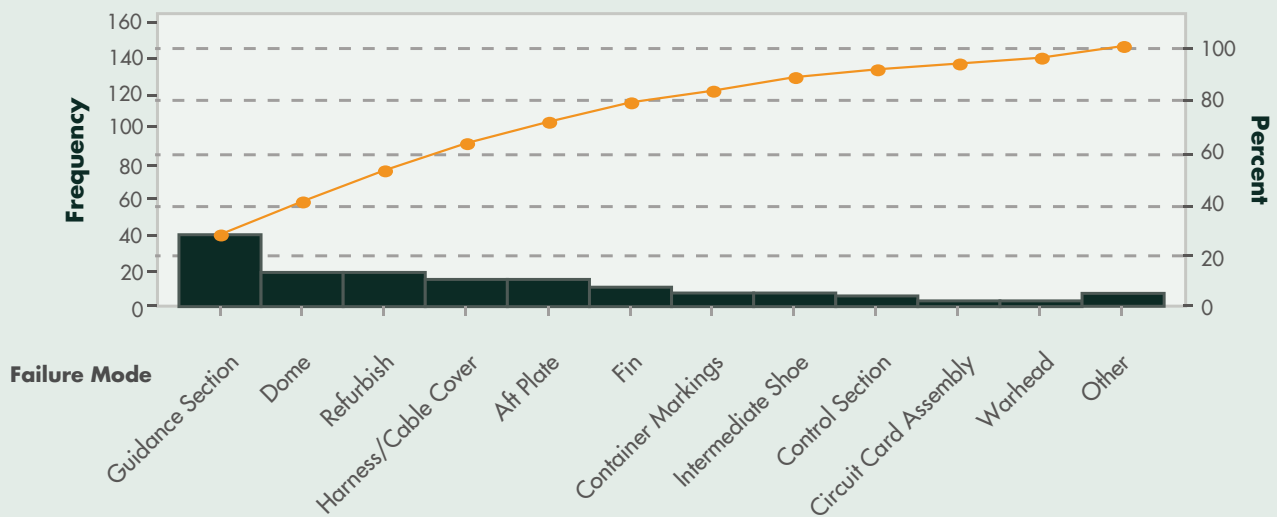
> Analysis of HELLFIRE data allows for optimizing maintenance processes at the HMD in Anniston, AL, which reduces cycle time and improves availability of missiles to deployed units.

The HELLFIRE Captive Carry Data Monitoring project thus became a multigenerational activity by launching a Black Belt action aimed at determining the best way to lean the test and repair process by eliminating NVA tasks. Examples of such tasks are transportation, inventory, and movement associated with NEOF missiles. We need to know if a forward testing and repair facility reduces cost and cycle times while increasing availability in theater. Is it feasible from a business case analysis? Completion of that project will provide us with the answer from thorough analysis of the detailed, factual supporting data.

Analyze

The project's *analyze* phase required an adequate amount of high-quality captive carry time data to calculate the missile failure rate to prove our hypothesis. Fortunately, we had initiated a manual captive carry data collection process at some deployed locations about a year earlier. Unfortunately, the data collection coverage was limited and the quality was barely adequate for analysis. A couple of rapid improvement events were conducted to improve our data collection process and we were then ready to analyze the data collected.

U.S. ARMY HELLFIRE II REPAIR PARETO

Failure Mode	Guidance Section	Dome	Refurbish	Harness/Cable Cover	Aft Plate	Fin	Container Markings	Intermediate Shoe	Control Section	Circuit Card Assembly	Warhead	Other
Frequency	40	19	17	15	12	11	7	7	5	3	3	6
Percent	27.6	13.1	11.7	10.3	8.3	7.6	4.8	4.8	3.4	2.1	2.1	4.1
Cumulative Percent	27.6	40.7	52.4	62.8	71.0	78.6	83.4	88.3	91.7	93.8	95.9	100.0

Based on repair data from 86 HELLFIRE II RESET missiles.

We learned the hard way that it is a good idea to become familiar with *Analysis of Messy Data* by George A. Milliken and Dallas E. Johnson. Using Weibull paper, we plotted the data collected in the field by the HMD maintenance technicians to analyze the failure statistics and failure rates. The Weibull distribution was used because of its flexibility and applicability to maintenance analysis, especially when dealing with small data sets and messy data. The Weibull distribution has a shape and scale parameter that can be used to optimize maintenance activities. For instance, the shape parameter in this project was indicative of a constant failure rate that does not increase over time. In layman's terms, we should institute a "replace on condition" maintenance policy, continue to collect and analyze data, and reevaluate our maintenance policy every 6 months. By using a CBM policy, the estimated savings and cost avoidance is approximately $55 million over a 10-year period.

Improve

The project's *improve* phase concentrated on developing a HELLFIRE health monitoring unit (HMU) and synchronizing our data collection processes with the ongoing aviation CBM programs. The HMU significantly improves the accuracy and quality of data collected, which, in turn, enhances JAMS' ability to monitor and adjust the HELLFIRE maintenance policy. Furthermore, JAMS is coordinating efforts to leverage the existing infrastructure already used by aviation units, such as Unit Level Logistics System-Aviation Enhanced, to pass missile data back to the U.S. Army Logistics

The HMU significantly improves the accuracy and quality of data collected, which, in turn, enhances JAMS' ability to monitor and adjust the HELLFIRE maintenance policy.

Support Agency servers where it can be data mined. Synchronization of future prognostic maintenance requirements will ensure that missile health monitors can pass the small amounts of missile data collected via the standard aircraft bus. Project Management Office (PMO) JAMS, in concert with the Aviation and Missile Research, Development, and Engineering Center and the Aviation and Missile Command's CBM office, is currently fielding the Captive Carry Health Monitor (CCHM) as part of a technology insertion test effort. The first increment of the CCHM collected and displayed power on time, captive carry time, temperature, and battery life. This project has already proven its value based on lessons learned to date. Future increments are now being designed and will leverage more than 12,000 production line missiles.

Control

The *control* phase is the hardest phase of LSS. The improved process must be handed over to the process owner, and the project manager (PM) must ensure that the activity is embedded in routine business. Strong and persistent control and command interest ensure that the process owners understand and accept that the LSS initiative is a long-term solution, not a temporary "good idea." PMO JAMS personnel took the specific

steps of modifying contracts, adjusting parts requisitioning quantities, posting metrics in the "War Room," changing personnel evaluation objectives, and establishing monthly reviews of the continuing progress. Finally, we ask the question, "Where else in the project office, program executive office (PEO), and enterprise can similar techniques be applied to maximize our investments and benefit the warfighter?" The search for continuous improvement continues!

COL MICHAEL CAVALIER is the PM JAMS, PEO Missiles and Space. He holds a B.S. in mechanical engineering and aeronautical science from Nicholls State University, an M.S. in engineering from Louisiana State University, and an M.S. in strategic studies from the Air War College. Cavalier is a U.S. Army Acquisition Corps member and is Level III certified in both program management and test and evaluation.

The HELLFIRE Captive Carry Data Monitoring project thus became a multigenerational activity by launching a Black Belt action aimed at determining the best way to lean the test and repair process by eliminating NVA tasks.

From the Acquisition Support Center Director

I t is hard to believe that we are now embarking on the second decade of the 21st century. Over the last 10 years, the U.S. Army Acquisition Corps (AAC) has provided our Soldiers with rapid logistical support, the best weapons systems, and the latest technology during a time of persistent conflict with our Nation's enemies. As the AAC begins its third decade of service, the Army Acquisition, Logistics, and Technology (AL&T) Workforce must remain vigilant and determined to face the challenges that lay ahead. My hope is that 2010 will be a continuum of the success that the AL&T Workforce has demonstrated thus far.

Farewell

This year brings the retirement of LTG N. Ross Thompson III, Principal Military Deputy (PMILDEP) to the Assistant Secretary of the Army for AL&T (ASAALT); Director, Acquisition Career Management (DACM); and Director, AAC. He leaves the Army with more than 35 years of service to our country. LTG Thompson took over the reins as DACM in November 2006 and brought leadership and commitment that will have a lasting impression on AL&T Workforce professional development for years to come. Here is just a small portion of his successes:

- Developed civilian leaders, allowing them to compete for leadership positions on a more even playing field.
- Revamped the Military Acquisition Position List process to a more equitable distribution method.
- Championed to keep military authorizations when Congress mandated growing the civilian acquisition workforce.
- Actively supported the Army's plan for implementing the *Defense Acquisition Workforce Development Fund*, resulting in increased AL&T Workforce growth and expanded career opportunities.
- Provided updates to Congress on Army acquisition programs and AL&T Workforce matters.
- Gave direct support to the Commission on Army Acquisition and Program Management in Expeditionary Operations as it reviewed Army contracting challenges.
- Led, supported, and created an Army Materiel Enterprise concept with specific focus on human capital initiatives.
- Developed a path ahead/strategic concept regarding the Army Acquisition Center of Excellence that created acquisition synergy and resource savings.

- Incorporated the Intermediate Qualifications Course for Acquisition Officers.
- Directed the strategic implementation plan to grow the Army acquisition workforce as per the Secretary of Defense-directed initiative (April 6, 2009).
- Reemphasized focus on the quarterly Acquisition Career Management Advocate (ACMA) video teleconference that brings all ACMAs together to discuss top acquisition workforce initiatives and stress certification of employees through an organizational view.
- Put supervisors to task on certification of acquisition personnel.
- Created the *Get Well Memo* (*Guidance Memo #3*) that led to a significant increase in certification Armywide by 50 percent.
- Held leadership accountable for ensuring that the AL&T Workforce adhered to *Defense Acquisition Workforce Improvement Act* requirements and intent.
- Placed continual emphasis on certification, Individual Development Plans, and Continuous Learning Points, showing workforce members how critical it is for them to meet these standards.

Serving as LTG Thompson's Deputy DACM, I have professionally and personally gained from following his leadership and by watching his commitment to making the AL&T Workforce the premier acquisition labor force it is today. His dedication reflects the very best in Army leadership. On behalf of the AL&T Workforce, I congratulate LTG Thompson on his retirement from an exemplary Army career, and I wish him well in his future endeavors.

As we say goodbye to LTG Thompson, we welcome our new PMILDEP, DACM, and AAC Director, MG(P) William N. Phillips, who was recently confirmed by the Senate. He comes to us after serving as the Commander, Joint Contracting Command, Iraq-Afghanistan. His previous acquisition assignments include Commanding General, Picatinny Arsenal, NJ/Commander, Joint Munitions and Lethality Life Cycle Management Command/Program Executive Officer (PEO) Ammunition and Deputy PEO Aviation, Redstone Arsenal, AL. I look forward to working with him as he shares his vast experiences in Army acquisition with us. I'm ready to follow his focus and priorities as he leads our workforce. We wish MG(P) Phillips well as he begins his journey as our new PMILDEP, DACM, and AAC Director.

2009 Senior Leaders' Training Forum (SLTF)

The SLTF, held Nov. 16–19, 2009, in Dallas, TX, was a resounding success. Army acquisition senior leaders and selected members of the Army's senior leadership team met to share and discuss information about acquisition direction, guidance, and policies. SLTF attendees are now sharing the knowledge and experience gained from the SLTF with their respective organizations, keeping the acquisition workforce honed and ready to

serve. My sincere gratitude goes to all who helped make the SLTF a tremendous learning experience.

I wish you all a very happy and healthy new year.

Craig A. Spisak
Director, U.S. Army
Acquisition Support Center

Army Senior Leaders Discuss Leader Development at AUSA Annual Meeting

Jaclyn Pitts

The U.S. Army is working on a new Army Leader Development Strategy that will address four broad emerging trends that affect the military environment: uncertainty, an increasing pace of change, higher levels of competitiveness among the Army's enemies, and increasing decentralization. GEN Martin E. Dempsey, Commanding General (CG), U.S. Army Training and Doctrine Command (TRADOC), led a leader development panel discussing these trends and other requirements and conditions needed to create the best Army leaders for tomorrow at the 2009 Association of the United States Army (AUSA) Annual Meeting and Exposition in Washington, DC, Oct. 6, 2009. The issue of leader development "is the most important topic we face as an Army," Dempsey said.

BG Edward C. Cardon, Deputy Commandant, U.S. Army Command and General Staff College, said the strategy will have four "annexes," dealing respectively with officers, noncommissioned officers (NCOs), warrant officers, and Army civilians. Each component will follow the same eight imperatives guiding the Army's leadership development:

GEN Martin E. Dempsey, CG, TRADOC, leads a panel on leader development at the 2009 AUSA Annual Meeting and Exposition in Washington, DC, Oct. 6, 2009. (U.S. Army photo courtesy of AUSA.)

- Commitment to lifelong learning.
- Balance of training, education, and experience.
- Outcomes-based education.
- Coordination with the Army Force Generation model.
- Management of different types of talent.
- Replication of battlefield complexity in the classroom and home base.
- Focus on mentoring.
- Development of leaders to operate at the highest U.S. government levels.

MG Sean J. Byrne, CG, U.S. Army Human Resources Command (HRC), discussed leader development from a manpower perspective. He cited personnel, time, and retention as key issues the HRC is facing. "Right now, your Army is short about 2,000 captains and 2,000 majors," he said. "We're filling in gaps where we can."

Focus on Education
Byrne also addressed the Army's education priority, which some have argued is less necessary because of the large amount of wartime experience most Soldiers possess. Many Soldiers lack the education they should have at certain stages of their careers. Byrne said about 59,000 NCOs have missed educational opportunities because of high operations tempo, leaving them "a step or two behind" where they should be.

Additionally, for the first time, Professional Military Education will be extended to Army civilians, not just to officers and enlisted Soldiers. "The way we thought about the generating force was that it was a stable, relatively straightforward organization that produced things on very long timelines to support the operating Army, which did most of the adaptation," said BG Volney Warner (USA, Ret.), Commandant, U.S. Army Civilian University. "In the future, it has to be more about a functional competency base that forms a basis for individuals to adapt, to have lifelong learning, to continue to improve their skills and contributions, and lead in new and different environments."

Warrant Officer Education
COL Mark T. Jones, Commandant, U.S. Army Warrant Officer Career College, addressed education reform for warrant officers. Starting in FY11, senior education levels for the ranks of CW3, CW4, and CW5 will change from a "poorly focused 4-week course" to a 5-week course focusing on leadership, knowledge and project management, counterinsurgency, and working in multinational environments, Jones said. The Warrant Officer Senior Staff Course will be expanded from 2 weeks to 4 weeks, focusing on topics including policy, strategy, globalization, and media relations.

NCO Education and Distance Learning
CSM Raymond Chandler, Commandant, U.S. Army Sergeants Major Academy, provided an update on NCO education. NCO courses are being expanded to incorporate more of the context
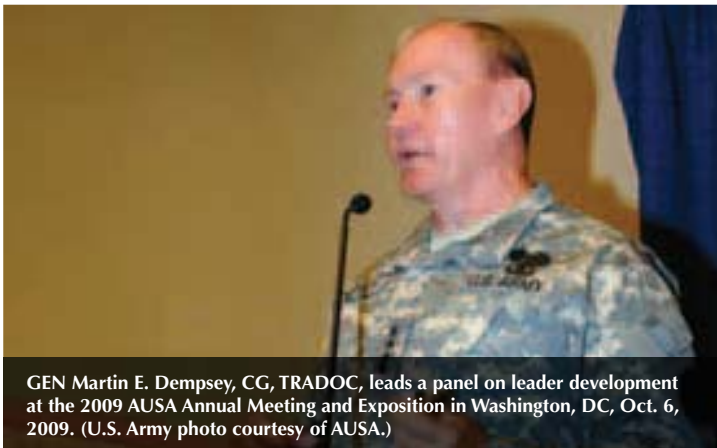
CSM Raymond Chandler, Commandant, U.S. Army Sergeants Major Academy, provides the leader development panel discussion audience with an update on NCO education. (U.S. Army photo courtesy of AUSA.)

in which military actions take place. "We have to look at the echelon at which they're learning," Chandler said. "For the Warrior Leaders Course, are we going to teach them national security decision-making processes? No, but what we are going to teach them is why they're doing what they're doing."

The panel also addressed the use of distance learning technology in leader development. Originally introduced as a means to save money, Soldiers, particularly NCOs, are taking classes remotely at record numbers. In some cases, classes are only available online. "We have NCOs right now taking classes from Afghanistan and Iraq," added Cardon. "Because of distance learning, NCOs already have a culture of lifelong learning." An audience member raised a question regarding the education quality of the traditional classroom setting versus online learning. "The bottom line is it's a balancing act," Chandler responded. "You have to do some analysis and determine what it is that a person can learn on [his or her] own and maybe not necessarily need to be in a brick and mortar facility to do it."

Jaclyn Pitts provides contract support to the U.S. Army Acquisition Support Center through BRTRC Technology Marketing Group. She holds a B.S. in journalism from West Virginia University and a B.S. in criminal justice from Kaplan University.

The Importance of Fiscal Law in Acquisition

Edward T. Delnero

Fiscal law is one of the principles that governs all resource managers. It sets the rules we are to obey and sets the penalties if we do not.

As an intern at the U.S. Army Communications-Electronics Command Life Cycle Management Command (CECOM LCMC), I was given the *Seventy-Sixth Fiscal Law Course* book from the U.S. Army Judge Advocate General's Legal Center and School, Charlottesville, VA. The Fiscal Law Course is found in all CP-11 interns' program of instruction. The course book is about 2 inches thick with 18 chapters and would take approximately 2–3 weeks to read. My first reaction to being assigned this large volume was, "Why me?" Since the course is mandatory, I wondered why there was an urgency to complete it. The Functional Chief Representative for the Comptroller Civilian Career Program prefers that Department of the Army interns fulfill this requirement in a classroom instead of online because of its importance to our mission, so I figured a head start on this complex topic could only be beneficial.

Recently, I finished reading the course book, and along the way, contemplated each chapter and how it applies to the other courses and training that I have taken. I discovered that I was able to fit each chapter into the budget arena and see the overall relevancy to the total resource process.

In the first pages of chapter one, reference is made to the *U.S. Constitution, Article 1, Section 9*, which provides that "No Money shall be drawn from the treasury but in consequence of an Appropriation made by Law." Here begins our legal responsibility in our role as fiscal stewards to ensure to the best of our ability that appropriations are used for the intended purpose, time, and amounts appropriated by Congress. As I progressed through the chapters, I saw the history that developed the additional fiscal laws and guidelines, such as the *Bona Fide Needs Rule*, *Antideficiency Act*, and *Economy Act*.

I wanted to relay my experience and belief that each of us will find the importance of this topic as we continue our acquisition careers. Fiscal law covers everything from appropriations to our potential liability as accountable officers. Throughout our entire careers, we need to constantly ensure that we and those we serve perform within these legal parameters.

For those employees who are unable to take live training or who wish to refresh their knowledge, the Fiscal Law Course is available online at **https://jag.learn.army.mil/webapps/portal/frameset.jsp**.

Edward T. Delnero is an intern at the CECOM LCMC G-8, Command Analysis Office, Fort Monmouth, NJ. He holds a B.S. and M.B.A. in accounting from Seton Hall University.

Contracting Community Highlights

We all experience the challenges and turmoil of our Nation's economy, but as members of the contracting community, we play an important role in its recovery. President Barack Obama has appealed to us as contracting professionals to continue our vigilance to ensure taxpayers receive the best return on their investment. Contracting individuals exert an immediate and direct effect on the Nation's spending. Few other career fields exert this influence. A guiding principle of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology is to ensure value and competition in every program, and contracting professionals fulfill this responsibility every day.

Since 2007, the Office of Federal Procurement Policy (OFPP) has taken several steps to reinforce competition and related practices for achieving a competitive environment. OFPP expressed concern that the government frequently missed opportunities to take full advantage of competition when placing task orders. This concern arose because of the growth in agency expenditures through orders against existing contracts, from 14 percent of total dollars obligated in FY90 to about 52 percent in FY05. Contract modifications accounted for a substantial amount of these obligations. We realized that we had room for improvement. Although DOD competed 63 percent of the dollars spent in FY09, OFPP ranked DOD twelfth out of 18 executive agencies. In FY08, DOD competitive obligations totaled $252 billion, a record 64 percent. The Army competed 65.4 percent of its dollars in FY08, exceeding the goal of 63 percent. The Army's competition rate was 63 percent in FY09, a shortfall from the goal of 69 percent. To meet our goals in the future, we have committed to assess initiatives that recognize and reward organizations that meet our targeted goals.

On March 4, 2009, the White House issued a memorandum imploring agencies to not engage in noncompetitive contracts except in circumstances when their use can be fully justified and where appropriate safeguards are in place to protect the taxpayer. Additionally, the memorandum reinforces the *Federal Acquisition Regulation* requirements to give agency preference to fixed-price-type contracts. The near doubling of the government's dollars obligated through cost-reimbursement contracts between 2002 and 2008 from $71 billion to $135 billion prompted concern and brought a renewed emphasis from the White House.

Recognizing that the federal government must have robust management and oversight of its contracts, President Obama instructed the Director of the Office of Management and Budget (OMB), in collaboration with DOD, NASA, the General Services Administration, and the Office of Personnel Management, to develop government-wide guidance to assist agencies in reviewing and creating processes of existing contracts; identify contracts that are wasteful, inefficient, or not likely to meet the agency's needs; and quickly formulate appropriate corrective action. As a result, OMB, in a July 29, 2009, memorandum, required all agencies to achieve two specific savings goals by the end of FY10 and suggested several methodologies that require the development and execution of spend management, contract management, and workforce initiatives.

One of our most critical functions as the business advisor to the Army's acquisition teams involves designing acquisition strategies that support competition while achieving program goals, avoiding significant overcharges, and curbing wasteful spending. Requirements definition holds the key to selecting an appropriate contract type and managing the government's risks. During the requirements generation phase, we formulate the contract type and the acquisition strategy to achieve a competitive environment with the appropriate balance of risk with industry. While I recognize the continued existence of high-risk missions and acquisitions where cost-type contracts are the best choice, the focus on increasing our reliance on fixed-price contracts presents an early opportunity for us to engage our customers. The steps we take individually and collectively to respond to the President's initiatives make the Army more effective and efficient. Our Soldiers and fellow taxpayers will reap the benefits of your contributions.

Please take time to read the *Defense Procurement and Acquisition Policy* on competition at **http://www.acq.osd.mil/dpap/cpic/cp/competition.html**, where you will also find our annual competition reports. These reports include examples of the many successes achieved by our contracting community. Reach out to others in the contracting community for new ideas and best practices, and be the catalyst in achieving savings and contract excellence for our customers in FY10.

Edward M. Harrington
Deputy Assistant Secretary of the Army (Procurement)

U.S. Army Mission and Installation Contracting Command's (MICC's) Industry Council (IC)

Cristina Chial and Laura Eichhorn

MICC, headquartered at Fort Sam Houston, TX, enhances warfighters' capabilities through timely, responsive, and effective CONUS base operations contracting support and acquisition

of critical supplies and services that equip, train, deploy, and reintegrate the Army Modular Force. MICC's business model leverages enterprise contracts for common-use services. MICC activities include 7 centers and 30 contracting directorates that provide the U.S. Army Installation Management Command (IMCOM), U.S. Army Forces Command (FORSCOM), and U.S. Army Training and Doctrine Command (TRADOC) with base operations contracting support, power projection, schools and training, and various other mission needs.

A great challenge of the contracting process is generating quality requirements packages and solicitations that submit meaningful and competitive proposals that lead to effective contract performance at a reasonable price. Successfully meeting this challenge hinges on several factors, including developing a skilled and experienced acquisition workforce that understands and appreciates all facets of the process, especially the industry perspective. Another key element is customer education on conducting market research and translating needs and requirements into written performance work statements.

Working With Industry

Productive communication with industry is a vital tool in developing solicitations and contracts that accomplish mission expectations. Industry counterparts have concerns regarding the transparency and quality of the government's pre-award processes. They sometimes question whether government personnel understand corporate business and the impact that mindsets and processes have on a company in providing the optimal and most cost-effective contracting solution. Additionally, industry seeks open and frank exchanges on contracting issues, such as interpreting and implementing policies and regulations and adapting to the Army's changing needs.

In the midst of today's dynamic environment, communication with our industry counterparts is important in maintaining positive working relationships and, ultimately, is critical to maximizing our contracts' effectiveness and quality in support of the warfighter. Accordingly, MICC leadership recognized a forum was needed that would promote the honest exchange of information and increase understanding of the government contracting process from both perspectives. The resultant IC initiative focuses on building partnerships, exchanging timely and relevant information, identifying common challenges, and crafting workable solutions. Meetings are held quarterly and membership is limited to representatives who are knowledgeable in the contracting arena and committed to resolving issues impacting the acquisition process.

Key government participants include MICC senior leadership, experienced field personnel, and customers representing IMCOM, FORSCOM, and TRADOC. Industry participants include MICC's enterprise contracts:

- CONUS Base Service, which augments garrison staffs during mobilizations at power projection and power support platforms.
- Field and Installation Readiness Support Team, which furnishes innovative and responsive logistics support to meet warfighters' evolving needs.
- Operations and Training Resource Support Services, which brings planning and training support services to promote Army readiness.
- Aviation Joint Administrative Management Support Services, which provides administrative support.

These multiple-award indefinite delivery/indefinite quantity (IDIQ) contracts minimize delays in full and open competition for individual requirements and facilitate competition for the placement of task orders, which is crucial in achieving optimal pricing and quality contractor performance that satisfies customer requirements on time.

MICC convened the first quarterly IC meeting in October 2008 and is in the second year of this successful initiative. Topics discussed at the first four IC meetings included organizational conflicts of interest; alternative dispute resolution; source selection issues and initiatives; insourcing; reorganization of logistics directorates; proposal preparation; the requirements submission process at FORSCOM, IMCOM, and TRADOC; industry's decision points for submitting proposals and protests; challenges faced by small businesses; and transition after graduation from the 8(a) program.

Integrated Product Teams (IPTs)

The IC also champions two IPTs that include both government and industry membership. The IPT-1 goal is to create a collaborative environment for requirement identification and communication between government and industry. IPT-2 looks at task order development under multiple-award IDIQ contracts.

IPT-1 focuses on contractor concerns regarding requirement forecasts to promote strategic planning and communicating with contracting offices before, during, and after specific procurements. The team is exploring overarching procurement integrity, statutory, and regulatory restrictions concerning source selection-sensitive information and disclosure, but is also considering whether communication barriers are grounded in the extant culture. Fairness, objectivity, and maintaining a level playing field are core objectives of government acquisition and perhaps the fear of violating these important principles leads government personnel to be overly cautious in avoiding communication. Industry seeks a standardized information flow with clear rules, acceptance of industry communication standards within government procurement processes to the extent permitted by law and regulation, and clearly defined requirements.

IPT-2 examines efficiency, transparency, and fairness in task order competitions under MICC's enterprise contracts. Concerns include lack of communication, insufficient planning, inadequate workload data, ineffective site visits, perceived favoritism toward the incumbent contractor, inconsistent procedures among contracting offices, lack of feedback, and inadequate marketing of the enterprise solution contracts. Standardizing proposal response timelines, formats, and evaluation schemes are being considered as possible improvements to reduce proposal expenses and evaluation time, promote streamlined processes, and enhance source selection objectivity. Industry has also asked for greater transparency regarding task order competitions, forecast data for upcoming task orders, and more comprehensive workload data for task order requirements.

In response to issues raised by industry, MICC instituted a quarterly IDIQ report that provides the desired transparency on task order competitions. The contracting offices publicly post information about newly awarded task orders including the number of proposals received and the final award amount. The MICC analyzes the data for identification of trends or causes for concern. MICC also provides a forecast list of known future requirements and issued guidelines for site visits, debriefings, and the proper use of key personnel and résumé submission requirements during solicitation.

Though much work remains, the IC is successfully facilitating a robust, focused forum and is yielding significant benefits for both industry and government. The creation of an open environment and meaningful dialogue serves to build partnerships and trust between the MICC and our industry counterparts. Collaboration is helping to identify impediments and roadblocks and to develop viable solutions to mitigate and, if possible, remove these obstacles. By leveraging the tremendous skills and capabilities found in industry and the government, the MICC IC contributes to streamlining procurements, reducing waste and expense, and providing outstanding supplies and services critical to the Army. Productive relationships with industry ultimately promote sound stewardship of taxpayer dollars while ensuring top-notch support to the warfighter.

Cristina Chial is a MICC Procurement Analyst. She holds a B.S. in computer and information sciences from Trinity University and is Level II certified in contracting.

Laura Eichhorn is the MICC Program Manager for Policy and Contract Operations. She holds a B.S. in biology from Texas Tech University and an M.A. in management from the Florida Institute of Technology. Eichhorn is Level III certified in contracting and is a U.S. Army Acquisition Corps member.

The Defense Acquisition University (DAU) Honors 1 Millionth Graduate

Jaclyn Pitts

DAU recognized its 1 millionth graduate in a Nov. 20, 2009, ceremony at the university's Fort Belvoir, VA, campus. Wilfred Cruz-Camacho, Team Leader, U.S. Munitions Team Lead, U.S. Army Armament Research, Development, and Engineering Center, Picatinny, NJ, completed DAU's Program Management Tools (PMT 250) course, making him the 1 millionth graduate of a DAU certification course. University President Frank Anderson Jr. presented Cruz-Camacho with a plaque commemorating the occasion, and DAU Alumni Association President Bill Bahnmaier welcomed Cruz-Camacho with a free 1-year membership to the association.

"This was a team effort to do this," Anderson said. "It may seem like producing a million grads since 2000 is fairly easy— we set courses up, people show up, and eventually get to a million, but it was a lot more than that. We've had an expanding growth chart during the previous 10 years. This did not happen easily. We had to make some really hard decisions to get in this position."

Cruz-Camacho also received a Certificate of Congratulations on behalf of the U.S. Army Career Program (CP) 16 for Engineers and Scientists (non-construction) from Martha Newman, Chief, CP-16 Office.

Jaclyn Pitts provides contract support to the U.S. Army Acquisition Support Center through BRTRC Technology Marketing Group. She holds a B.S. in journalism from West Virginia University and a B.S. in criminal justice from Kaplan University.

DAU celebrates its 1 millionth graduate in a ceremony Nov. 20, 2009. Left to right: Martha Newman, Chief, CP-16 Office; Bill Bahnmaier, DAU Alumni Association President; Frank Anderson Jr., DAU President; Wilfred Cruz-Camacho; Rob Rea, DAU PMT 250 Instructor; and Mary McHale, U.S. Army Acquisition Support Center. (U.S. Army photo courtesy of DAU.)

TWO ARMY ORGANIZATIONS HONORED WITH 2009 DAVID PACKARD EXCELLENCE IN ACQUISITION AWARDS

Two U.S. Army organizations were presented 2009 David Packard Excellence in Acquisition Awards at an awards ceremony held Nov. 3, 2009, at the Officers' Club, Fort Belvoir, VA, in conjunction with the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) Workforce Achievement Awards. The David Packard Excellence in Acquisition Award is DOD's highest acquisition team award. The Mine Resistant Ambush Protected (MRAP) All Terrain Vehicle (M-ATV) Source Selection Evaluation Board (SSEB) and the Project Manager Mobile Electric Power (PM MEP) Team were honored for their exemplary acquisition practices.

The M-ATV SSEB's innovative acquisition practices and efforts over the past year resulted in the selection of a low-risk, accelerated delivery candidate for the quick deployment of thousands of M-ATVs. The M-ATV SSEB responded with inspirational speed, tenacity, and dedication to satisfy a Joint Operational Need Statement for warfighters in Afghanistan that required protection against mines, improvised explosive devices, and small arms fire. Never before has such an abbreviated timeline requirement for initial contractor paper evaluation, government capability testing, and limited user evaluation been levied on an evaluation team. The team developed new evaluation processes, conducted almost 400 requirement evaluations, processed and evaluated more than 1,500 items for discussion, and managed an extensive testing process that delivered more than 1,200 test incident reports to the competing offerers, all in just a few short months. The team overcame several challenges and still made the final award on schedule, exemplifying extraordinary professionalism, dedication, and proficiency. The M-ATV SSEB's efforts resulted in the delivery of thousands of M-ATVs to leverage the existing MRAP fielding base that will save countless lives.

PM MEP is a joint-interest project management office with a multiservice management team. With the need to reduce fuel consumption at the center of DOD and the U.S. Army Energy Strategy and Implementation Plan, PM MEP's contributions in advancing energy technologies for tactical and mobile power sources directly support the *Operation Enduring Freedom* theater, as well as the future battlefield. The team's efforts this past year include improved generator and environmental control programs and command post power distribution, resulting in a fielded annual cost avoidance of nearly $1 billion per year and savings of approximately 10,000 tanker loads of fuel per year. PM MEP's new Hybrid Intelligent Power program will also enable significant reductions in the fuel requirements for tactical command centers, while enabling the capability to seamlessly integrate renewable power sources. In the near term, the PM's ability to surge production of Tactical Quiet Generators by 150 percent in only a few months at no cost to the government enabled the rapid fielding of more than 400 generators to Afghanistan to meet an urgent warfighter requirement. The team has demonstrated the principles and benefits of creative and proactive acquisition management.

Congratulations to the Army's David Packard Excellence in Acquisition Award winners. Their outstanding efforts in supporting the acquisition process help protect and better serve our Nation's warfighters. For a more detailed article on these award-winning teams, go to the December 2009 issue of *Army AL&T Online* at **http://www.usaasc.info/alt_online/article.cfm?iID=0912&aid=06**.

PM MEP team members are presented the 2009 David Packard Excellence in Acquisition Award. Left to right: Chris Bolton, Jim Cross, Lisa Denning, Alan Coady, LTC Tom Bowers, Michael Padden, LTC Gordon "Tim" Wallace, LTC Bob Thoens, and Paul Richard. (U.S. Army photo by Robert E. Coultas.)

M-ATV SSEB team members accept the 2009 David Packard Excellence in Acquisition Award. Left to right: Dave Ahern, USD(AT&L) Director of Portfolio Systems, Roberta Desmond, Dave Hansen, Gary Tucker, Dawn Vanhulle, Michael Szajenko, Richard McKenzie, and Frank Anderson Jr., Defense Acquisition University President. (U.S. Army photo by Robert E. Coultas.)

IN THIS ISSUE:

- **Expedited Hiring Authority (EHA) Helps Manage Human Capital Needs**
- **Meeting Acquisition Challenges Presented by the Army's Ground-Based Sense and Avoid (GBSAA) and Airspace Integration (AI) Efforts**
- **Reshaping the Battlefield and Technology Acquisition: Unmanned Aircraft Systems (UAS) Project Office (PO) Changes How DOD Does Business**

UNITED STATES ARMY

USA**ASC**
PREPARING FOR THE FUTURE

UNITED STATES ARMY
ACQUISITION CORPS

ACQUISITION SUPPORT CENTER