ARMY AL&T

January - March 2007

HUMAN FACTORS AND TECHNOLOGY INTEGRATION

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UNITED STATES ARMY
ACQUISITION SUPPORT CENTER

From the Army Acquisition Executive

Untold Good News From Iraq

Prior to Saddam Hussein's oppressive regime, Iraq was the second-richest country in the Persian Gulf region. Still, after 30 years of willful neglect and treasury-draining regional wars, Iraq's once modern infrastructure lay in ruin.

For the last three years, solid progress has been made to rebuild Iraq's critical infrastructure. All of Iraq's industrial sectors — oil, water, electrical power, education, agriculture, facilities and security — have benefited from U.S. investment in its economic revitalization and reconstruction. While there have been setbacks caused by corruption and terrorism, construction continues to progress with the help of Coalition Forces and the new Iraqi government.

In June 2004, with the Coalition Provisional Authority's closing, the Department of the Army was designated as the primary agency providing program and contracting support to the Iraq reconstruction mission. This office was already onboard awarding contracts and establishing a team forward to define requirements and work with the Iraqi ministries to identify needed projects. This eventually led to the creation of the Joint Contracting Command Iraq/Afghanistan. Also in June 2004, the Project and Contracting Office was established and placed under my authority to manage this tremendous effort both in-country and with reach-back support here in Washington, DC. As a result of these efforts in partnership with the State Department and the U.S. Army Corps of Engineers, tangible results are being realized.

The oil industry capacity is now above 2002 levels. Substantial investments have been made in the entire oil infrastructure system to help provide long-term stability, such as improvements to oil wells, pipelines and oil refinement facilities. U.S. assistance has significantly improved water and sewage services for Iraqis. In April 2003, it was clear that many of the country's water treatment plants were in serious disrepair and that many Iraqis received water that was contaminated or inadequately treated. Since that time, completed U.S projects have increased potable water availability to an estimated 4.2 million additional residents, and an estimated 5.1 million additional people now have access to sewage treatment.

In addition, U.S. projects have added or restored some 2,700 Megawatts of electrical generation capacity to Iraq's electrical grid, affecting more than 3 million homes. In the pre-war period, Baghdad received a greater share of electricity at the rest of the country's expense, but today, power is more equitably distributed. Most Iraqis now receive 12 to 14 hours of electricity, and those in and around Baghdad are receiving 8 to 10 additional hours.

Iraq reconstruction effort leaders are often asked, "Are we making a difference in the life of the average Iraqi?" The answer is "yes." The proof is in their actions: Iraqi mothers and fathers are sending their children to new schools with improved curriculums; many are enjoying clean water and better sanitation; they are buying new air conditioners and other appliances (making it difficult for power generation and distribution improvements to keep up). Iraqis are also enjoying the widespread use of cell phones and can now call an ambulance or the police in many areas when they need emergency services. Additionally, to increase safety and security, hundreds of law enforcement and border police facilities have been built.

In sum, the numbers of completed projects throughout Iraq — including large and complex oil, water and electrical plants — have been truly staggering. More than 3,900 projects have been started, more than 3,100 of these projects have been completed with the remainder under construction.

This rebuilding program is an effort to build a foundation for freedom for the Iraqis. The original goal was not to rebuild their whole society, but rather to provide a fresh start for them to continue to build upon. We realize that as we hand off critical programs and projects, the need for capacity development grows even more important. Thousands of training sessions and workshops have been conducted to prepare Iraqis to assume control of reconstruction projects. A special program teaching women-owned small businesses in Iraq has resulted in numerous opportunities for these firms to win contracts.

Through the work on the ground and partnering efforts, we are helping Iraq and its people make their journey toward freedom and improvement in their lives and, most importantly, helping them realize that the future is in their hands.

Claude M. Bolton Jr.
Army Acquisition Executive

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For more news, information and articles, please visit the USAASC Web site at **http://asc.army.mil**. Click on **Portal** and then click on the ***Army AL&T* Magazine** link under **Army AL&T**.

2006 Readership Survey Results on Page 87

In the 2006 October-December issue of *Army AL&T* Magazine, we featured our 2006 Readership Survey. After an overwhelming response, we have finished analyzing the survey data and would like to present you with our findings. Please turn to Page 87 of this issue to read the article titled Readership Survey a Resounding Success. The article features the survey results, as well as how we plan to incorporate these findings into future issues of *Army AL&T* Magazine. We take your comments and suggestions to heart — your feedback allows us to provide you with a more informative and useful publication.

Thank you for your participation in the survey!

Army AL&T Magazine
Editorial Staff

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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

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0635304

Human Factors and Technology Integration

This edition of *Army AL&T* Magazine focuses on the junction where people and technology meet. Commonly referred to as the human-machine interface (HMI), this issue's articles explore numerous examples of how the Army is using technology and user interfaces to optimize Soldier performance. *User interfaces*, and how they relate to the mechanical and computer systems our Soldiers employ, is of critical importance to the Acquisition, Logistics and Technology (AL&T) Workforce responsible for developing, testing and fielding current and future technology solutions to address combatant commander and Soldier requirements in increasingly more complex and hostile operating environments.

On the people side of the house, LTG Ross Thompson, the Army's new Military Deputy (MILDEP) to the Assistant Secretary of the Army for Acquisition, Logistics and Technology, met with *Army AL&T* Magazine staff to answer questions about the AL&T Workforce's future. Thompson addressed some of the toughest issues facing the acquisition workforce today, including customer responsiveness, workforce professional development and the importance of Individual Development Plans, Army Force Generation and improved cyclic readiness, and the implementation of Lean Six Sigma methodologies to transform business operations through organizational process improvements.

Our lineup for this edition includes the following articles:

- In a key interview with Defense Advanced Research Projects Agency (DARPA) Director Dr. Anthony J. Tether, he discusses some of his agency's high-payoff, innovative research projects and developmental testing that is resulting in timely product solutions for Soldiers. DARPA's numerous technological contributions are working on the battlefield and around the Army, improving individual Soldier performance and awareness, and saving Soldier and civilian lives across the operational spectrum.
- In their article summary about the new National Security Personnel System (NSPS), Ben Ennis and Jan Walker relate how NSPS will help shape a more relevant, streamlined DOD workforce, and establish new rules for how, ultimately, civilians are hired, assigned, compensated, promoted and disciplined.
- In "Addressing Human Factors Issues for Future Manned Ground Vehicles," the authors discuss the challenges Soldiers will face in driving and defending their vehicles in situations where they must rely on advanced, networked information and indirect visualization through sensor systems. The research and development studies underway will ensure that Soldiers can more effectively use complex interfaces, such as control devices, instrument panels and information-rich displays to do their jobs more effectively in a multitude of operational environments.
- In "Motion-Base Simulation Guides Future Force Systems Design," the authors detail the collaborative efforts between the U.S. Army Tank and Automotive Research, Development and Engineering Center and the U.S. Army Research Laboratory's Human Research and Engineering Directorate to develop a Ride Motion Simulator to address design requirements for Future Force vehicle systems.
- Louis J. Gorenc shares lessons learned from independent research studies concerning the proliferation of potentially dangerous counterfeit and bogus parts that are flooding into the United States and are being unknowingly purchased by the federal government, DOD and its agencies. He warns that all AL&T Workforce members have a vested interest in stemming the flow of counterfeit and knock-off products into our respective organizations.
- In "A Holistic Approach to Combat Identification," MAJ Edward Ospital and CPT Adam N. Wojack emphasize the critical importance of effective combat identification processes and systems to maximize combat power against enemy targets and reduce potential battlefield fratricides for U.S. and coalition forces. They contend that new system solutions that improve situational awareness and target identification are imperative to reduce the "fog of war" and speed up shoot/don't shoot engagement decisions.
- In four separate articles, *Army AL&T* Magazine profiles the AL&T organizations that were selected for Shingo Prizes for Excellence in Manufacturing during 2006: Rock Island Arsenal Joint Manufacturing and Technology Center, Red River Army Depot, Letterkenny Army Depot and Tobyhanna Army Depot.
- In his article "Central Iraq Microwave System (CIMS) Supports Theater Communications Missions," Stephen Larsen discusses the challenges the Project Manager Defense Communications and Army Transmission Systems team faced in installing CIMS under hostile environmental conditions. CIMS will provide the Multi-National Force-Iraq with data transmission services that will enhance theaterwide communications and data-sharing capabilities.
- In her interview with Phil Purdy, Deputy Product Manager for Countermine, Project Manager Close Combat Systems, and Mark Locke, AN/PSS-14 Project Management Engineer, Kellyn Ritter profiles the vastly improved AN/PSS-14 hand-held mine detection system. Purdy lauds the system's 95 percent-plus accuracy rating and its proven battlefield effectiveness.
- Other articles in this issue you won't want to miss are our annual 2006 Association of the United States Army Annual Meeting and Exposition wrap-up by Meg Williams and Kellyn Ritter; the 2006 Army Acquisition Corps Awards Ceremony "Celebrating Our Acquisition Stars 2006!" story and photos; and the results of our 2006 Readership Survey.

As we begin a new year, my editorial staff and I wish each of you a joyous, healthful and professionally rewarding 2007. Thank you for your tremendous support this past year. We look forward to providing you an even more dynamic editorial calendar in the months ahead.

Michael I. Roddin
Editor-in-Chief

Interview With LTG Ross Thompson

Michael I. Roddin and Cynthia D. Hermes

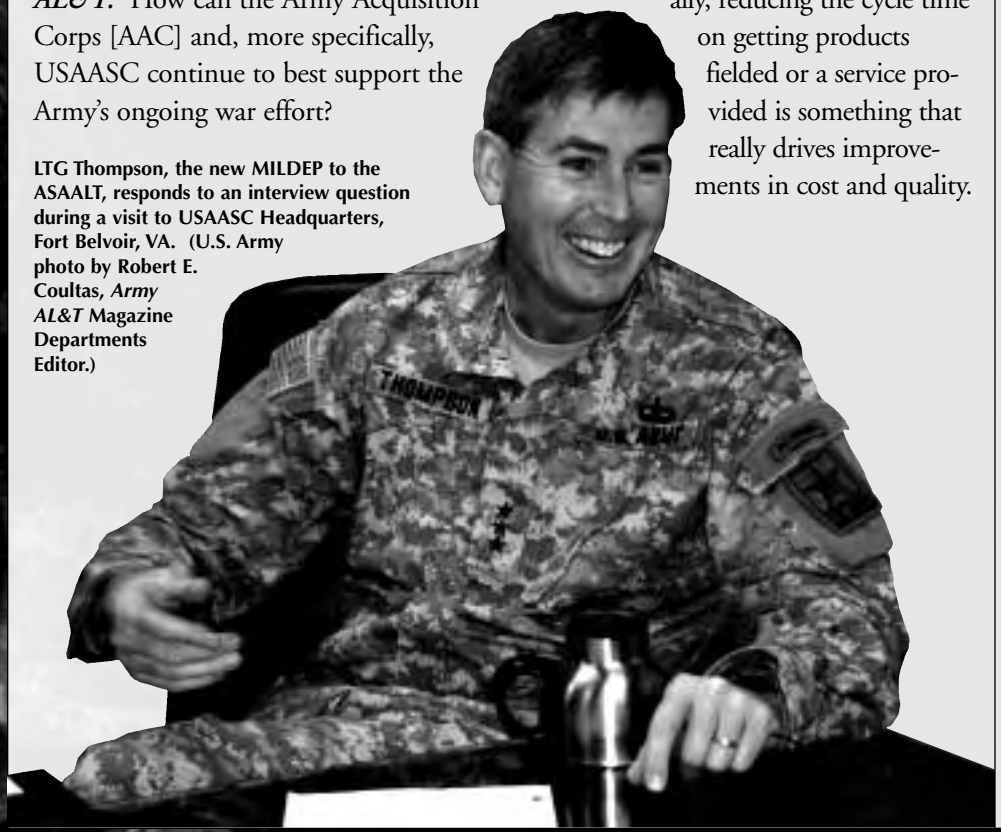
On Nov. 28, 2006, LTG Ross Thompson, Military Deputy (MILDEP) to the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT) met with *Army AL&T* Magazine staff to answer questions about the future of the Army Acquisition, Logistics and Technology (AL&T) Workforce. During his visit to the U.S. Army Acquisition Support Center (USAASC) Headquarters, Thompson stressed the importance of each AL&T Workforce member taking individual responsibility for his or her own career management. He said that you can have all the opportunities in the world as far as education, training and developmental assignments, but it's your responsibility to ensure that the information about you in various databases is up-to-date. He added that individuals must be bold about ensuring that their data is correct and stays correct.

Thompson asserts that the most important thing Army Acquisition Corps members can do is be responsive to customer needs and understand their requirements. Whether it's addressing materiel or contractual service requirements, the acquisition community must provide quality product and service solutions in a cost-effective and timely manner. Here, SPC Andrew Ruhlman and his fellow platoon members from the 1st Brigade Combat Team, 2nd Battalion, 37th Armored Regiment, 1st Armored Division, benefit from new communication technology during a patrol in Tal Afar, Iraq. (Photo by SSGT Jacob N. Bailey, U.S. Air Force (USAF), 1st Combat Camera Squadron.)

AL&T: As you assume the MILDEP role, what initiatives do you plan to institute to increase the effectiveness of the Army AL&T Workforce?

Thompson: I honestly don't know enough about all of the ongoing initiatives right now to say that there's anything new that needs to be added. So the first thing I would say is that we must follow through on the initiatives that are already in place across the board. A lot of procedures have been put in place since the implementation of the *Defense Acquisition Workforce Improvement Act* and the professional management of the acquisition workforce. We must continue to build on those initiatives to make the career opportunities as viable as they can be for everyone in the acquisition workforce. We must also ensure that the training, education and career development opportunities are as robust as they can be so that individuals have all the opportunities that they need to have a successful career.

AL&T: How can the Army Acquisition Corps [AAC] and, more specifically, USAASC continue to best support the Army's ongoing war effort?



LTG Thompson, the new MILDEP to the ASAALT, responds to an interview question during a visit to USAASC Headquarters, Fort Belvoir, VA. (U.S. Army photo by Robert E. Coultas, *Army AL&T* Magazine Departments Editor.)

Thompson: I think the best thing the AAC can do is be responsive to the customer — the warfighter. That responsiveness involves providing the right product at the right time at the right price. That takes a lot of hard work, but we've got to understand the customer need, and the customer need from the Army and Joint perspective comes from understanding the operational requirement. It's meeting and understanding that requirement — whether it's a materiel solution or a service solution that we provide through a contract — and providing that product or service in the most cost-effective, timely manner to meet that need. Additionally, reducing the cycle time on getting products fielded or a service provided is something that really drives improvements in cost and quality.

If we want the AL&T Workforce to be responsive to our warfighting customers, providing them the right products and services when and where they're needed most, USAASC must be responsive to the workforce's professional development and training needs and enable them to have all the educational and experiential tools they require to be able to do their jobs effectively.

The one metric that I really try to push with people all the time is trying to drive down the cycle time of getting something done. Being able to do a job faster doesn't necessarily mean that we sacrifice quality or increase cost. I maintain that we can go faster, and going faster gives us a higher quality, lower priced product.

USAASC has customers as well, and those customers are the AL&T Workforce. So USAASC's job is to provide the professional development, workforce management and assignment opportunities to the entire AL&T Workforce. USAASC must be responsive to the workforce's needs because it is people who are the most important asset in any organization. If we want the AL&T Workforce to be responsive to our warfighting customers, providing them the right products and services when and where they're needed most, USAASC must be responsive to the workforce's professional development and training needs and enable them to have all the educational and experiential tools they require to be able to do their jobs effectively.

AL&T: The AL&T Workforce is expected to grow from approximately 45,000 to more than 60,000 with the addition of the Corps of Engineers-Civil Works, Installation Management Command and Assistant Chief of Staff for Installation Management AL&T Workforces. How will these groups be assimilated?

Thompson is a fierce advocate of creating professional development opportunities for AL&T Workforce members through a carefully orchestrated regimen of training, education, experiential assignments and mentoring. He contends that to grow the acquisition community's future leaders, supervisors must use IDPs to further develop their subordinates' skills and abilities. (*Army AL&T* Magazine stock photo.)

Thompson: There's nothing that's really difficult about this, but it's a change for the Corps of Engineers and the installation workforce to be considered part of the acquisition workforce based on their respective career fields. We've got a very good system in place for keeping the AL&T Workforce informed. Now we just have to reach out to those who are assimilating into the workforce and make them aware of why we are making this change in their career management, what steps we're taking to make that change, and then treat each of those individuals personally. We must take the necessary steps to bring them into the AL&T Workforce's fold and make them aware of the tools and the career management assistance that's now available to them through USAASC.

The important thing here is that the AAC has one process, one standard when it comes to contracting. There are 800-series engineers, for example, who perform a certain amount of contracting work, and it's imperative that they be operating at the same professional level as their AL&T Workforce counterparts. We're trying to make the same training opportunities available to them so that everyone is operating at the same level of expertise. This is what makes the most sense for the Army down the road.

AL&T: The AL&T civilian workforce average age is 47.75, and 13.76 percent are eligible for optional retirement. Is our civilian workforce heading for a brain drain? If so, what is being done to counter this?

Thompson: A lot of people worry about the workforce's collective age and about the number that are either eligible for optional or early retirement. I don't worry very much about there being a brain drain. The reason I don't worry about it is because it's the responsibility of the workforce and leadership to ensure that there are people who work for them who can take their place one day. In my experience at the U.S. Army Tank-automotive and Armaments Command, in particular, we hired more than 3,000 people across the entire Life Cycle Management Command [LCMC] community at eight different installations over a 3-year period. Those 3,000 people dropped our average age by a couple of years. Although we brought in younger people, they weren't necessarily all much younger because we also brought people in laterally who were in their 40s.

I don't worry about brain drain, but we do need to have procedures in place with intern programs, the Army Civilian Training, Education and Development System and the FAST TRACK program for contracting. We've got to create opportunities for our people. At the same time, I think that the newer people that we bring into the AL&T Workforce are full of great ideas and they see things with a different perspective. Again, my fundamental point is that it's the responsibility of leaders at every level of the organization to develop people to take their place. It's supervisors' responsibility to eventually put themselves out of a job. My job is to find the right people and give them the opportunities so that there are multiple people who have the capability of taking my place and taking the place of the program executive officers [PEOs] — both civilian and military — and to be future program managers [PMs]. That is an inherent responsibility of anybody who has a leadership role, anywhere within any organization.

AL&T: According to June 2006 Career Acquisition Personnel & Position Management Information System [CAPPMIS] data, nearly 64 percent of AL&T Workforce members are not certified for their current positions. What can supervisors and leaders do to improve the certification percentages?

Thompson: Supervisors and leaders can sit down with the people who work for them, put together their Individual Development Plans [IDPs] and then execute those IDPs. It is both the individual's responsibility to get themselves certified and the leader's responsibility to get the people who work for them certified in their positions. And if 64 percent are not certified in their positions this year, that figure should be something less than 64 percent next year and even less than that the following year. So we need to start from the standpoint that we're not necessarily in the shape that we want to be in today, and then put together a plan to get

there. As I go around and talk to people in different organizations, I will pick individuals at random and ask to see their IDPs, their performance objectives for the year and validation that their supervisors have sat down with them at the appropriate times during the year for counseling. I expect people to do that. So again, that 64 percent figure may be where we are today, but we are going to be better next year and even better the year after that.

Before retiring, LTG Yakovac signed a new policy memorandum addressed to all AAC leaders stating that if individuals are not certified at the required level in their current jobs and they apply for tuition assistance programs, the training will only be approved for programs that go toward their certification requirements. Assistance will not be provided for training that is just good to have. That memo is an ongoing effort to push this number to the right level and each supervisor and PEO out there has been tasked to ensure that happens.

Building upon LTG Yakovac's intent, I would expect performance objectives for everybody needing certification and every supervisor who has people who are uncertified. Certification requirements must become part of their stated performance objectives for that year. I expect people to get rated on those objectives and appropriately recognized or counseled if they don't accomplish those stated objectives. It's that simple.

AL&T: One of the challenges for the workforce has been, with the Army at war and the acquisition community directly supporting that effort, training resources haven't been available for some of the resident courses that people need to attend for certification. As a result, training resources haven't always been available when people needed them. Given the bleak budget projections that we've had for the past two fiscal years, do you foresee the possibility that additional funds will become available for the community to use for certification purposes?

Thompson: That's something that I will personally take on. I'm aware that the funding is not where it needs to be for the training. In the big scheme of things in the Army, the funding for needed training is not a lot of dollars. If we're going to say that people are our most important asset and that we expect them to be certified, we've got to ensure that the funding resources are there to offer the training opportunities. If employees do everything that they can to get themselves certified, and a bona fide lack of funding prevents them from attending a required course, that becomes something that's outside of their control and it's an issue that I'll personally look into. By adhering to each employee's IDP, we can create the necessary demand so that the Defense Acquisition University [DAU] knows what courses we need. If individuals are not scheduling themselves for these courses, DAU doesn't know the Army needs those courses. We have to create the demand, and that goes back to the supervisor and the individual's IDP.

Supervisors need to understand that an IDP starts the demand signal at DAU. IDPs become the aggregation of certification requirements from every AL&T Workforce member. IDPs are the demand signal that gets aggregated up. And it's the Army Training Requirements and Resources System [ATRRS] — because DAU uses the Army's ATRRS — that captures the demands. That is where the courses are scheduled, the instructors are put in place and the scheduling is done. I give great credit to DAU for regionalizing their course offerings over the last couple of years. We no longer have to go away on temporary duty [TDY] for a couple of weeks to get some of these courses. DAU actually comes onsite at major population centers where we've got large densities of the AL&T Workforce, and they really do tailor their programs to meet the demands of the people. If there's enough of a demand, they'll send an instructor onsite and pay the

ARFORGEN, from an equipping standpoint, will ensure that Active and Reserve Component units are cyclically modernized, their equipment upgraded and their weapon systems Reset upon returning from operational deployments so they can respond effectively to future mission requirements. Here, Soldiers from the 172nd Stryker Brigade Combat Team exit a UH-60 Black Hawk helicopter flown by a 207th Aviation Regiment crew from the Alaska National Guard during an aerial traffic control point insertion near Tal Afar, Iraq. (Photo by SSGT Jacob N. Bailey, USAF, 1st Combat Camera Squadron.)

instructor's TDY salary. DAU is very good about that, but it all starts with the IDP.

AL&T: Throughout the AL&T Workforce, numerous positions have been designated as critical acquisition positions [CAPs] and, within those CAPs, key leadership positions [KLPs] have been designated. How do these KLPs affect acquisition organizations and do you see a need for updating the process or keeping the positions intact? What is going to be your focus as the MILDEP in terms of managing those positions AAC-wide?

Thompson: An honest answer to the question is that I don't know the entire inventory of positions that have been designated as CAPs yet. I know that KLPs are a subset of that. I do know that designation of KLPs is something that has to go from the Army up to the Defense Acquisition Executive [DAE]. So simplistically, that requirement is for PEOs — both military and civilian — and Command Select List positions for Acquisition Category 1 programs. If those are the current designation of KLPs, that sounds about right to me. But again, what I need to do as part of my education as the new MILDEP is to understand that complete inventory of CAPs and KLPs and then determine what needs to be added or removed from that list. What I do know is that USAASC currently manages about 250 KLPs for the community, including all AAC General Officers, Senior Executive Service members, uniformed and civilian PMs and CAPs GS-13 and above. The DAE doesn't mandate specific guidance, but rather leaves it up to each service's acquisition executive to manage.

> Supervisors and leaders can sit down with the people who work for them, put together their IDPs and then execute those IDPs. It is both the individual's responsibility to get themselves certified and the leader's responsibility to get the people who work for them certified in their positions.

AL&T: Army Force Generation [ARFORGEN] processes help ensure that modular conversion, restructuring and restationing initiatives achieve the Army's objective to be a campaign-quality Joint and expeditionary force. At the same time, Army business transformation efforts are helping the Army improve its ability to man, train and equip Army operating forces during a period of dwindling resources and heavy operational demand. How is the ARFORGEN process changing how LCMCs and PEOs do business?

Thompson: The ARFORGEN process is one of the most fundamental changes that the Army has undertaken in my entire career. We have implemented the ARFORGEN model to synchronize the cyclic readiness of all Army forces, better manage the available force pool and provide some measure of predictability to our all-volunteer force. Our goal is to generate a continuous output of fully manned, equipped and trained forces adequate to sustain one operational deployment in three years for the Active Component, one in five years for the Army Reserve and one in six years for the Army National Guard. It puts predictability into the system that in some cases wasn't always there before. And it allows us — from an equipping perspective — to tie our cycles of modernization and upgrades for equipment to the ARFORGEN process. So when a unit comes back from an operational deployment, it goes into its Reset and train period. During that period, both the LCMCs and PEOs that are working closely with the LCMCs take the unit's existing equipment and bring it back to full operational condition. Additionally, where opportunities arise, they also modernize that equipment. So it's that cyclic process that puts some stability into the modernization and sustainment system.

I was at PEO Soldier recently and what I told them philosophically, and I really do believe this, is that there are never going to be enough resources for every unit in the U.S. Army to have the latest, generation of whatever items that we provide. Whether that's a helicopter, a small arm or a set of night vision goggles, there are just never going to be enough resources. So we're always going to have the latest generation of equipment as well as older versions of similar equipment in the inventory. But tying that to the ARFORGEN process allows us to put the most modern equipment in the units that are getting ready to deploy on an operational mission and give them the right equipment to accomplish the mission that they've been asked to perform. Everyone in the AL&T Workforce needs to understand what ARFORGEN is trying to do and understand how they fit into the process. It's not hard to understand, but they need to pay some attention to it.

ARFORGEN is the cyclic readiness model in process. But one of the Army's major priorities is to make business transformation a reality. Business transformation is about challenging and/or changing the current way we do business. The Army has chosen to use

Lean Six Sigma [LSS] and its disciplined methodologies to transform business operations. I expect the AL&T Workforce to embrace LSS in business transformation. I also expect senior leaders to be sponsors of process improvement events and workforce members to seek opportunities to get Green Belt and Black Belt LSS training, as well as participate as team members on projects.

However, it's not the training that is most important — it's the results that come with working on projects to improve things inside organizations or programs. I get a lot of people who say that they are just too busy to do this. I say, "No, you're not. You should be solving your most pressing problems using the tools and techniques that LSS provides because it is a way of tackling problems and solving issues that is very well proven. It does work. It gives you a common way of addressing problems and issues and a common set of expectations on the right tools and techniques to be able to solve them." So I expect the entire workforce to understand LSS. Not everyone is going to get Green or Black Belt training, but I would expect everyone in the workforce to participate on the teams and help work on a project to improve a process. LSS is another item that I would put into performance objectives — both for senior leaders and other individuals within an organization. And I expect to see that reflected in IDPs as I go around and meet people in the PEO and LCMC communities.

AL&T: Secretary of the Army Dr. Francis J. Harvey recently announced the Army Strong campaign as a key component of the Army's recruiting and advertising efforts. Army Strong will specifically address the interests and motivations of individuals considering a career in the U.S. military. As MILDEP, how will you further promote the Secretary's Army Strong initiative within the acquisition community and in potential workforce members that we'll try to recruit into the intern and midgrade levels?

As the Army further embraces LSS and business transformation processes, AL&T Workforce members will develop the necessary tools and techniques for addressing problems and finding solutions. (*Army AL&T* Magazine stock photo.)

Thompson: I think that Army Strong is about the recognition that no matter what your career occupation may be, you will be a better person by embracing Army Values and taking advantage of the opportunities that the Army gives you — whether you are civilian or military. The AL&T Workforce needs to be "acquisition strong" in the skill sets that they have and the things that they do in their day-to-day jobs to provide the best products or services to their customers — combatant commanders and Soldiers. The Army Strong campaign is just getting started. It resonates with the target audiences, which are not just the civilian and military people who we are trying to recruit to work for the U.S. Army. It's also designed to influence the people who are already serving today and get them to understand that there is no greater sense of satisfaction that they can get than serving in or working for the Army. I do believe that the Army, along with the other branches of the military, is the most respected institution in the country. There's a great sense of personal satisfaction that comes with serving in an organization that is there to serve and protect the Nation and its people.

MICHAEL I. RODDIN is the USAASC Strategic Communications Director and *Army AL&T* Magazine Editor-in-Chief. He has B.S. degrees in English and journalism from the University of Maine and an M.A. in marketing from the University of Southern California. Roddin is a former Army Advertising Program Manager and three-time Army Keith L. Ware Journalism Award recipient. In 2005, he was selected by the Secretary of the Army for Editor-of-the-Year Honors.

CYNTHIA D. HERMES is Executive Editor of *Army AL&T* Magazine. In her 27 years of government service, she has worked as an editor for both the Army and Navy. Hermes previously worked at the Navy Tactical Support Activity (NTSA) editing U.S. Navy and Marine Corps aircraft procedural and tactical manuals. She was also a program analyst at NTSA managing the government contract for file conversion of these manuals from print to CD-ROM and overseeing mass CD-ROM production and distribution.

DARPA Director Discusses How Strategic Research Thrusts Provide Technological Innovations to Support Soldiers in Iraq

Ben Ennis and Jan Walker

The Defense Advanced Research Projects Agency (DARPA) is the principal agency within DOD for research and development (R&D) and demonstration of concepts, devices and systems that provide highly advanced military capabilities. DARPA has been providing technological innovations for national security for more than 40 years. The agency was responsible for funding development of many technologies that had a major impact on the world, including computer networking that eventually grew into the Internet, and the Global Positioning System (GPS). One of DARPA's most recent military projects is a 2-way cutting-edge speech translation system to help Soldiers crack language barriers in Iraq called the IraqComm™. The October 2006 issue of *Army AL&T Online* featured a full-length story on the IraqComm. Visit http://204.255.139.236/clients/asc/web/dev/pubs/alt_online/article.cfm?iID=0610&aid=03 to learn more.

U.S. Army SSG Lorenzo Johnson examines his GPS during a route reconnaissance patrol in Iraq. DARPA led the way in developing GPS for use by the military. (U.S. Marine Corps photo by CPL Brian A. Jaques.)

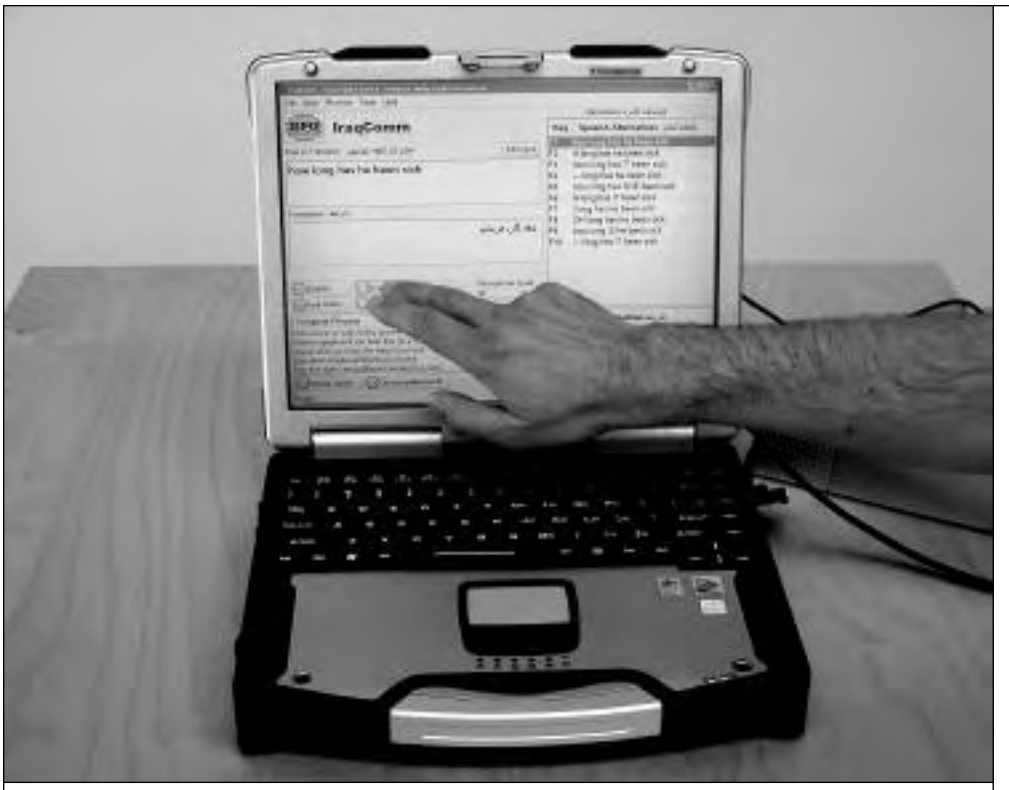
DARPA Director Dr. Anthony J. Tether discusses some of the agency's high-payoff, innovative R&D projects that are helping Soldiers in Iraq now and in the immediate future.

AL&T: DARPA is DOD's only research agency not tied to a specific operational mission and whose only charter is radical innovation. Tell us about DARPA's mission and some of your agency's recent activities.

Tether: DARPA is designed to be the "technological engine" for transformation, supplying advanced capabilities based on revolutionary technological options. DARPA conducts its mission by sponsoring revolutionary, high-payoff research that bridges the gap between fundamental discoveries and their military use. In many cases, our work is opportunity- or capability-driven (to create battlefield surprise) as well as threat-driven (to prevent surprise). DARPA's strategy for accomplishing its mission is embodied in strategic research thrusts. Over time, as national security threats and technical opportunities change, DARPA's strategic thrusts change.

AL&T: Tell us about some of these thrusts — particularly the ones that are impacting the Army right now — and the forces driving them, along with some illustrative examples.

Tether: DOD is in the middle of a transformation toward network-centric operations. Networks are the core of this concept. A major element of network-centric operations is command and control (C2) [or, as the Army now refers to it, battle command]. We developed a distributed C2 system — Command Post of the Future (CPOF) — that allows C2 centers to be wherever



DARPA funded the development of a speech translation device called the IraqComm, which Soldiers are currently field testing in Iraq. (Photo courtesy of SRI International.)

the commanders are, without regard to a fixed geographic location.

CPOF has succeeded beyond all expectations. The Army is using our CPOF technology in Iraq because it offers more flexibility and insight, and allows them to share information and respond more quickly. At least three divisions have successfully fielded CPOF. The 4th Infantry Division (ID) has been using CPOF in combat in Baghdad since its deployment in late 2005. The final transfer of CPOF deployment from DARPA to an Army Program of Record was scheduled for April 2006, but was effectively transitioned to the Army's program executive office two months early. There are additional requests for immediate fielding support from the entire Joint community, each of the other services individually and several interagency groups, as well as requests for high-priority expansion within the Army.

When I was in Iraq a few months ago, I visited many locations and was surprised to find CPOF terminals wherever I went. I asked how they were working and received great compliments on how personnel were now able to coordinate and collaborate at all times of the day. In fact, I heard one story where a major was able to give a briefing while just wearing his underwear to a general officer at another location.

I sometimes would ask if personnel knew where the CPOF terminals had come from and usually received a shrug of the shoulders, commenting that they thought it was the Army. This is the best compliment DARPA can get, when something becomes so embedded that DARPA's identity is lost, as it should be.

DARPA is working with the services toward a vision of filling the operational environment with unmanned systems networked with manned systems. A number of UAS are part of our support to the Army's FCS program, including the MAV.

AL&T: How is DARPA supporting the Future Combat Systems (FCS) effort?

Tether: DARPA is working with the services toward a vision of filling the operational environment with unmanned systems networked with manned systems. A number of unmanned aircraft systems (UAS) are part of our support to the Army's FCS program, including the Micro Air Vehicle (MAV). The MAV Advanced Concept Technology Demonstration program is delivering a low-cost, platoon-level "hover and stare" intelligence, surveillance and reconnaissance system for the dismounted Soldier. This program has successfully completed a month-long field experiment using 10 air vehicles with the 3rd Brigade, 25ID, U.S. Army Pacific. In October 2006, 50 air vehicles with refinements were delivered to 25ID for experimentation. Upon successful completion of that experimentation, those MAV units will remain with 25ID for their continued use. The Army and the FCS Lead Systems Integrator are proceeding with plans to develop the Class I FCS UAS using the MAV ducted fan.

Also, DARPA's FCS Communications (FCS-C) program has developed a mobile, ad hoc network designed to enable ground and airborne on-the-move and stationary network-centric operations. The FCS-C network was recently upgraded with new and modified software, such that FCS-C now operates as a gateway, rather than as a router network. The results were demonstrated interoperability among various current and

future communications radios — via the network, not the radio.

Specifically, interoperable communications were demonstrated by Army Signal School personnel at Fayetteville, NC, and Fort Benning, GA. We showed that it was possible to have previously incompatible tactical radios talk seamlessly among themselves and to more modern systems. We believe that this offers a potentially more affordable route for military communications interoperability in the future. This upgraded FCS-C system has been transitioned to the U.S. Special Operations Command for evaluation and use.

AL&T: Urban area operations (UAOs) are one of the most difficult challenges facing Soldiers in Iraq, and one of DARPA's thrusts is UAOs. What innovative technology has DARPA developed to help Soldiers conduct safer UAOs?

Tether: Our UAO thrust is aimed at creating technology to help make Joint operations in cities as effective as operations in nonurban areas. Let me describe some of the things we are working on in a little more detail.

DARPA's *Advanced Soldier Sensor Information System and Technology* (ASSIST) program focuses on tools to enhance the intelligence-gathering capabilities of our ground troops. We are developing special sensors, networks and databases so that patrol leaders can directly add to, and tap into, the collective experience of previous patrols, including the details of what has been encountered in specific neighborhoods. ASSIST will help intelligence analysts and front-line patrol leaders build and share knowledge of what's going on in various city neighborhoods. ASSIST is beginning to be integrated into training exercises of Army units preparing for redeployment in Iraq.

The *Networked Embedded Systems Technology* program is providing a common software infrastructure for future sensor nets, and we're demonstrating it in some exciting ways. In a test at Fort Benning, we showed that an ad hoc network of simple acoustic sensors could determine the source of a rifle shot to within two meters, within two seconds of the shot. In 2006, we tested a sensor network over a 10-square-kilometer area to simulate detecting people trying to cross a border or facility perimeter.

Our *Combat Zones That See* program is networking conventional video cameras together to monitor vehicle movement. Computers embedded in each camera find and characterize vehicles in view by color, size and number of wheels, and this information — including where each vehicle is parked or moving — is sent to a monitoring site where the data is pieced together. In 2005, we proved that the concept would work, and we have installed it at a base in Iraq so that we can extend perimeter security into surrounding neighborhoods.

A U.S. Army Soldier from 1st Battalion, 3rd Special Forces Group, prepares to launch a Tactical MAV, a UAS with a body length of just 21 inches. DARPA has fielded a smaller MAV to 3rd Brigade, 25ID for testing. (U.S. Army photo by SGT Andre Reynolds.)

A U.S. Army Soldier from 1st Battalion, 187th Infantry Regiment, 101st Airborne Division, assembles a portable radio set during a weapon cache search mission in Iraq. DARPA's FCS-C program recently demonstrated interoperable communications between incompatible tactical radios and more modern systems that are expected to make communications between tactical radios seamless and affordable. (U.S. Army photo by SPC Charles W. Gill.)

Our *Multispectral Adaptive Networked Tactical Imaging System* (MANTIS) program recently developed a new camera that provides unprecedented night vision, even on a moonless night. We are now miniaturizing these cameras and mounting them on Soldiers' helmets. MANTIS will network them together to allow a Soldier to see the same scene as his buddy around a corner, so they can quickly come up with a coordinated plan of action.

Another typical urban mission requires a U.S. team to pursue adversaries inside a multi-story building. Previously, the defenders have had a major advantage in knowing the interior layout. Technology that would allow our team to quickly map the inside of the building would go a long way to improving the team's effectiveness and safety. Recently designed *Radar Scopes* will allow troops conducting UAOs to sense through more than 12 inches of concrete to determine if someone is hiding inside a building or behind a wall. DARPA's Radar Scope does not provide images, but will provide critical situational awareness by enabling troops to determine whether a room is occupied before entering it. The unit weighs less than 1.5 pounds, runs on AA batteries and will cost under $1,000 in production quantities.

When traveling in a convoy, road noise makes it is difficult to know if you are under fire. DARPA's low-cost *Boomerang Shooter Detection and Location System* tells people in a convoy whether they are being fired upon and where the shots are coming from. Boomerang has been improved, based on results from the 50 original units deployed in Iraq, and an additional 66 upgraded units with superior system performance have been deployed to Iraq.

We are also developing novel, high-strength nets to stop mortar rounds and rocket-propelled grenades (RPGs). Counter-mortar nets have successfully caught 60 mm mortar rounds, while counter-RPG nets have proven successful at ranges of at least 50 meters.

Keeping suicide bombers at bay, while maintaining freedom of movement for our warfighters, is a key challenge. DARPA has demonstrated an artificial polymer "snow" that makes the ground very slippery, and that can easily be reversed to restore traction rapidly.

AL&T: How is DARPA using computing technology to help our military maintain technological superiority?

Tether: Computing technology is central to maintaining the U.S. military's technological superiority. One cognitive computing program is called the *Personalized Assistant that Learns* (PAL) program. PAL's goal is to use machine learning technology so information systems can adapt, in real time, to the changing conditions confronting military commanders. PAL systems will

Soldiers from the 1st Brigade Combat Team (BCT), 2nd Battalion, 37th Armored Regiment, 1st Armored Division, climb a stairwell as they clear a house during a patrol in Iraq. DARPA's recently designed Radar Scopes will allow Soldiers conducting UAOs to sense enemy troops or noncombatants through concrete walls. (Photo by SSGT Jacob N. Bailey, U.S. Air Force, 1st Combat Camera Squadron.)

automatically adjust to new environments and new users, helping commanders adapt to evolving situations and priorities and help new CP personnel become effective more quickly.

Learning technology developed under PAL has been applied to raw data taken from CPOF operations in Iraq to learn models of command activities. CPOF messages were analyzed to learn to identify topics of interest, such as checkpoints, routes and mortar attacks, and the networks of individuals who were involved in handling those topics. A PAL algorithm learned to recognize points where a CPOF user changed his focus of attention. A third application of PAL learning technology identified relationships among CPOF objects, such as objectives, activities, units, maps and reports, by examining the particular networks of users who shared them.

AL&T: What is DARPA doing to help Soldiers improve their performance and provide a degree of comfort while performing their mission?

Tether: DARPA's "bio-revolution" thrust seeks to answer the question, "How can we use the burgeoning knowledge from the life sciences to help the warfighter?" The *Peak Soldier Performance* program has developed a completely new approach to maintaining normal body temperature in the face of extreme heat. The *Rapid Thermal Exchange Device* is a special cooling glove into which one hand is inserted. A slight vacuum is applied to the palm, which contains special blood vessels that can act like radiators. Cold water circulates through the grip, and, as a result, large amounts of blood can be rapidly cooled, maintaining normal body temperature even in extreme heat or during exertion.

The device has been so successful in preliminary evaluation by the military that 125 prototype units are now deployed with an Army combat brigade in Iraq. In the next year, we will design and manufacture specially adapted devices for warfighters in vehicles and aircraft, as well as dismounted troops.

AL&T: Thank you for your insightful information.

Tether: I hope my remarks today have given you a sense of DARPA's programs and our ambitions.

A U.S. Army Soldier from Alpha Co., 2nd Battalion, 1st Infantry Regiment, 172nd Stryker BCT, provides security during a search through an area in Baghdad, Iraq. Soldiers in Iraq will benefit from a special cooling glove, called the Rapid Thermal Exchange Device, designed to maintain a Soldier's body temperature in extreme heat or during exertion. (Photo courtesy of PH1 Martin Anton Edgil, U.S. Navy.)

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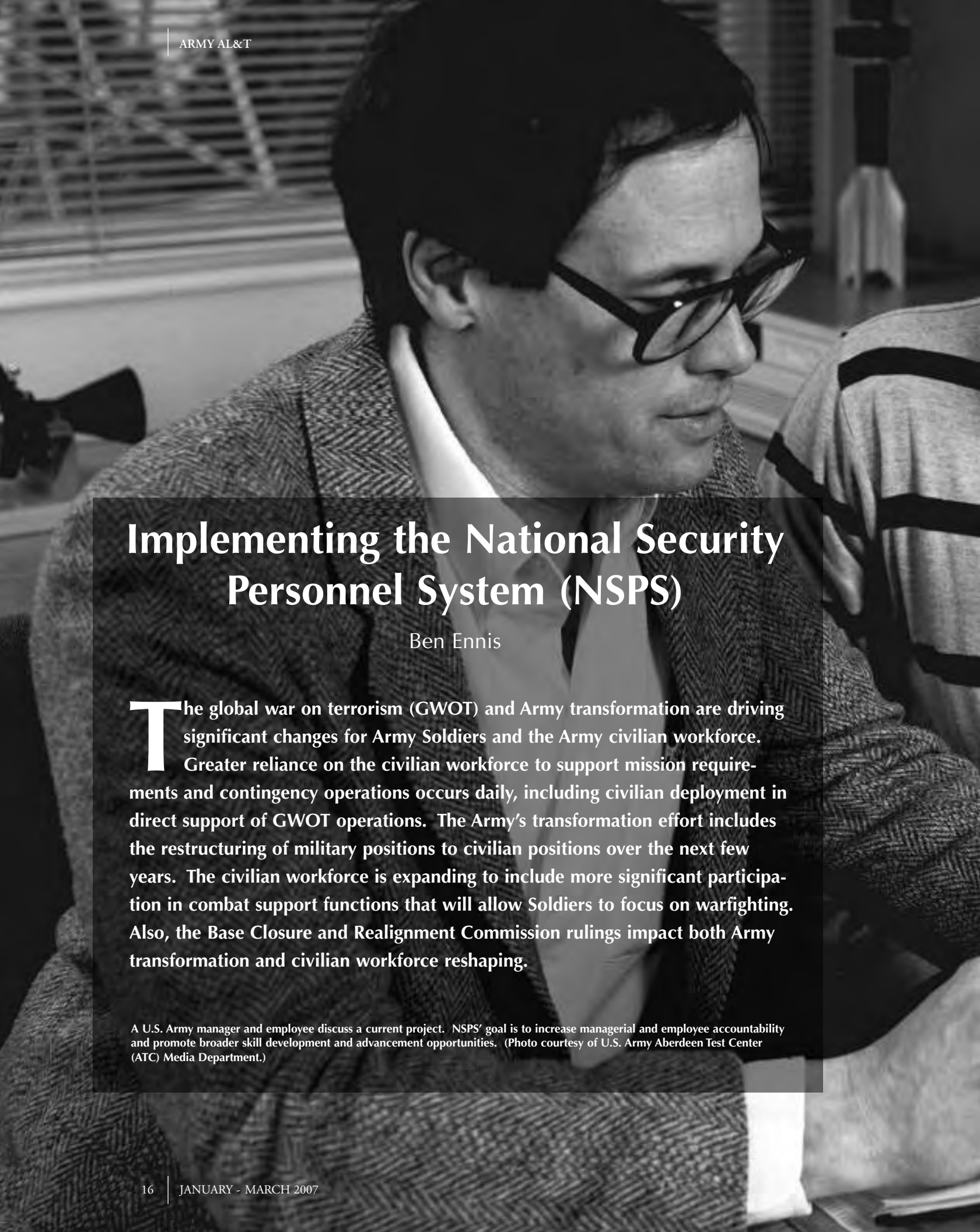


Implementing the National Security Personnel System (NSPS)

Ben Ennis

The global war on terrorism (GWOT) and Army transformation are driving significant changes for Army Soldiers and the Army civilian workforce. Greater reliance on the civilian workforce to support mission requirements and contingency operations occurs daily, including civilian deployment in direct support of GWOT operations. The Army's transformation effort includes the restructuring of military positions to civilian positions over the next few years. The civilian workforce is expanding to include more significant participation in combat support functions that will allow Soldiers to focus on warfighting. Also, the Base Closure and Realignment Commission rulings impact both Army transformation and civilian workforce reshaping.

A U.S. Army manager and employee discuss a current project. NSPS' goal is to increase managerial and employee accountability and promote broader skill development and advancement opportunities. (Photo courtesy of U.S. Army Aberdeen Test Center (ATC) Media Department.)

To deal with these challenges, the Army's strategic commitment requires a modern, flexible and agile civilian human resource system. Congress's passage of the *FY04 National Defense Authorization Act* authorized NSPS to help shape a more relevant and streamlined DOD workforce. The law allows DOD to establish new rules for how civilians are hired, assigned, compensated, promoted and disciplined within the framework of merit principles, accommodation of veterans' preference and respect for employees' right to bargain.

According to Craig Spisak, Director, U.S. Army Acquisition Support Center (USAASC), NSPS is critical to DOD's overall transformation to a results-oriented, performance-based culture. "NSPS is a pay-for-performance system that provides DOD with the tools necessary to compensate and reward its employees," said Spisak.

NSPS emphasizes key concepts that are core to the system:

- Accountability — Employees are responsible for their careers and performance. Employees' performance and contributions will pay off through salary increases and bonuses.
- Flexibility — NSPS is a simplified and adaptable management system that allows managers to place the right people in the right jobs at the right time.
- Results — Employees' performance and contributions are linked to achieving organizational goals and DOD's critical mission requirements.

Major NSPS objectives are, ultimately, to:

- Increase flexibility in hiring and assignments to reshape the workforce to meet changing mission requirements.
- Increase flexibility in pay to create a pay structure that supports latitude to adjust work assignments and organizational structures.
- Improve civilian performance by establishing a pay-for-performance system. Salary and retention will be based on contribution to mission, not seniority.
- Provide a responsive discipline, grievance and appeal process.
- Allow for effective and efficient management-union collaboration.
- Manage to funded workload.
- Increase managerial and employee accountability.
- Streamline processes, which should result in savings.

NSPS is critical to DOD's overall transformation to a results-oriented, performance-based culture. NSPS is a pay-for-performance system that provides DOD with the tools necessary to compensate and reward its employees.

Implementation Approach

Defense officials hope that the new system will make it easier to quickly hire experts and reassign employees as the department responds to terrorist and other post-Cold War threats. "NSPS promotes broader skill development and advancement opportunities in pay bands," says Jerold Lee, an Army Acquisition Demonstration (AcqDemo) Program Manager consultant involved with transitioning to NSPS. "Increases in pay will be based on employee performance and mission contribution, and employees will be encouraged to take ownership of their

A U.S. Army civilian synchronizes communications equipment as part of her daily duties and responsibilities. NSPS will make it easier to quickly hire experts and reward outstanding performance. (Photo courtesy of U.S. Army ATC Media Department.)

performance and successes," Lee emphasizes. "Most of the Army Acquisition, Logistics and Technology community are currently in the AcqDemo, which has prepared them for NSPS. However, NSPS brings flexibilities long sought by AcqDemo, and a significant difference is the NSPS performance management system," Lee adds.

The new personnel system is being implemented in phases. Each phase is known as a spiral, and each spiral may have multiple increments. Key NSPS provisions highlighted in the Department of the Army Civilian Corps NSPS Transition Plan follow.

Position Classification

The NSPS Position Classification program is designed to assign work and organize DOD in such a way that it accomplishes the national security mission while upholding the Merit Principle: "Equal pay should be provided for work of equal value, with appropriate consideration of both national and local rates paid by employers in the private and public sector, and appropriate incentives and recognition should be provided for excellence in performance." The principle strategically situates DOD to compete for candidates in the job market and supports establishing a fiscally sound and responsive pay system that rewards employees for their contribution to mission priorities.

Classification of NSPS positions is based on the primary work that is assigned and actually performed by employees. Under the NSPS Classification System, this work is assigned to a career group, pay schedule, pay band, occupational code and title. For more information on the NSPS Classification program, see the *DoD Civilian Personnel Manual (1400.25-M), Subchapter (SC) 1920, Classification*.

Compensation

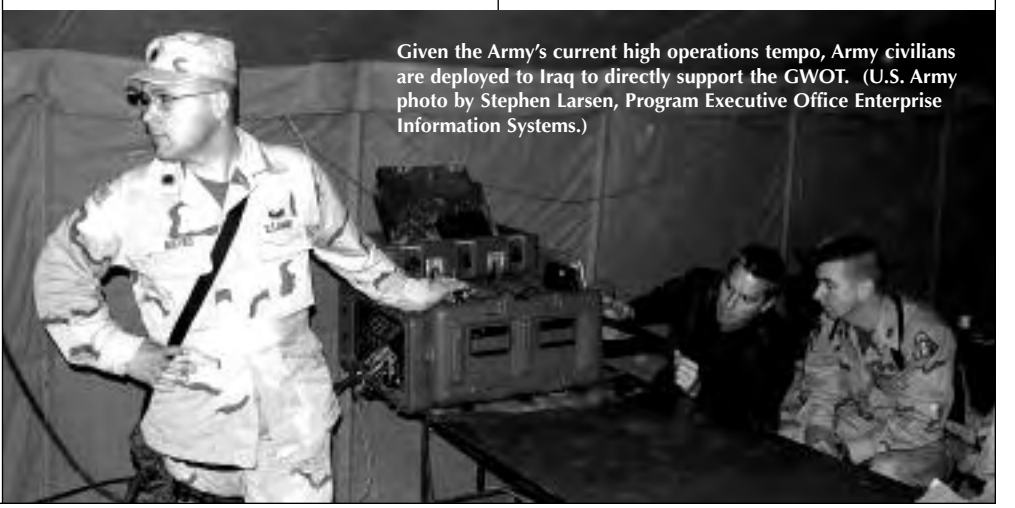
Under NSPS, pay increases are based on performance and market conditions, rather than longevity. Managers will align positions and pay according to their market equivalencies, position complexity and performance. Pay adjustments can also be made for specific occupations and specialties in a geographic area when justified by market conditions or specific recruitment and retention issues. Other key NSPS compensation elements include market-based pay band adjustments and broad authorities for salary adjustments in hiring, promotion, reassignment and performance-recognition decisions. Pay bands are a central feature of the new system and will replace the decades-old, 15-grade General Schedule used across most of the federal government. For more information on compensation, see *DoD 1400.25-M, SC 1930, Compensation Architecture.*

Performance Management

NSPS promotes a culture of high performance where the performance and contributions of the DOD civilian workforce can be more fully recognized and rewarded. The performance-based pay system is a key component of NSPS. The pay system is the linkage between pay and measures of organizational, team and/or individual performance to the overall contribution to the mission's success. The success of NSPS performance management depends highly on performance planning, measurement and linkages to organizational strategic goals and objectives. For more information on the NSPS Performance Management Program, see *DoD 1400.25-M, SC 1940, Performance Management.*

Pay Pools

NSPS will use a pay pool concept to manage, control and distribute



Given the Army's current high operations tempo, Army civilians are deployed to Iraq to directly support the GWOT. (U.S. Army photo by Stephen Larsen, Program Executive Office Enterprise Information Systems.)

performance-based pay increases and bonuses. A pay pool groups a number of positions together for purposes of calculating payout funds, determining assessment of performance and contribution, and determining incentive payouts for the employees in the pay pool. Each pay pool may encompass one or more occupations, career groups, pay schedules, pay band levels, salaries and/or performance levels. For more information on pay pools, see *DoD 1400.25-M, SC 1930, Compensation Architecture*.

Staffing and Employment

NSPS staffing and employment regulations include the ability to adapt quickly to mission needs and streamlined promotion and hiring processes. NSPS does not change current requirements to adhere to Merit System Principles, rules against prohibited personnel practices, veterans' preference regulations or antidiscrimination laws. NSPS staffing and employment regulations provide a framework for establishing DOD-specific requirements for:

- Job qualifications.
- New hiring authorities.
- Initial probationary periods of at least one year and not to exceed three years.
- In-service probationary periods.
- Competitive examining (hiring candidates not currently federal employees).

The staffing and employment implementing issuance provides new hiring authorities in situations where it has been determined a severe shortage of candidates or a critical hiring need exists. DOD may determine such a need exists or may act upon a response to a written request from components. In addition, the implementing issuance provides new flexibility such as:

- Allows temporary appointments for a period up to three years and term appointments up to five years (each is one year longer than current regulation).
- Allows noncitizens to be appointed when there are no qualified U.S. citizens (overseas and CONUS).
- Allows first consideration to be given to applicants from within the local commute area (currently must consider all U.S. citizens who apply).
- Eliminates the requirements for a current DOD employee to complete 52 weeks at a certain grade level prior to promotion.
- Allows management to temporarily promote a current DOD employee up to 180 days without having to advertise the vacancy (currently limited to 120 days).
- Provides management with new options for filling vacancies with current DOD employees. These new processes do not require vacancy announcements and streamline the consideration and selection timeline.

NSPS uses pay pool groups to determine performance-based pay increases and bonuses. (*Army AL&T* Magazine stock photo.)

Workforce Shaping

NSPS workforce shaping regulations provide a framework for establishing DOD-specific requirements for reducing overall staff and pay band levels when realigning, reorganizing and reshaping the workforce as a result of organizational decisions such as reduction in force, transfer of function and furlough. The regulations are more streamlined and mission responsive, provide more emphasis on performance, are less disruptive to employees and mission, and retain veterans' preference rights. The DOD implementing issuances provide details for carrying out provisions included in the regulations.

Because NSPS is a significant cultural change in how we supervise and manage the civilian force, much of the front-line training is left to the discretion of the individual military organizations. According to Mary E. Lacey, DOD NSPS Program Executive Officer, there will be a window for shifting employees into NSPS to ensure that managers and employees receive training on the new pay and personnel rules. Some organizations will team human resources (HR) practitioners with line managers to train their workforce. In other cases, either the manager or the HR practitioners will train the workforce directly.

Online sites offering NSPS information are: **http://www.cpms.osd.mil/nsps** and **http://cpol.army.mil/library/general/nsps**.

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Addressing Human Factors Issues for Future Manned Ground Vehicles (MGVs)

Dr. Kaleb McDowell, Dr. Kelvin S. Oie, Terrance M. Tierney and Dr. Oded M. Flascher

Future MGVs will be fast, lightweight and fully operational while moving. This imposes several technological and human factors challenges. These sophisticated vehicles are expected to have increased lethality and survivability with fewer Soldier operators than current combat vehicles. It is also expected that Soldiers will drive and defend their vehicles with limited direct vision, relying on advanced, networked information and indirect visualization through sensor systems. Soldiers must effectively use complex interfaces, such as control devices, instrument panels and information-rich displays, while either stationary or moving over any terrain. Soldier performance must not be adversely impacted by disorientation or motion sickness. The U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC), in collaboration with the U.S. Army Research Laboratory, Human Research and Engineering Directorate (ARL HRED), is developing technologies supporting the Army's Future Combat Systems (FCS) development team that will enable future MGVs to meet these high expectations.

Effective scanning of the local environment while maneuvering through urban terrain will continue to present the driver and crew the greatest challenges for survivability and maintaining situational awareness. Here, Soldiers from the 172nd Stryker Brigade Combat Team (BCT) patrol the streets of Mosul, Iraq. (U.S. Air Force (USAF) photo by TSGT John M. Foster.)

History

Since the early 1990s, TARDEC has teamed with ARL HRED to develop crew stations for future warfighters. The Crewman's Associate Advanced Technology Demonstration (ATD) provided baseline advanced Soldier-machine interface concepts and explored the feasibility of reduced manning in performing ground combat vehicle functions within a simulation environment. Appropriate Crewman's Associate designs were subsequently leveraged by the Vetronics Technology Testbed (VTT), which integrated two crew stations into a Bradley A0 hull. VTT demonstrated drive-by-wire capability, indirect vision driving, embedded simulation and multifunctional displays, and examined the viability of reduced crew size to perform a scout mission.

This work evolved into the Crew Integration and Automation Testbed (CAT)-ATD, focusing on reducing crew workload and improving crew performance through automation technologies. CAT-ATD integrates the latest generation of crew stations into a surrogate, FCS-like (Stryker) chassis, using the Autonomous Navigation System (ANS) for enhanced mobility. These state-of-the-art crew stations have been used several times to demonstrate developing capabilities for tasks including indirect vision driving, navigation, command and control, communications, target acquisition, and control of ground and air unmanned assets in field environments. CAT-ATD is augmented by the Technology for Human-Robot Interactions (HRI) in Soldier-Robot Teaming Army Technology Objective (ATO), which focuses on effective Soldier teaming with robotic assets, while also minimizing workload requirements. In all, TARDEC and ARL HRED have worked for more than 15 years on developing experimental, field-testable crew stations for the future.

Capabilities for Solving Human Factors Issues

Critical to MGV development is the ability to address Soldier performance issues during the research and development cycle. TARDEC and ARL HRED have amassed and continue to develop capabilities and resources toward these ends through:

- Ruggedized platforms (CAT-ATD) to evaluate design alternatives for crew station functionality in field environments.
- Motion-base platforms in TARDEC's Ground Vehicle and Simulation Laboratory to test system and Soldier performance in realistic but controllable motion environments.
- High-fidelity, flexible, in-house computer simulation capabilities and reconfigurable testbeds located on-site with vehicle developers enabling rapid prototype development.
- Established collaborations with academic, government and industry research institutions to ensure the best concepts impact the development process.

CAT-ATD integrates the latest generation of crew stations into a surrogate, FCS-like chassis, using the ANS for enhanced mobility.

These resources, coupled with in-house expertise, allow TARDEC and ARL HRED to perform necessary Soldier performance evaluations so that critical information is available at optimal times within the developmental cycle.

FCS MGV Soldier Performance Issues

Ensuring that system performance requirements are met begins with analyzing and breaking down human factors requirements to identify fundamental issues. Four interrelated, core issues that must be addressed to enable effective FCS MGV designs have been

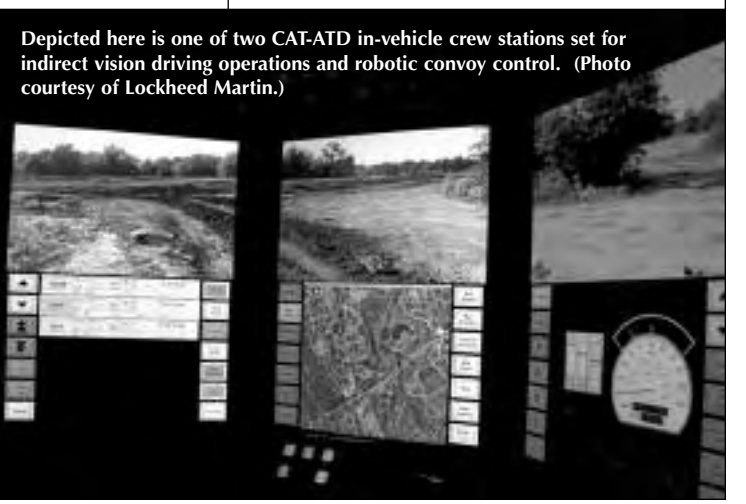
SPC Corey Nixon, 172nd Stryker BCT, observes the road ahead from the safety of his Stryker vehicle while patrolling the streets of Mosul, Iraq. TARDEC and ARL HRED are developing crew stations that will optimize Soldier survivability, enhance functionality of human-machine interfaces and greatly improve Soldier performance. (USAF photo by TSGT John M. Foster.)

The CAT-ATD vehicle recently completed a field experiment where Soldiers performed indirect vision driving, robotic convoy control, route planning, local area security and simulated weapons firing tasks. (Photo courtesy of Lockheed Martin.)

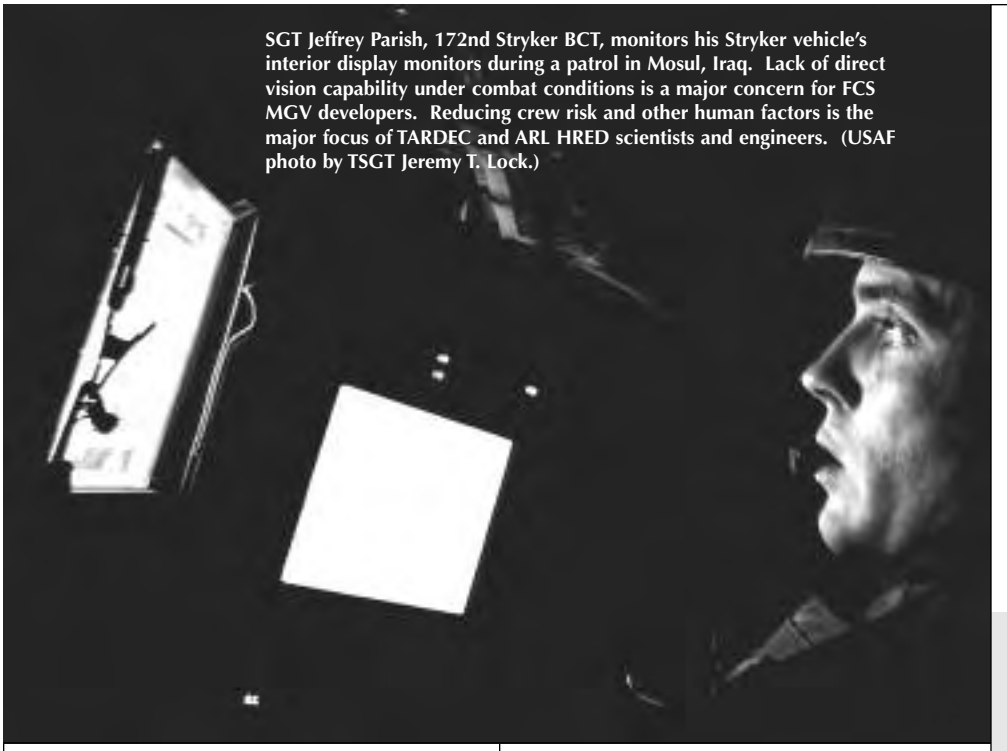
identified by TARDEC, ARL HRED and FCS Lead Systems Integrator (LSI) representatives as follows:

- *Manning*. FCS MGVs are being developed to be smaller and more mobile than currently fielded systems under the paradigm of information dominance: "See first, understand first, act first and finish decisively." One consequence of smaller vehicles is downsizing the crew. Reduced vehicle manning potentially allows the future Army flexibility in managing manpower and reducing its logistical footprint in the field. MGVs are planned to be operated by two common crew members: the driver and the commander. The Mounted Combat System will have three crew members — commander, driver and gunner — and in most variants, additional mission crew members will operate mission-specific equipment. Reducing crew size increases each crew member's responsibilities and challenges developers to ensure that designs enable Soldiers to execute missions without being overwhelmed.
- *Area Security*. FCS design concepts will result in limited direct vision around the vehicle. The crew will use indirect vision systems that provide a high-fidelity representation of the area around their vehicle. These systems must compensate for the lack of direct vision and augment FCS network information, which is required to automatically identify and inform warfighters about most threats. However, indirect vision systems that allow quick and effective scanning of the local environment are under development. This poses a significant risk to Soldier survivability in the near term and, ultimately, to mission success in certain environments, such as urban terrain where local threats may not always show up in the FCS network information system. Expected performance decrements associated with future design concepts have a secondary manning consequence. Two common crew members will already have difficulty with mission management and mobility tasks (see *Indirect Vision Driving*, below), which will be further compounded by maintaining area security.
- *Indirect Vision Driving*. Indirect vision driving also has performance and workload consequences. Similar to the situation described above under *Area Security*, current indirect vision technologies will require enhancements to achieve direct-vision driving capability. The challenges become problematic in a reduced crew environment, and will force FCS drivers to maintain situational awareness (SA) over a broader area than current combat vehicle drivers. Today, driving is accomplished through teamwork, with all three or four crew members responsible for area security. Additionally, drivers must determine and maintain the vehicle's path. The smaller FCS crew size will force significant changes, with drivers likely assuming a large portion of the navigation function currently performed by the vehicle commander. This, in turn, will increase each driver's SA and workload demands. ANS utilization planned for FCS may at times significantly offset increased driver workload. However, ANS will, at best, need to be supervised and, at worst, necessitate manual driving because of changing tactical needs or ANS limitations.
- *Vehicle Motion Effects*. Maintaining high levels of Soldier performance when operations occur in moving vehicles is a recurring challenge. The "motion effects" challenge includes,

Reducing crew size increases each crew member's responsibilities and challenges developers to ensure that designs enable Soldiers to execute missions without being overwhelmed.



Depicted here is one of two CAT-ATD in-vehicle crew stations set for indirect vision driving operations and robotic convoy control. (Photo courtesy of Lockheed Martin.)



SGT Jeffrey Parish, 172nd Stryker BCT, monitors his Stryker vehicle's interior display monitors during a patrol in Mosul, Iraq. Lack of direct vision capability under combat conditions is a major concern for FCS MGV developers. Reducing crew risk and other human factors is the major focus of TARDEC and ARL HRED scientists and engineers. (USAF photo by TSGT Jeremy T. Lock.)

but is not limited to: understandable presentation of information, implementation of controls minimally influenced by vehicle motion, and reduction of Soldier disorientation and motion sickness. These factors reduce performance associated with security, driving and mission tasks, and will increase the associated workload, thereby influencing the manning issue.

Optimizing Soldier Performance Through Teamwork

The next step in addressing MGV human factors issues is identifying and developing potential solutions to enable effective engineering designs. Each FCS MGV issue outlined here could independently lead to MGV design failure, but it should be clear that these areas are also strongly interrelated. The greatest challenge will be designing a system that allows Soldiers to perform driving, scanning and mission tasks *simultaneously*. This highly complex problem is the focus of technology development and integration being undertaken by efforts such as CAT-ATD. These problems necessitate the distinctive, specialized capabilities and resources of TARDEC and ARL HRED as follows:

The greatest challenge will be designing a system that allows Soldiers to perform driving, scanning and mission tasks *simultaneously*.

- Fielded partial solutions to indirect vision driving including demonstrating the impact of unity vision and the effects of controller devices on drive-by-wire systems.
- Used the TARDEC motion-base platform to examine the impact of MGV motion on head-mounted and flat-panel displays used for driving.
- Collocated simulations and laboratories with developers, which allowed the interface for the CAT-ATD crew station to be redeveloped in two years.
- Established collaborations with the University of Central Florida, the National Institutes of Standards and Technologies, General Dynamics Land and Robotic Systems, BAE Systems and Lockheed Martin who have provided important insights into the implementation of robotic control.

Already, significant progress has been made toward solving the FCS MGV Soldier performance issues raised above. Considerable work, however, remains to be done to optimize Future Force designs for maximum Soldier effectiveness. The resources identified here provide TARDEC and ARL the Joint capability to assess and solve these and other human factors issues for the Future Force and beyond.

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Motion-Base Simulation Guides Future Force Systems Design

Harry Zywiol, Dr. David Gorsich, Dr. Kaleb McDowell and Dr. Susan Hill

The U.S. Army Tank and Automotive Research, Development and Engineering Center (TARDEC), in collaboration with the U.S. Army Research Laboratory (ARL), Human Research and Engineering Directorate (HRED), are using TARDEC's Ride Motion Simulator (RMS) to address design requirements for Future Force systems. These systems will be lightweight, highly mobile vehicles that will use complex information systems to ensure Soldier survivability and system lethality. A major challenge and program risk identified by Future Combat Systems is that Soldiers will need to maintain a high-performance level even when their vehicles are moving over rugged terrain. This motion-effects challenge involves a host of problems, including presenting critical information in an understandable way, implementing control devices that allow the successful completion of mission operations and reducing potential disorientation and motion sickness, all of which will be adversely affected when Soldiers are bounced around in moving vehicles. Making decisions on motion-effects issues is all the more difficult because potentially crucial design choices must be made for vehicles with unknown ride characteristics. Through the combined efforts of researchers at TARDEC and ARL HRED, a systematic approach using motion-base simulation is being used to address these challenges.

TARDEC's Ground Vehicle Simulation Laboratory (GVSL) fully powered turret systems stabilization experiments have resulted in gun turret drive improvements for M2 Bradley Fighting Vehicles (BFVs). Innovations such as this improve Soldier lethality and survivability in close combat and urban environments. Here, a patrol of 39th Brigade Combat Team BFVs and Humvees search for insurgents near Al Taji, Iraq. (U.S. Air Force photo by SSGT Ashley Brokop, 1st Combat Camera Squadron.)

History

For 20 years, TARDEC's Ground Vehicle Simulation Laboratory (GVSL) has been developing simulation capabilities with full motion-base simulators, reconfigurable crew workstations, several existing and theoretical ground combat vehicle (GCV) models and high-resolution dynamic terrain models. These facilities have produced a wealth of applied research and have fostered manned ground vehicle technology development. The GVSL produced numerous human factors assessments on crew station component technologies such as control handles and display devices. Fully powered turret systems stabilization experiments produced gun turret drive improvements in the M2 BFV.

Recently, the RMS was heavily used to evaluate Humvee seats and restraints using combat-equipped Soldiers.

TARDEC's GVSL operates various-sized simulators that can potentially accommodate as many as 9 Soldiers in a reconfigurable vehicle mock-up and are capable of generating complex 6-degree-of-freedom motions of payloads up to 25 tons. Furthermore, GVSL has developed detailed models of GCVs including the Stryker, Humvee and a futuristic 24-ton tracked vehicle with ride characteristics that can be reproduced through high-fidelity computer simulations. These simulations also use dynamic terrain models developed through programs such as the High-Resolution Virtual Terrain Small Business Innovative Research and the High-Fidelity Ground Platform and Terrain Mechanics (HGTM) Army Technology Objective (ATO). These models include environmental factors such as wind, mud and snow, allowing for more realistic interactions between vehicles and the environment.

For example, when a vehicle passing over terrain compacts the soil, a second vehicle passing over the same terrain section will experience a different ride characteristic. The combination of platforms, and vehicle and terrain models, allows a wide range of vehicles, terrain and crew members (gunner, commander or driver) to be simulated and re-created, allowing researchers to examine each Soldier's performance within highly controlled, realistic operational environments.

The Necessity of Motion-Base Simulation

Ensuring that future Soldiers will be able to perform while the vehicles are on the move is critical to the successful development of Future Force manned GCVs. Previous research has made it clear that motion effects issues can only be addressed by looking at Soldier performance in motion environments,

because conclusions and design recommendations obtained in stationary environments may not provide optimal solutions for Soldiers-on-the-move or in combat situations. There are three primary benefits of using motion-base simulators to augment actual in-vehicle testing:

- *Laboratory Control* — Better definition and repeatability are two of the major advantages for research and assessment gained by using simulators. Motion-base simulators can be used to carefully define rich environments and precise scenarios that can be repeated exactly, which is difficult, if not impossible, in real-world environments. This is crucial to ensure the validity of experimental findings.
- *Evaluation Prior to Construction* — Faster feedback on design decisions is critical. One of the most difficult problems for Future Force systems design is assessing motion effects on vehicles that don't yet exist and, importantly, have yet unknown ride qualities. Using simulations, vehicle models can be constructed from known or proposed future vehicle parameters such as suspension, drive and weight. Simulations can also be used to generate the predicted motions of future vehicle designs within motion-base simulators. Soldier performance can be examined and important feedback can be provided early in the design process before metal is bent.
- *Efficient Use of Resources* — Simulation can provide both resource and time-effective (see above) proving grounds for examining design alternatives, including Soldier-in-the-loop experimentation. Motion-base simulation offers the ability to solve many initial problems, such as vehicle motion effects, in a more effective manner by evaluating different design solutions before expensive prototypes are constructed and critical resources are spent in lengthy and costly field testing. Ultimately, more efficient evaluation of design alternatives can be achieved.

A participant operates the CAT mounted on the RMS during a recent experiment. TARDEC and ARL use the simulator to test issues including the effects of ground vehicle motion environments on Soldier performance. For illustration purposes, the crew station is opened. However, for testing purposes, the crew station can be enclosed to simulate a "buttoned-up" environment. (Photo courtesy of TARDEC.)

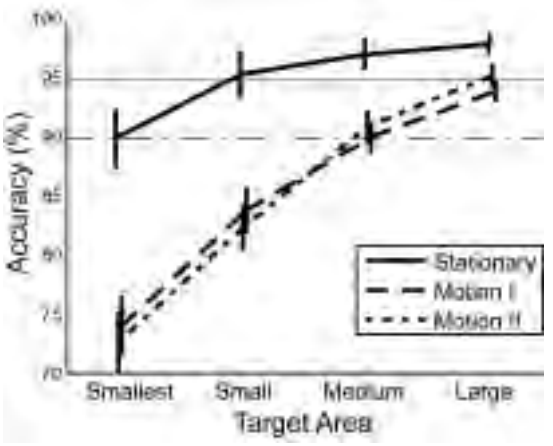
Over the past three years, TARDEC has teamed with ARL to specifically examine Soldier performance issues within these motion-base environments. Using a simulator and monitor control system integrating scenario design, and operation and data acquisition, researchers have examined the field-of-view influences on driving performance and ground vehicle motion effects on reach accuracy for the Crew Integration and Automation Testbed-Advanced Technology Demonstrator (CAT-ATD) program. For the HGTM ATO, TARDEC and ARL researchers looked at issues including ground vehicle motion environment effects on Soldier performance on control-type tasks and evaluating potential mitigations for motion sickness.

Modifying Military Standards

In a joint project, the University of Michigan, TARDEC and ARL used motion-base simulation to conduct research supporting design criteria refinements stated in *Military Standard 1472 Design Criteria Standard, Human Engineering, 1999*. This project specifies button-size design for Soldier-machine interfaces. TARDEC's midsize motion-base platform, the RMS, which supports a reconfigurable cab large enough to allow simulation of a single-occupant crew station outfitted with vehicle controls, displays and seats with restraints, was used to conduct research to determine the appropriate button size for Soldiers operating touch-screen displays while on the move. The study had a twofold purpose: to examine vehicle motions that will affect Soldiers' reach to operate buttons on an interface and to examine the operation of touch-screen interfaces that are advantageous for their design flexibility, but problematic because operators cannot feel when a button has been pressed.

In a joint project, the University of Michigan, TARDEC and ARL used motion-base simulation to conduct research supporting design criteria refinements stated in *Military Standard 1472 Design Criteria Standard, Human Engineering, 1999*. This project specifies button-size design for Soldier-machine interfaces.

Participants were asked to press different sized touch-screen and physical



An RMS study supports the need for increased button sizes to operate touch screens in motion environments.

buttons in the RMS cab while experiencing a stationary and two types of motion environments. The results obtained, using an advanced motion-capture camera system, showed that participants' reaching movements were degraded in timing and accuracy during RMS cab movement, as compared to when it was stationary. The study (see figure above) suggests that increasing button size should increase performance accuracy.

The experiment results, using motion-base simulation, are consistent with anecdotal evidence derived from the CAT-ATD, a joint TARDEC-ARL program that examines advanced crew station design within field environments. Crew station tests in the CAT-ATD have suggested touch-screen display applications within motion environments require larger buttons located next to bezels for stabilization points for the operator. The combination of empirical evidence from the RMS study with the practical application of the CAT-ATD program suggests that either larger button sizes or another form of mitigation (stabilization points, modifying vehicle ride quality) will be required to obtain sufficient accuracy goals during operations-on-the-move in Future Force systems.

This example shows how research results can be translated into design recommendations that have been proven in actual field evaluations. Particularly important is that existing human engineering standards for interface designs that work well for Soldiers in stationary environments may need to be reevaluated when they are used in moving vehicles. Motion-base simulators like TARDEC's RMS provide a useful environment for examining these issues.

The TARDEC motion-base RMS addresses Soldier performance issues for future systems design. The motion simulator provides a means for efficient, controllable and repeatable assessment to examine motion issues that will affect Soldiers as they are performing their missions on the move. Finding solutions to this challenge will be critical to the success of Future Force systems. Through the combined use of high-fidelity motion-base simulation and fielded prototypes such as CAT-ATD, TARDEC and ARL are conducting the research necessary to acquire the right information so the best decisions can be made to produce the most effective systems for our Soldiers.

Pictured is a CAT-ATD advanced crew station, where increased button size was used for in-field testing. (Photo courtesy of Lockheed Martin.)

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Counterfeit Automotive Replacement Parts Entering the DOD Procurement System

Louis J. Gorenc

The federal government has the duty to protect the public and its employees from known risks that would result in harm. We see examples of this every day in border protection, transportation safety, purity standards in our foods and pharmaceuticals, building construction codes and thousands of other everyday procedures and products that are taken for granted in our unique and great country. Unfortunately, failures do occur, but not often, and they are publicized nationwide, both because the event is rare and because it may show a need for government remedial attention to solutions. But the government cannot foresee and react quickly enough to halt all risks.

In a recent article for *Light & Medium Truck* magazine, Heavy Duty Manufacturing Association Vice President Tim Krous stated, "The difference between genuine and non-genuine parts often lies in the material and testing used to manufacture the product … Knock-off parts … are made with substandard material that doesn't meet the design and specifications of the original manufacturer." Think about the implications this holds for the Army's hundreds of thousands of motor vehicles, engines, generators and specialized equipment. The procurement of parts and spares entering the logistics and maintenance system amounts to hundreds of millions each year. Therefore, vigilance is critical. (U.S. Air Force photo by TSGT James D. Mossman.)

A fast-growing crisis in dangerous counterfeit and bogus automotive parts is flooding the United States and they are being unknowingly purchased by the federal government, DOD and its agencies. The flood of counterfeit and knock-off products has become dangerously pervasive in areas ranging from aircraft and automotive engines to nuclear reactors and pharmaceuticals. Only educated consumers, both private and public, can stem the flow.

What Are Counterfeit Products?

The United States Code (USC) Title 18, Section 2320, defines counterfeit goods as "a spurious marked item that is used in connection with trafficking in goods or services; that is identical with, or substantially indistinguishable from, a mark registered for those goods or services on the principal register in the United States Patent and Trademark Office and in use; and the use of which is likely to cause confusion, to cause mistake or to deceive."

How Are Counterfeit Products Different From Knock-Offs?

Knock-off parts are more insidious than counterfeit parts because they appear to be the "real McCoy" produced by the original manufacturer, though they are actually inferior in design and reliability. They are fakes, but their close appearance to an original trademarked part dupes the customer into thinking it is the trademarked item. Appearance is the key to defining knock-offs. Knock-off packaging is almost identical to patented/trademarked manufacturer's design, usually with the trademark missing. The stock number or item number will be the same as the original equipment manufacturer's (OEM) number, further confusing the purchaser. The distinct trademark packaging color scheme will be duplicated, but the OEM trademark icon is missing. The bogus item may not be considered counterfeit under *USC Title 18* because it is not being represented as a trademark owner's item.

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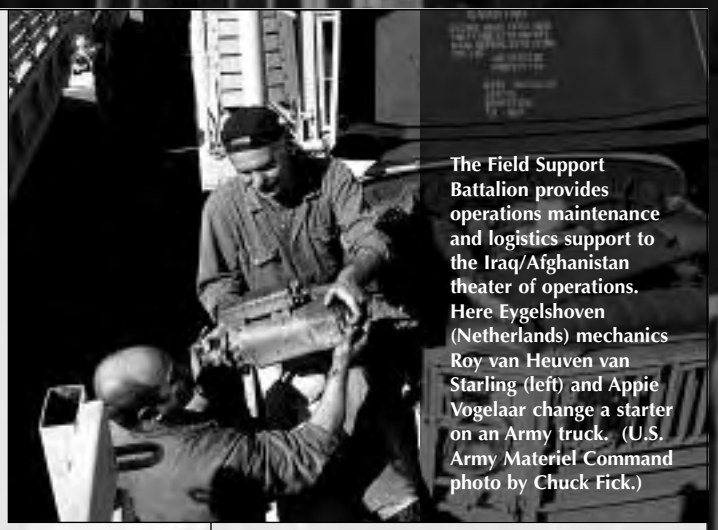
Andrea Fischer's article in the July edition of *Light & Medium Truck* magazine quoted Tim Kraus, Heavy Duty Manufacturers Association Vice President (VP) as saying, "Knock-off parts, on the other hand, simply mimic many of the characteristics of a genuine part, including the model number, and may be sold legally as long as the part does not have patent protection ... some parts are made with the intent to look like genuine parts. ... The difference between genuine and non-genuine parts often lies in the material and testing used to manufacture the product. ... There is a definite difference between legitimate after-market replacement parts where form, fit and function is the same as the original equipment, and knock-off parts ... typically come from less than reputable manufacturers [and] are made with substandard material that doesn't meet the design and specification requirements of the original equipment manufacturer."



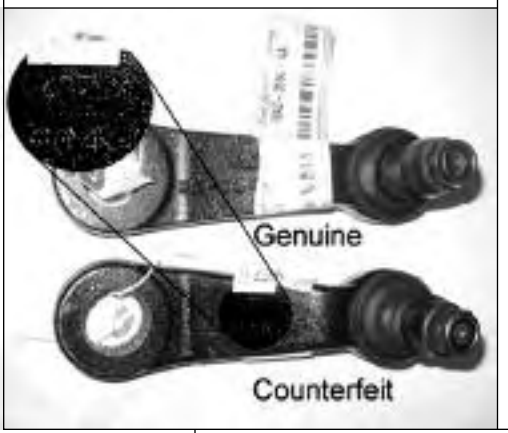
The Field Support Battalion provides operations maintenance and logistics support to the Iraq/Afghanistan theater of operations. Here Eygelshoven (Netherlands) mechanics Roy van Heuven van Starling (left) and Appie Vogelaar change a starter on an Army truck. (U.S. Army Materiel Command photo by Chuck Fick.)

The article also quoted Neal Zipser, Marketing and Communications VP for the Motor & Equipment Manufacturers Association (MEMA): "A substandard part could be as inferior in quality as a counterfeit part, but not be considered illegal because it is sold as a generic replacement product. ... The most common type of non-genuine or counterfeit part entering the U.S. is not a new or innovative product, but rather a commonly used, easily duplicated one. Counterfeiters look for the most popular 20 to 25 part numbers out there — usually products that are late in the production cycle and have been in the market for 20 or 30 years."

Why Should We Be Concerned?

Any counterfeit/bogus item is potentially dangerous to consumers and users. Counterfeit or knock-off items include prescription drugs; industrial

and household electrical safety equipment; military and commercial aircraft parts; concrete used in major construction projects; steel wire rope cable; electronic components used in weapons and computer systems; and fabrication steel used in commercial and military projects. The automotive list is endless and includes all types of automotive maintenance and high-volume parts, including steering and brake components. Automotive oil and gasoline filters, windshields, antifreeze, camshafts, rocker arms, transmission fluids, bearings, belts, distributor caps, valves, alternators and starters, air conditioner condensers, shock absorbers and struts, oxygen sensors, spark plugs and tires top the list. Bolts and other high-strength fasteners without the tensile strength required to fasten critical parts, as well as nonstandard automotive electrical connectors and wiring that can cause vehicles fires, are a major concern. Astoundingly, entire automobiles have been copied in China and sold as genuine equipment.



How Does This Affect the Federal Government?

The federal government has the greatest interest in bogus products because of public health, welfare and safety considerations. Considering the enormous variety of items, and huge quantities of products procured by U.S. agencies, all public employees should be aware of the threat that bogus parts pose. The need for superior products to perform critical duties, maintain public safety and ensure the best value for taxpayers demands education and vigilance by anyone entrusted with the responsibility for purchasing equipment, parts and supplies. The monetary cost of bogus, nonconforming items to the government is constantly rising. In 1989, DOD's Inspector General (IG) estimated that an Air Force logistics center paid more than $100 million [in two years] for substandard spare parts.

> Nonconforming products can fail and result in death or injury to the public and workers, increase government program costs significantly and waste tax dollars.

A NASA IG Office press release, dated Jan. 28, 2003, reported that "On Jan. 16, 2003, the U.S. Attorney's Office, Los Angeles, CA, filed a 7-count superseding indictment against RAM Enterprises Inc., of Valencia, CA. The indictment alleges that [three U.S. citizens] manufactured counterfeit connectors and altered products to appear as though they were made by qualified vendors. These connectors were sold to companies who then distributed them to NASA, DOD and commercial corporations."

In yet another case, the U.S. District Court in Florida sentenced a man in 2004 to two and a half years in federal prison, three years of supervised probation and $54,932.20 repayment to DOD for a scam selling bogus critical-to-flight F-16, F-14, airborne warning and control, and Army helicopter parts. These items were manufactured from substandard materials and had false labels indicating that the sources were government-approved manufacturers. The parts, including critical oil seals, did not meet required specifications and jeopardized the lives of all aircrews and their aircraft once they were installed. The *South Florida Business Journal's* investigative article reported, "Notwithstanding the Defense Department's directive, [the defendant] made arrangements with a nonapproved manufacturer to produce counterfeit replications of the seals in a plant in Taiwan. The counterfeit seals, which the government said contained markings identifying them as the approved Chicago Rawhide-manufactured item, were made from substandard nitrile rubber. This material has marginal stress tolerance capabilities and questionable ability to withstand exposure to intense heat and hydraulic fluids normally associated with military aviation use."

A congressional report titled *Nuclear Safety and Health: Counterfeit Substandard Products are a Government-wide Concern* stated, "Nonconforming products, such as fasteners, pipe fittings, electrical equipment and valves, have been installed in nuclear power plants, naval submarines, commercial and military aircraft, and the space shuttle. Such products include those that are fraudulently produced (counterfeit) and/or substandard because they do not conform in quality to design or other specifications. Nonconforming products can fail and result in death or

injury to the public and workers, increase government program costs significantly and waste tax dollars."

The report went on to describe a plane crash in September 1989 involving a Convair 580 turboprop. The death of everyone aboard was attributed to the use of counterfeit bolts that lacked the necessary strength to withstand normal flight conditions. The bolts had the correct grade and manufacturer markings but were substandard, despite having the "correct" documentation of manufacture. From 1973 to 1996, the Federal Aviation Administration attributed 174 crashes or accidents to unapproved parts installation.

These examples help document how widespread counterfeit and nonstandard parts have become. There have been reports of substandard foreign parts entering the Army procurement system with complaints made to management to stop additional purchases. Since the Army has hundreds of thousands of motor vehicles plus other engine drive units, generators, pumps and other specialized equipment, the procurement of parts and spares amounts to hundreds of millions of individual components entering the logistics and maintenance system each year, elevating the potential that unsafe bogus parts are being purchased and installed on military vehicles or aircraft. Additionally, with the Soldiers' use of the unit's International Merchant Purchase Authorization Card to purchase automotive-type repair parts, this can contribute to unsafe and nonconforming parts being purchased and installed on Army vehicles. Everything from bearings and grease seals, brake and steering components, windshield replacement glass to hardware, bolts and lifting chains, along with thousands of other items can potentially put our Soldiers and civilian workforce at serious risk.

With the federal government's large fleets of vehicles, including the Army's logistical needs for Reset/Recap vehicles returning from Iraq and Afghanistan, bogus auto parts are a major concern. In the June 2006 issue of *Light & Medium Truck* magazine, Andrea Fischer's "Imitation Parts Pose Safety Risk" article states, "Sales of counterfeit and knock-off parts for use on heavy-duty trucks are posing safety risks to fleets, with the largest problem being brake components." Aftermarket executives said parts that do not meet braking system specifications compromise truck safety because they can cause increased wear to other components, and lead to premature part failure and increased stopping distance. "Any variance in any one component in the whole system can affect the entire braking system and can lead to serious safety problems," said Dave Schultz, Marketing Manager of the Valve Division of Bendix Commercial Vehicle Systems, an Elyria, OH, brake manufacturer. "According to internal testing, [using] a look-alike part [in braking systems] can increase stopping distance 15 to 30 percent," he explained.

Sales of counterfeit and knock-off parts for use on heavy-duty trucks are posing safety risks to fleets, with the largest problem being brake components. Any variance in any one component in the whole system can affect the entire braking system and can lead to serious safety problems.

When Bendix compared one of its brake valves with a knock-off valve, the knock-off's wall was 56 percent thinner, making it more susceptible to cracking or even to rupturing completely, the company said. Look-alike parts such as valves, brake drums and shoes, O-rings, pistons, seals and bolts can contribute to a range of problems. "There are different standards for each component, so if you use a genuine part, you can be sure it is within those standards. If you are using a non-genuine part, who knows?" Schultz remarked.

Who Is Producing Bogus Goods?

In a recent *Detroit News* article, it was reported that 80 percent of bogus auto parts are produced in China. Neal Zipser, MEMA VP, explained that "China is by far the biggest problem in the United States when it comes to counterfeit parts. When people buy a fake Rolex™ or Gucci® handbag, they know they aren't getting the real thing. But when people buy oil filters or brake pads, they don't want to take a chance on buying a knock-off." The *Detroit News* reported that "General Motors [GM] Corp. has seized more than $250 million in counterfeit auto parts in the past two decades, shutting down hundreds of counterfeiting operations."

Last September, Dubai, United Arab Emirates, destroyed 500,000 counterfeit GM spark plugs that had been manufactured in China. As many as 20 percent of spare parts in the Middle East are counterfeit. A study in India suggested that 37 percent of aftermarket parts in India were counterfeit. "We've put quite a few resources behind fighting the problem globally," GM spokesman Tom Henderson explained. "We work aggressively with law enforcement and stop counterfeiters where we find them."

As bogus parts flood the U.S. market, American auto parts manufacturers scramble to regain lost sales. In a 2005 report, a MEMA spokesperson stated that China's auto parts exports reached $8.9 billion, an increase of 22.8 percent from 2004. The figure accounts for 82 percent of China's total volume of automobile products.

Recently, President George W. Bush signed the *Stop Counterfeiting in Manufactured Goods Act*, the chief sponsor of whom is U.S. Rep. Joe Knollenberg, Bloomfield Township, MI. The bill stiffened penalties for violating trademark laws by requiring the destruction of equipment, tooling and other materials used to make counterfeit goods, and makes it illegal to traffic in counterfeit trademarks such as labels, patches and medallions. Previously, the law only forbade trafficking in trademarks when the labels are physically attached to goods. Likewise, U.S. Rep. Mike Rogers from Michigan's 8th Congressional District has made the issue a priority, and displays pictures of counterfeit oil filters and spark plug wire sets on his congressional Web site.

What Are the Costs?

The amount of dangerous bogus automotive parts purchased by DOD and the Army is unknown. Statistical data is not available because bogus parts slip into the system unknowingly, so they cannot be tracked until discovered because of a safety issue or poor performance. However, the U.S. Department of Commerce estimates that bogus products resulted in a $200 billion to $250 billion loss to American business. With $3 billion worth of bogus auto parts being sold in the United States alone, and $12 billion worldwide, it is estimated that 210,000 more American auto workers could be employed if it were not for bogus parts production overseas.

The *Stop Counterfeiting in Manufactured Goods Act* requires the destruction of all equipment used to produce counterfeit goods. (U.S. Army photo.)

In a comprehensive report titled "A Deadly Faith in Fakes: Trademark Theft and Global Trade in Counterfeit Automotive Components," Dr. Majid Yar, School of Social Policy, Sociology and Social Research, University of Kent at Canterbury, England, contends that in France, the Peugeot-Citrogen group estimated that 50 percent of the spare and replacement parts purchased for its automobiles are counterfeit, amounting to lost revenues in excess of 13 billion francs per annum. In the Gulf States, the counterfeit car parts industry is estimated to be worth some $150 million to $200 million annually. Claims estimating the scale of the trade are supported by customs reports and bogus product seizures. In 2000, Chinese authorities, following complaints from foreign automobile manufacturers, undertook a series of raids on 248 markets, resulting in confiscation of 30,000 counterfeit auto parts bearing brand names such as Toyota®, Nissan® and Mercedes Benz®, with an estimated value of $1.4 million. "In 2003, U.S. parts manufacturer Federal-Mogul collaborated with Chinese authorities in investigating the manufacture of counterfeit Champion™ brand spark plugs, resulting in the seizure of more than 600,000 parts, along with counterfeit packaging," Yar explained.

Have Any Injuries Been Caused by Bogus Products?

With approximately one billion motor vehicles currently in use worldwide, and another half billion predicted before 2050, many documented vehicle accidents have been caused by counterfeit parts. While bogus spark plugs and other engine parts have merely caused aggravating failures and breakdowns, poorly constructed brake and suspension parts have resulted in many vehicular deaths.

"According to the World Health Organization [WHO], an estimated 1.2 million people are killed annually in road crashes, and up to 50 million are injured," Yar cited in his study. However, assessing the proportion of these fatalities and injuries that are a consequence of counterfeit components is a difficult task. Why? There is no established practice of forensic and technical examination of vehicles involved in serious accidents, through which the role of counterfeit components could be established. This stands in contrast to air accident investigations and nuclear power plant safety incidents, where civil aviation and nuclear regulatory authorities are required to investigate all serious incidents.

Unfortunately, the number of accidents and injuries with respect to automobiles remains largely unknown. However, one former motor industry insider reports that automobile manufacturers, on the basis of their own intelligence and investigation, attribute some 3 percent of fatal accidents to defective components. If this figure is accurate, then following the WHO statistics, defective components are responsible for 36,000 deaths and 1.5 million injuries every year in the United States alone.

Other studies have documented that organized crime and terrorist groups are being financed through the illicit sales of counterfeit items. The U.S. Customs Service has issued press releases addressing these concerns. In a *U.S. Customs Today* magazine article,

Kathleen Millar stated, "Today, in a post-9/11 environment, agencies like Customs and Interpol understand that the international underworld is a breeding ground for terrorism... Behind the army of hijackers, suicide bombers and terrorist gunmen stands an even greater number of 'company men' — criminal entrepreneurs and financiers in suits who understand the best way to bankroll Armageddon is through the capitalist system. They run what look like legitimate businesses, travel to 'business meetings' in Frankfurt, Amsterdam and New York, and pay fictional 'employees' with money that feeds and houses terrorist cells. They invest, pay taxes, give to charity and fly like trapeze artists between one international venture and another. The endgame, however, is not to buy a bigger house or send the kids to an Ivy League school — it's to blow up a building, to hijack a jet, to unleash a plague and to kill thousands of innocent civilians."

Visually identifying a bogus item can be difficult. Counterfeiters efficiently and effectively reproduce the appearance of items to mask important differences from authentic products. Check the packaging. If it appears to be inferior or doesn't have the correct colors, or the manufacturer's icon or logo is absent, pass on the purchase.

How Can We Avoid Purchasing Bogus Products?

The *Federal Acquisition Regulation's Part 9, Contractor Qualifications*, specifically addresses all aspects of purchasing goods from contractors. *Part 9* includes prospective contractor standards and procedures, preaward surveys, qualification requirements, first article testing, debarment, suspension and ineligibility. Interestingly, *Part 9.407-2(a)(5), "Causes for Suspension*," states: "Intentionally affixing a label bearing a 'Made in America' inscription (or any inscription having the same meaning) to a product sold in or shipped to the United States or its outlying areas, when the product was not made in the United States" is a recognized serious violation warranting sanctions against the violators.

Visually identifying a bogus item can be difficult. Counterfeiters efficiently and effectively reproduce the appearance of items to mask important differences from authentic products. Check the packaging. If it appears to be inferior or doesn't have the correct colors, or the manufacturer's icon or logo is absent, pass on the purchase. Heft the weight of the item. If you know the item should weigh more, go with your instincts. Diligence is required in recognizing artificially low prices. If the item is highly reduced and found in venues such as a flea market or discount store, the item may well be counterfeit. The best protection is to purchase items from known businesses and authorized dealers in the products desired. Ask the vendor where the products were purchased and require proof of origin. Find out if the vendor belongs to reputable trade organizations.

What Else Can I Do?

Don't just rely on recent legislation. While it's a positive first step, the government must continue to be proactive in efforts to eliminate the problem. Purchasing agents can conscientiously check vendors' credentials and only work with reputable companies and suppliers. Mechanics should exercise vigilance when installing parts. Examine them closely. Look for any variations in size or texture from accustomed parts. When installing a part, make sure it fits the way it is intended. Tolerances on counterfeit parts may not be as accurate as on genuine parts. All purchases at significant discounts should be red flagged. The adage, "If it sounds too good to be true, it probably is," should be heeded with regard to bogus parts. If you suspect a part is counterfeit, contact the manufacturer and make the company aware of your concerns. Manufacturers have a vested interest in the flow of bogus products and will appreciate your efforts on their behalf.

The impact of counterfeit and knock-off items affects America in countless forms. In the area of automotive parts alone, there is lost employment opportunities for approximately 210,000 workers and $3 billion in lost sales to legitimate manufacturers. Less obvious losses include intellectual property in the reverse engineering of patented and protected items and the loss of confidence in American automotive manufacturers when counterfeit parts do not perform as designed. From government agents to individual consumers, taking responsibility for informed vigilance is critical.

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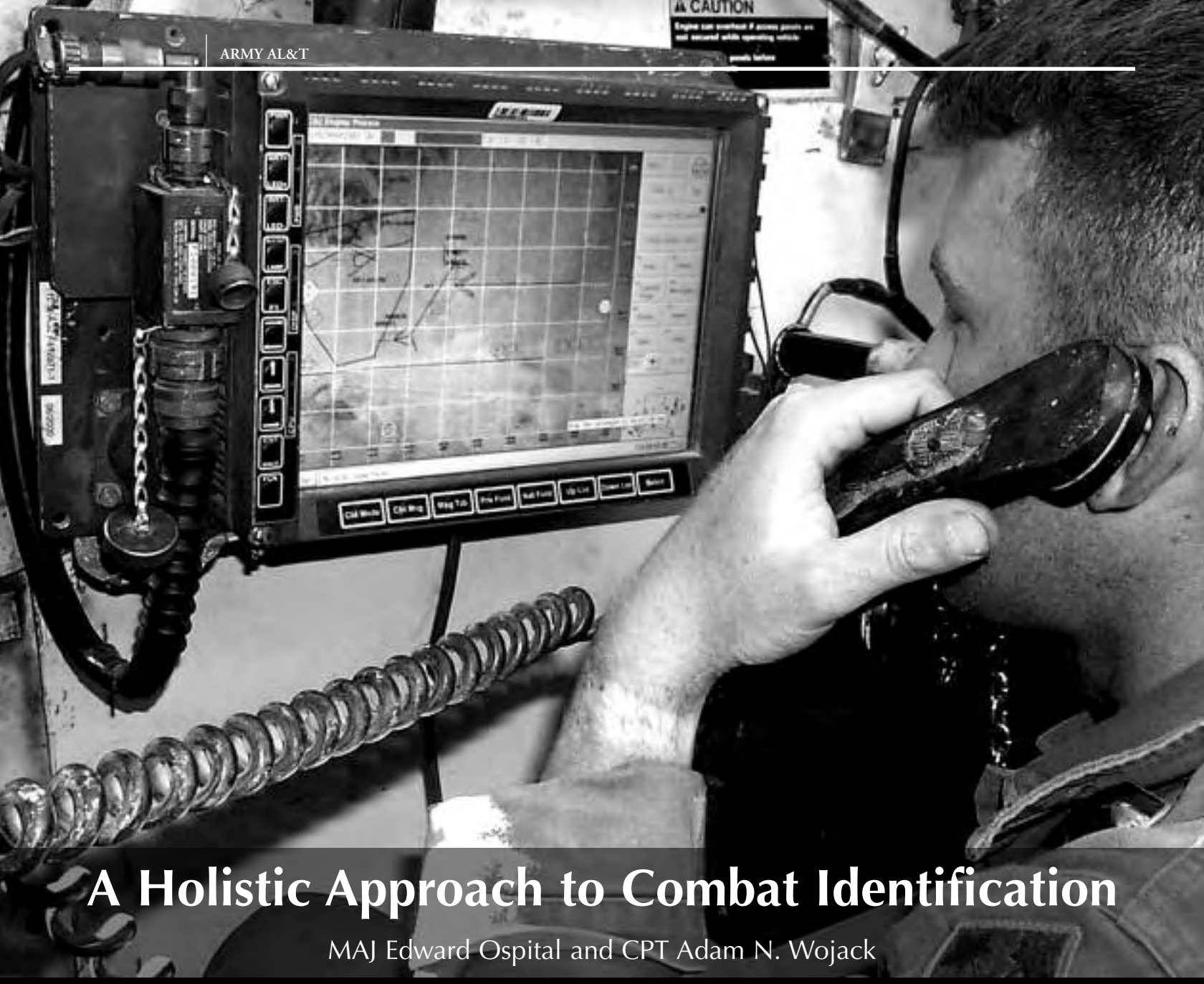

A Holistic Approach to Combat Identification

MAJ Edward Ospital and CPT Adam N. Wojack

Combat identification (CID) is the process of attaining an accurate characterization of detected objects throughout the operational environment sufficient to support engagement decisions. The detected object is correctly identified by proficiently applying a family of situational awareness (SA) and target identification (TI) capabilities. Approved rules of engagement (ROE) and tactics, techniques and procedures (TTPs) are then used to support combatant shoot/don't shoot decisions for detected objects in their operational environment.

A 4th Infantry Division Soldier uses FBCB2/BFT during a predeployment training exercise to maintain friendly force and non-combatant SA. (U.S. Army photo by David Brackman, Program Executive Office, Command, Control and Communications Tactical.)

CID's purpose is to improve unit combat effectiveness and minimize collateral damage while simultaneously preventing fratricide. CID is the process that human shooters and sensors go through to identify battlefield entities prior to making shoot/don't shoot decisions. To perform CID, warfighters use all available means at their disposal to sort battlefield entities prior to applying combat power. The process enables the warfighter to maximize the effects of lethal fires against the enemy, while at the same time reducing or eliminating fires effects on friendly or neutral personnel, equipment or facilities. CID is a complex series of networked systems, procedures and doctrine — when it is effective, it is simple and transparent to warfighters, but when it's rendered ineffective, the results can be disastrous.

To better explain CID, you must first understand its basic formula: SA + TI = CID and increased Combat Effectiveness (CE). CE, as related to CID, is the ability of a friendly unit to rapidly and accurately sort and characterize detected objects within the operational environment and then apply the necessary combat power and fires effects against an enemy force or target with the least risk of death, injury or damage to friendly and neutral forces, entities, facilities and equipment.

Battle Command and SA

SA consists of reported friendly (blue), enemy (red), neutral and unknown entities normally displayed on a computer screen or manually posted to a map. For CID purposes, we will only describe SA as it relates to automated and reported information using available battle command/SA systems. SA has the following attributes:

- Accuracy/timeliness of reporting.
- Density of blue position, location and information generating systems.
- Interoperability of friendly force battle command/SA systems in the affected operational environment.

SA is sent to and displayed in two places — the common operational picture located in command posts for battle command purposes, and the individual vehicle, aircraft and Soldier platform battle command/SA display devices for both command and control and CID. The latter directly supports shoot/don't shoot decision making by shooters in close proximity to enemy forces on the battlefield. When coalition and U.S. forces in the operational environment lose SA of where their subordinate elements are in relation to each other, the situation can deteriorate. Two friendly forces can converge, especially if they do not share the same communications network or graphic control measures.

> TI is the process of determining the affiliation (blue, red or neutral) of detected objects at the point of engagement in one's immediate operational environment.

TI Capabilities

TI is the process of determining the affiliation (blue, red or neutral) of detected objects at the point of engagement in one's immediate operational environment. This is normally conducted within line-of-sight visual range and its purpose is to apply combat power or fires effects against enemy forces or targets, while preventing fratricide and minimizing collateral damage. There are two categories of TI — cooperative target identification (CTI) and non-cooperative target identification (NCTI).

NCTI systems exploit the physical characteristics of entities in an operational environment and use optics that include FLIR, TWS and ENVG. Here, an Aviation Warfare Systems Operator scans for surface contacts using a FLIR system aboard the USS Princeton, a Guided Missile Cruiser stationed in the Persian Gulf and providing mission support to ground troops during *Operation Iraqi Freedom*. (U.S. Navy photo by PH2 Michael J. Pusnik Jr., Fleet Combat Camera, Pacific.)

CTI includes any method or materiel solution that allows a human shooter or sensor to "interrogate or question" a potential target, and allows the same potential target to "respond or answer" the interrogator in a timely manner. Air-to-air and ground-to-air (G-A) systems use identification, friend or foe (IFF) as a means to sort entities in their airspace. Ground-to-ground (G-G) systems, in the near future, may use Battlefield Target Identification Device (BTID) and Radio-Based Combat Identification (RBCI) CTI systems. IFF is a misnomer because none of the CTI technologies identify foe, they only identify friend or unknown entities.

NCTI involves methods or systems that exploit the physical characteristics of entities in the operational environment to help identify and determine affiliation. NCTI does not require a cooperative response or answer from the target. NCTI systems include optics, such as forward-looking infrared (FLIR), Thermal Weapon Sights (TWS) Enhanced Night Vision Goggles (ENVG), Synthetic Aperture

Enhanced FBCB2, 2nd and 3rd generation FLIR and JCIMS capabilities are enabling quicker response time and accuracy for sensor-to-shooter weapon system engagements. Here, SFC Kenneth R. Dawson with Charlie Co., 2nd Battalion, 3rd Infantry Regiment, checks friendly force positioning on his FBCB2 during a live-fire exercise. (U.S. Army photo by CPT Tim Beninato, 28th Public Affairs Detachment Commander.)

Radar/Assisted Target Recognition; and vehicle and personnel markings, such as Joint Combat Identification Marking Systems (JCIMS), which include CID Panels, Thermal ID Panels (TIPs), Phoenix Beacons (IR lights) and Dismounted-CID Marking Systems. JCIMS are used in conjunction with FLIR, TWS and ENVG and assist in friendly identification at the point of engagement.

Better CID Capabilities

The CTI technology's ability to service multiple domains has gained importance since *Operation Desert Storm*. Fratricide studies conducted in the Army Marine Corps Board (AMCB) G-G Study have illustrated a 25 percent increase in "platform-to-Soldier" incidents and a 10 percent increase in "Soldier-to-Soldier" incidents during recent major combat operations in support of *Operation Iraqi Freedom* (*OIF*). The two CTI technologies recently approved for acquisition strategy do not address or fill this CID gap. BTID services only the "platform-to-platform" domain (M1, M2/M3, Stryker and Long-Range Advance Scout Surveillance System), whereas RBCI addresses the G-G and air-to-ground (A-G) domains from an indirect and close air support perspective.

None of these technologies directly address the platform-to-Soldier and Soldier-to-Soldier domains. Regardless of what CTI technology is used, the combatant must still make the final determination whether to engage the unknown entity based on blue, red or neutral status. Once determined, the combatant must incorporate the ROE criteria and restrictions into his "shoot/don't shoot" decision. Positive visual identification of the entity to determine if it is a legitimate military target must also be ascertained. No technology exists today that identifies friend or foe. CTI technologies only identify friend or unknown. A CTI technology should not be used as the sole criteria for engagement because of its mechanical/electronic nature or because enemy action, such as electronic countermeasures, might render the CTI technology inoperative or ineffective. In addition, partial CTI technology fielding, either through design or system failure, has been proven to increase fratricide — not decrease it — as crews rely on the technology as the sole criteria to engage or not engage an unknown entity.

Regardless of what CTI technology is used, the combatant must still make the final determination whether to engage the unknown entity based on blue, red or neutral status. Once determined, the combatant must incorporate the ROE criteria and restrictions into his "shoot/don't shoot" decision.

A Holistic CID Solution

Progress has been made since the onset of *Operation Enduring Freedom* and *OIF*. Per the AMCB G-G CID Study recommendation, the Training, Doctrine and Combat Development Division at Fort Knox, KY, assisted by the U.S. Army Training and Doctrine Command (TRADOC) Capability Manager Platform Battle Command (TCM PBC)/CID and the TRADOC Centers, selected a vendor in March 2006 to address issues associated with CID's incorporation into Army doctrine. Comprehensive CID doctrine will be developed for inclusion into *Field Manual 3.90, Tactics*, that explains how to increase combat effectiveness in relation to CID requirements, including SA, TI, TTPs and ROE. The CID input will address the G-G (platform-to-platform, platform-to-Soldier, Soldier-to-Soldier, Soldier-to-platform), A-G (rotary-wing aircraft platform-to-Soldier and unmanned aircraft systems platform-to-Soldier) and G-A mission areas.

Gunnery doctrine will be updated to incorporate CID requirements, including insertion of friendly, allied/coalition and neutral targets, and refinement of direct-fire target engagement processes. This doctrine shall be for the entire Heavy Brigade Combat Team (BCT), including armor, infantry, mortar gunnery, engineers and combined air support. It will be used as a template for the Infantry BCT and Stryker BCT manuals. Expected completion of doctrinal effort is September 2007. This effort will strengthen existing TTPs and ROE and the Engage/Do Not Engage "link" of the SA and TI chain.

Improvements in the current family of systems — Force XXI Battle Command Brigade and Below (FBCB2), Joint Battle Command-Platform,

U.S. Marine Corps (USMC) CPL Kevin Hoxworth, 7th Marines, operates a Precision Lightweight Global Positioning System Receiver for his BFT system during combat support operations from his base at Camp Ripper, Kuwait. (USMC photo by GySGT Eric S. Hansen, 1st Marine Division Combat Camera.)

optics, 2nd and 3rd generation FLIR and JCIMS — enable the "sensor-to-shooter kill-chain" to be shortened, and can be enhanced through the acquisition of a CTI that services all of the G-G domains. Future CTI should also address the A-G mission area, such as RBCI. Future CTI systems that enter into an acquisition strategy should service as many domains as possible to fully address the Current Forces' CID gaps.

Fratricide incidents are still occurring during stability operations in Iraq and are being committed by platforms other than armored. A system like BTID would have no positive impact on these incidents. Acquiring a CTI technology that services all domains will, ultimately, strengthen the family of systems link in the CID equation. Until that occurs and the doctrinal and facility gap mitigation measures are in place, fratricides in full-spectrum operations will likely continue to occur, albeit at reduced rates.

The fog of war and human factors make total elimination of fratricide impossible. Marksmanship and the ability to conduct crew battle drills under stressful, near-combat conditions dictate that training will remain the ultimate force multiplier in maintaining lethal crews and Soldiers and protecting the force from fratricide. Contemporary urban operating environments drive the need for target discrimination skill sets for all Soldiers. This standard of training, grounded in solid doctrinal principles, will hone the warfighter's judgment at the point of engagement. Future Combat Systems and doctrinal improvements, coupled with improved training devices, training aid device simulators and simulations, and realistic training/maneuver ranges will enable Soldiers to make better engage/do not engage decisions. Combatants must be able to ask themselves the following questions before they pull the trigger:

- Am I or my comrades in mortal danger?
- What is the worst thing that can happen if I pull the trigger?
- Am I positive that my target is hostile?

There is no "silver-bullet" solution to end all fratricide incidents. The emphasis should be placed upon improving density of SA and TI systems in the Army inventory, preparing the combatant for full-spectrum operations and acquiring a CTI technology to service all domains in the G-G mission area. This can only be accomplished by looking at CID through a holistic lens and by strengthening every link of the CID chain. It is imperative that we do everything possible to prevent potential fratricide incidents from occurring in the future.

SSG Shawn Smith, Bravo Co., 2nd Battalion, 35th Infantry Regiment, 25th Infantry Division, monitors his BFT during a patrol in Kirkuk, Iraq, Nov. 4, 2006. (U.S. Air Force photo by SSGT Samuel Bendet, 30th SCS.)

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Rock Island Arsenal JMTC Brings Gold Shingo Prize to the Arsenal

Gale L. Smith

On Sept. 7, 2006, the Rock Island, IL, Arsenal Joint Manufacturing and Technology Center (RIA JMTC) made history by becoming the first Army organization ever to receive the Shingo Prize for Excellence in Manufacturing (Public Sector Award) at the Gold Level. *BusinessWeek* has referred to the award as the "Nobel Prize of Manufacturing," because it establishes a standard for world-class excellence.

Soldiers from the 3rd Armored Cavalry Regiment provide security from their M1A1 Abrams main battle tank along a main supply route into Tal Afar, Iraq. The Forward Repair System produced by RIA JMTC is what keeps these tanks and other heavy equipment operating despite the harsh environment and operating conditions these weapons platforms are subjected to. (Photo by SSGT Jacob N. Bailey, U.S. Air Force, 1st Combat Camera Squadron.)

Then: The old process to grind and weld the FRS Flatrack was performed manually on saw horses and the operator needed to get in the right position. The operator was not able to move the weldment to the right height or ergonomic position. (Photo courtesy of RIA JMTC Lean Core Team.)

Now: The new grinding and welding process enables operators to use manipulators to easily rotate the weldment to the weld position and proper ergonomic height. (Photo courtesy of RIA JMTC Lean Core Team.)

At a ceremony in Las Vegas, NV, during the Second Annual Shingo Prize Public Sector Conference and Awards Ceremony, RIA JMTC Commander COL J.B. Elliott accepted the award for the RIA JMTC workforce and dedicated it to them. "I am honored to accept this on behalf of our workforce and their extraordinary efforts. Many of our workers have been working seven days a week — sacrificing weekends, holidays and vacations — to ensure mission success," he said. "Due to their efforts, we have dramatically improved our performance in providing our warfighters with the highest quality equipment, on or ahead of schedule and at a reduced cost."

Although RIA JMTC started its Lean journey in 2002, it took a major leap forward in early 2006 by restructuring and creating integrated product teams to manage its products horizontally across the organization — a significant change from its traditional organizational structure. This resulted in the creation of the Focused Factory for the Forward Repair System (FRS) and led to dramatic improvements in its production that garnered them the Shingo prize.

FRS is a highly mobile, forward maintenance self-contained repair system that contains a generator, air compressor, 7-ton crane, welding and cutting equipment and more than 600 hand tools. Soldiers use FRS to repair Abrams tanks and other equipment in the field near the front lines. RIA JMTC is the sole producer of FRS. U.S. Army Materiel Command (AMC) Commanding General GEN Benjamin S. Griffin has said that "Nothing fielded has impacted Soldier morale more significantly than FRS."

By leveraging Lean Six Sigma, RIA JMTC increased its FRS production significantly from 4 to 29 per month, established one-piece flow, shortened travel distance by 81 percent, reduced manufacturing lead time by 40 percent and resolved 36 safety/ergonomic issues.

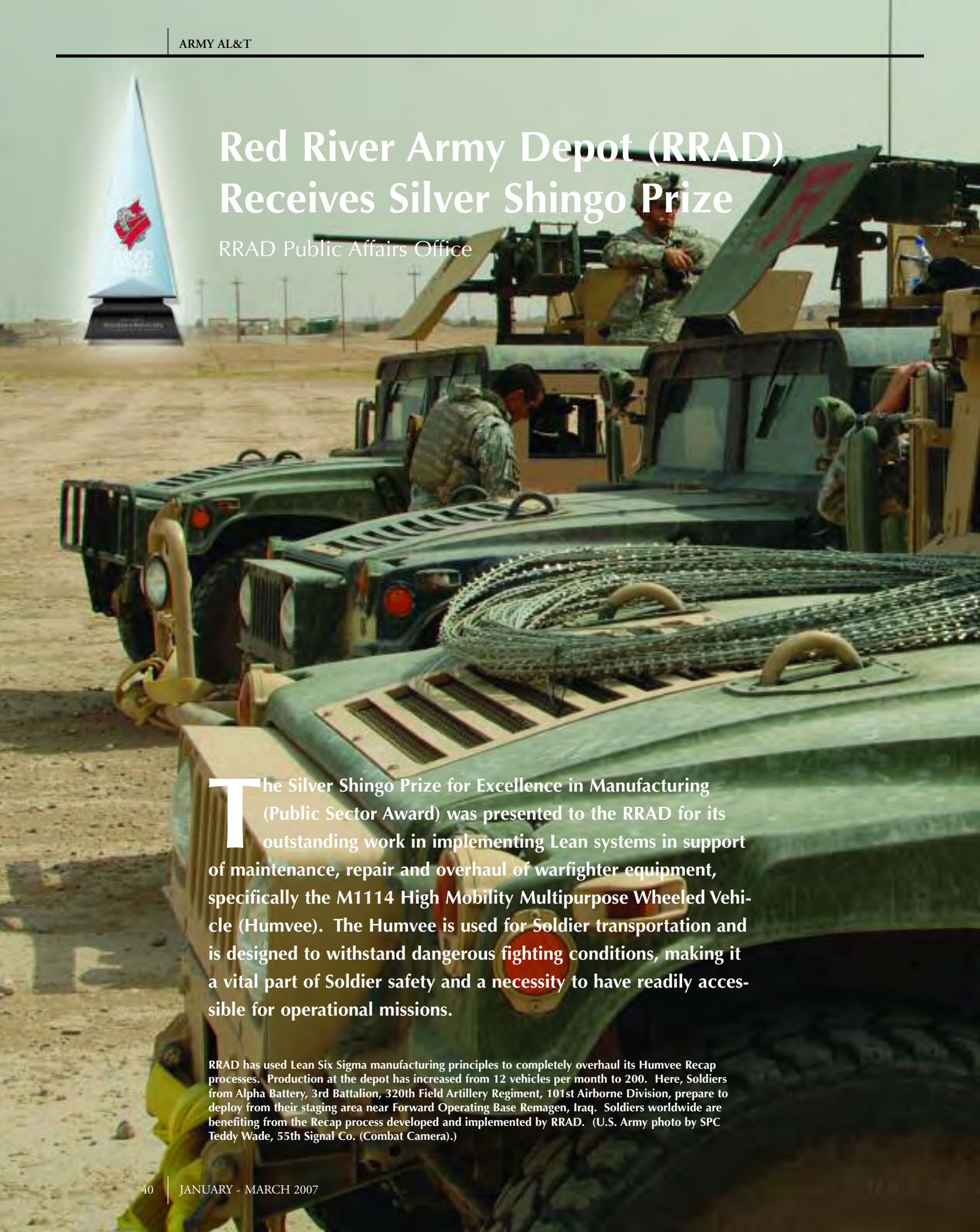
In a ceremony at the RIA JMTC manufacturing complex on Sept. 22, 2006, Griffin, Elliott and Shingo Prize Executive Director Dr. Ross Robson presented the award to the RIA JMTC workforce. Griffin said, "I will use you as an example — inside and outside of AMC — as an example of excellence. You're an elite group! Thank you for what you do!" Robson was equally congratulatory. "This is a celebration of an outstanding accomplishment — the first Gold Level Shingo Prize in the Army!"

In addition to the RIA JMTC, Elliott thanked some specific individuals including Science and Engineering Director David Bailey, who has been the Lead Champion for the last three years; Simpler Consulting Inc. senseis Tommy Thompson and Jim Little; Garrison Manager Alan Wilson; and the garrison support staff. Because of the award's prestige, the Shingo Prize further confirms RIA JMTC's world-class manufacturing status.

Then: The old process involved loading each individual tool from the rack/shelf into each drawer separately. The tools were not prepacked from the tool suppliers as they are today. (Photo courtesy of RIA JMTC Lean Core Team.)

Now: The tool loads are now preloaded as kits from the vendor. Workers load them directly into the drawers then load the drawers into the cabinet. (Photo courtesy of RIA JMTC Lean Core Team.)

GALE L. SMITH is the Public Affairs Officer for the U.S. Army Garrison RIA and supports RIA JMTC. She holds a B.A. in English from Indiana University of Pennsylvania and is working on a master's degree in public relations from the University of Northern Iowa. She is a Defense Information School Public Affairs Officer Qualification Course graduate and a Columbia University Teacher's College Organization Development Program graduate.



Red River Army Depot (RRAD) Receives Silver Shingo Prize

RRAD Public Affairs Office

The Silver Shingo Prize for Excellence in Manufacturing (Public Sector Award) was presented to the RRAD for its outstanding work in implementing Lean systems in support of maintenance, repair and overhaul of warfighter equipment, specifically the M1114 High Mobility Multipurpose Wheeled Vehicle (Humvee). The Humvee is used for Soldier transportation and is designed to withstand dangerous fighting conditions, making it a vital part of Soldier safety and a necessity to have readily accessible for operational missions.

RRAD has used Lean Six Sigma manufacturing principles to completely overhaul its Humvee Recap processes. Production at the depot has increased from 12 vehicles per month to 200. Here, Soldiers from Alpha Battery, 3rd Battalion, 320th Field Artillery Regiment, 101st Airborne Division, prepare to deploy from their staging area near Forward Operating Base Remagen, Iraq. Soldiers worldwide are benefiting from the Recap process developed and implemented by RRAD. (U.S. Army photo by SPC Teddy Wade, 55th Signal Co. (Combat Camera).)

RRAD workers on the Humvee production line use Lean Six Sigma practices daily. The RRAD team has made vast improvements in productivity, time management and cost in the Recap process. (U.S. Army photo by Pam Barrett.)

RRAD recognizes that its hard work and dedication to facilitating Lean principles has significantly impacted Soldier experiences in theater. "We are very proud to be recognized for our continued efforts to provide the warfighter with the best possible equipment available," remarked COL Douglas J. Evans, RRAD Commander. "The folks at RRAD have taken the lead on the Lean initiative and the warfighter is reaping the benefits every day."

The implementation of Lean practices began in 2004 when RRAD identified that the Humvee Recap process required significant improvement. RRAD set out to accomplish this by increasing productivity, while simultaneously reducing time and monetary costs. In July 2004, Depot Commander COL Michael Cervone commissioned a Lean team to begin developmental work on a timeline of smaller goals that would ultimately lead to vast improvements in Humvee Recapitalization. The first of these objectives was to increase output from 12 vehicles per month to 200. Through a series of week-long, rapid-improvement events, RRAD reached that goal in December 2004, six months ahead of schedule. The team then raised the new production goal to 18 vehicles per 10-hour shift, and once this was achieved, kept amplifying that goal to new heights. The RRAD team currently produces, on average, 24 vehicles per day.

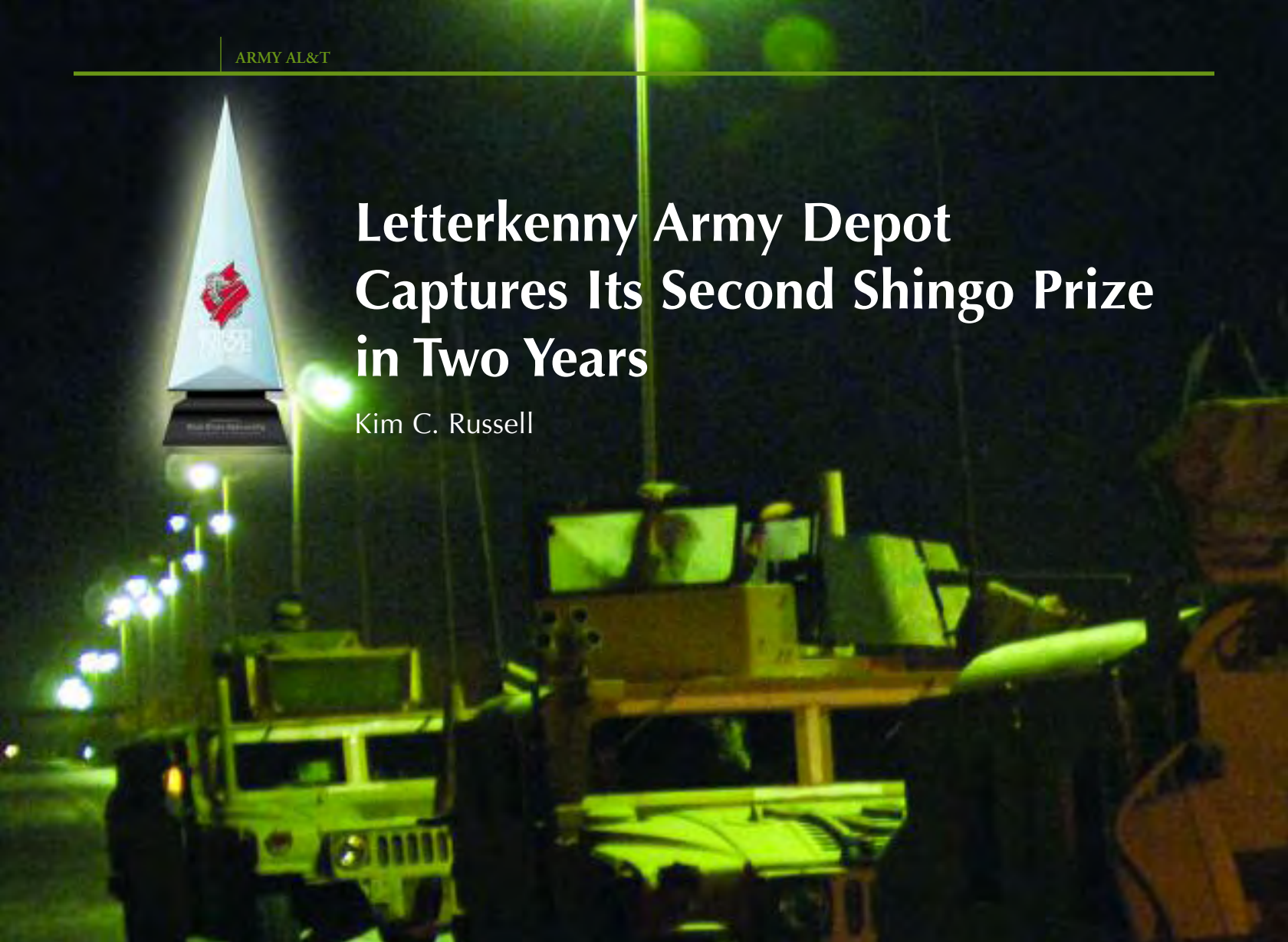
A Shingo audit team visited RRAD in March 2006 to view the depot's processes in action. The audit team members spoke with RRAD personnel and viewed the Humvee production line, noting the immense improvements and implementation of Lean practices. Dr. Ross Robson, Shingo Prize Executive Director, commended RRAD for its work when he presented the award: "You have joined a very distinguished group of Shingo Prize Public Sector recipients. We are proud to add your facility to the elite group of recipients."

RRAD has gone above and beyond its initial goals for production, and statistics authenticate its selection for this year's Shingo Prize. The implementation of Lean processes has enabled RRAD to triple its workload, increasing output from 3 vehicles per week to 120, a 75 percent reduction in time/cost. In addition, the depot has decreased its recordable on-the-job accidents by 88 percent and raised its positive customer service rate to an impressive 99.7 percent. Additionally, RRAD was forecasting a cost avoidance of more than $100 million by the end of 2006.

The RRAD's Humvee work directly benefits the warfighter. Soldiers receive better repaired Humvees faster than ever before, enabling them to execute their missions safely and confidently. GEN Benjamin S. Griffin, Army Materiel Command (AMC) Commanding General, reflected, "I am very proud of our folks in AMC [RRAD reports through the TACOM Life Cycle Management Command] whose extraordinary efforts are providing our warfighters with the highest quality equipment, ahead of schedule and at a reduced cost. The Shingo Award recognizes this extraordinary performance by our depot workforce — for it is the workers on the shop floor who are using Lean and Six Sigma techniques to enable us to better meet the needs of our men and women serving on point for our Nation around the world fighting the global war on terrorism."

Article submitted by the RRAD Public Affairs Office.

COL Douglas J. Evans, RRAD Commander, congratulates the Humvee workforce on its continuous hard work. The RRAD team gathers for a celebratory photo after being recognized as a Silver Shingo Prize for Excellence in Manufacturing (Public Sector Award) recipient. (U.S. Army photo by Pam Barrett.)



Letterkenny Army Depot Captures Its Second Shingo Prize in Two Years

Kim C. Russell

Winning the Shingo prize for the second consecutive year validates the success of Letterkenny Army Depot (LEAD) and its Lean journey! In 2005, LEAD was the first Army depot to win the distinguished Shingo Prize by using Lean principles in its Patriot Launcher Rebuild Program. LEAD built upon its previous success by winning the 2006 Silver Shingo Prize for Excellence in Manufacturing (Public Sector Award) for its Tactical Wheeled Vehicle Humvee Recapitalization program.

LEAD's successful application of Lean Six Sigma has saved depot customers more than $21 million over the past 3 years. More importantly, LEAD returns the critical equipment, weapons systems and refurbished assemblies in near new condition. LEAD's current initiative, M1114 Humvee Recap, has garnered the depot its second Shingo Prize for Excellence in Manufacturing (Public Sector Award) in two years. (U.S. Army photo.)

Located in South Central Pennsylvania, LEAD entered the Lean path to transformation in 2002. The depot's original focus was learning Lean processes to improve productivity and reduce costs. Depot management and its employees were soon actively engaged. They participated in rapid improvement events that offered systematic approaches to the depot's Lean transformation. Emphasis was placed on quality, cost and timely delivery. The workforce's focus then became how to best serve its end users — our warfighters. After launching Lean transformation, Letterkenny also assimilated Six Sigma methodologies. Employees were trained in Lean Six Sigma (LSS) principles and tools. The customer remained in sight and the continually improved Lean processes

and initiatives earned Letterkenny the reputation as a "capabilities-based depot."

Letterkenny has become very adept at effectively weaving LSS through the Humvee Recap program. A primary tool of choice has been value stream analysis. LSS has been thoroughly integrated into the organizational culture at Letterkenny. To its credit, LEAD has embraced LSS concepts, thereby improving its processes and markedly increasing its capacities by using the data and tools from this proven manufacturing system.

The realities of war and the constantly changing support requirements for Soldiers in the field were clearly evident for the overextended fleet of Army Humvees. In January 2005, the original Recap goal was five vehicles per day. Throughput surged to 19 Humvees per day to supplement customer demand by July 2005. Today, LSS is helping LEAD sustain 15 Humvees per day.

Humvee Recap Innovations

Originally, LEAD used a bay-type process for its Humvee line setup, where the body and chassis were combined. This process was improved and converted to a flow process by separating the body from the frame into different functions or processes. As a result of this reengineered process, by July 2005, Humvee flow surged to 19 vehicles per day. Likewise, LEAD instituted a new parts ordering process defined as a kanban system that uses gravity feed racks for hardware and bakers racks for larger parts. Through LSS and by revamping the process flow, Letterkenny reduced the overall Humvee Recap hours from 274 to 174 per vehicle, increased throughput from 1 to 19 and reduced internal Humvee defects by 80 percent. Through a newly improvised quality management system, charts identifying defects, parts shortages, trends and daily "heroes and zeros" were formulated and posted in each work cell to further spur productivity and document critical lessons learned.

Through LSS and by revamping the process flow, Letterkenny reduced the overall Humvee Recap hours from 274 to 174 per vehicle, increased throughput from 1 to 19 and reduced internal Humvee defects by 80 percent.

Lean is about achieving results that are tangible to customers. Letterkenny changed the paradigm and developed

Twenty-seven "free" Humvees circle the Letterkenny Army Depot sign. These vehicles exemplify the return on investment to the Army and LEAD's customers. (LEAD photo by Don Bitner).

Letterkenny employees easily transfer Humvees into the shop for overhaul after reengineering the depot's flow process. (LEAD photo by Don Bitner).

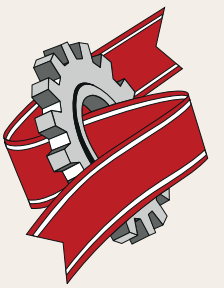
a cutting-edge innovative process that allowed tangible results to yield tangible savings. Costs are captured and savings are presented to the customer in a ceremonial check presentation. Letterkenny's successful application of Lean principles has saved the depot's customers more than $21 million over the past 3 years.

Letterkenny's successful application of Lean principles has saved the depot's customers more than $21 million over the past 3 years.

Cognizant of warfighter needs, Letterkenny recently returned 27 "free" Humvees to its customer. At a time when the Nation was marking the 5-year anniversary of Sept. 11, LEAD held a ceremony with 27 Humvees lined in a row. The Humvees glistened and the spectators listened as U.S. Army Aviation and Missile Command Commanding General MG James Pillsbury remarked, "This is a big deal. Nothing in this world is free, but this is. Twenty-seven Humvees and they are free to the warfighters." Letterkenny increased monthly production of the Humvees from 276 to 303 at no additional cost. This will be done for a period of six months and is a direct result of Lean initiatives and Six Sigma applications.

Training and education are a continuing initiative with Lean execution. "Learn by doing" was a great philosophy that worked at the time, but to continue, it became evident that additional specific courses of instruction were needed. Letterkenny staff now has LSS Champions, Green Belts and Black Belts who maintain the program's integrity and viability, and serve as coaches and valuable resources. The entire workforce is empowered to make improvements through Lean events, the Army suggestion program and the value engineering program.

KIM C. RUSSELL is a Public Affairs Specialist for LEAD. She earned a B.A. in business and economics from Wilson College and is pursuing her master's degree in journalism. She has 28 years of federal government experience.



Tobyhanna Earns Bronze Shingo Award for Radar System Efficiency

Anthony J. Ricchiazzi

Tobyhanna Army Depot (TYAD) is the recipient of the 2006 Bronze Shingo Prize for Excellence in Manufacturing (Public Sector Award). The Shingo Prize recognizes private and public sector organizations that have successfully applied Lean Six Sigma (LSS) techniques to improve the quality and efficiency of their operations. TYAD was recognized for achieving a 31 percent reduction in repair cycle time and a 25 percent reduction in repair costs on the Air Force's primary Air Defense Radar System (AN/TPS-75). The AN/TPS-75 is a mobile, tactical radar system capable of providing long-range radar azimuth, range and height information along with identification, friend or foe (IFF) capability for operations and control of tactical aircraft. It provides "real-time" radar airspace pictures and data in support of the battle commander and the Ground Theater Air Control System.

TYAD Electronics Technican Tanya Chervenak installs electronics components into an AN/TPS-75 Mobile Tactical Radar System. TYAD personnel overhaul and test these systems for the U.S. Air Force. Through the implementation of Lean techniques, TYAD has reduced a system overhaul from 335 days to 204 days, a 39 percent reduction. System maintenance cost has been reduced from $1.75 million to $1.11 million, a 36 percent reduction. (U.S. Army photo courtesy of TYAD.)

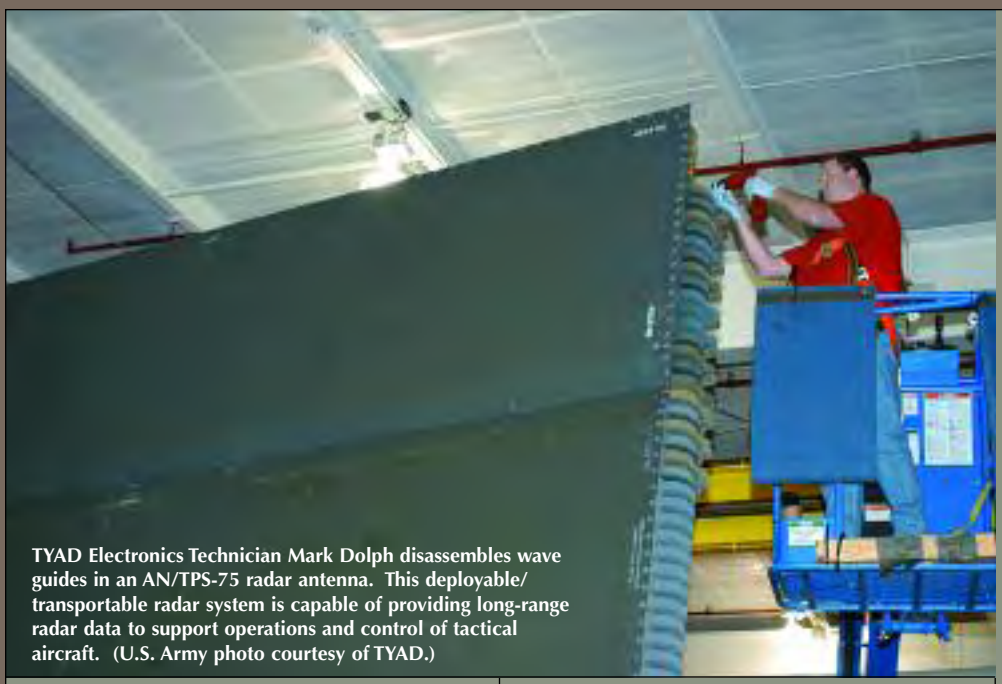
TYAD Electronics Technician Steveland McAllister prepares a planned position indicator for mechanical inspection prior to testing and installation into an AN/TPS-75. The indicator is a visual interface between the system and the technician, allowing 360-degree surveillance of the sky. The radar system is a mobile, tactical radar system capable of providing long-range radar azimuth, range and height information along with IFF capability for operations and control of tactical aircraft. (U.S. Army photo courtesy of TYAD.)

During the awards ceremony on Sept. 26, 2006, the Shingo Prize was presented to TYAD Commander COL Ron Alberto by Robert Katulka, Director of Productivity Improvement and Innovation (PII), the lead organization for the TYAD LSS efforts. Frank Zardecki, Deputy Commander, opened the ceremony by thanking those involved in establishing LSS at TYAD. "We always stress the importance of our mission — TYAD is a very large business enterprise — well over $600 million this year and each of us should never lose our focus in contributing to the efficiency and cost-effectiveness of our operations," he said. "Our application of LSS enhances support [to the warfighter] and today we celebrate one of our greatest LSS successes, recognized not just here at TYAD, but throughout DOD and industry as a result of winning the Shingo Prize. Earlier this month, several members of the depot team were in Las Vegas, NV, to accept the Shingo Prize on behalf of the entire TYAD workforce."

Katulka, with several other TYAD employees, accepted the plaque in a ceremony in Las Vegas on Sept. 7, 2006. It was presented by members of the Shingo Prize organization. "It was my honor to represent TYAD along with three of our counterparts, Frank Frey, Keith Wheeler and Joe DiCindio," said Katulka. "We accepted the award on behalf of the depot, the employees, the management team and COL Alberto."

Katulka noted that the Army was well represented at the Shingo ceremony and that U.S. Army Materiel Command (AMC) leaders attended. "LTG [William] Mortenson, AMC Deputy Commanding General, spoke very highly of TYAD in general and the AN/TPS-75 specifically," he said. "Under Secretary of the Army for Business Transformation Michael Kirby, [also] spoke highly of TYAD."

Katulka said that TYAD employees come to work realizing that their efforts impact service members' lives. "That's why we're here," he continued, "because there's someone out there in the field who needs what we do. We don't do Lean, we don't do Six Sigma, and we don't do all the other things we



TYAD Electronics Technician Mark Dolph disassembles wave guides in an AN/TPS-75 radar antenna. This deployable/ transportable radar system is capable of providing long-range radar data to support operations and control of tactical aircraft. (U.S. Army photo courtesy of TYAD.)

do in terms of continuous improvement and corporate philosophy to say we did them. We do them because we have a vital service to provide. And that's our focus."

After his remarks, Katulka presented the Shingo Prize plaque to Alberto. "I'm proud to accept this prize on behalf of the depot and in your behalf," Alberto said. "You did all the work. Everyone here contributed to this award, you all should feel proud of that, and you should all feel that you had a part in it. I know it's a small plaque, but it means a lot to our commitment to LSS, quality improvement, and, more importantly, to taking care of our Soldiers, Sailors, Airmen and Marines out there on the battlefield. The bottom line is that this is a major milestone and a tremendous achievement and it's not just me who thinks that."

Alberto read a letter of congratulations from Army Chief of Staff GEN Peter J. Schoomaker who noted that he couldn't be more proud of TYAD.

"I noted in the Shingo package that we intend to drive down repair cycle time even further," Alberto said. "So we've already signed up to do an even better job at maintaining this system. Of course, we have to pass that on to other systems across the depot. All of you have done a great job and are doing a great job."

Alberto said that although management can provide all the tools and training, it is the workforce as a whole that makes Lean work. LSS will not succeed without the involvement, commitment and dedication of all employees. "When you tell a co-worker elsewhere on the depot that Lean really works, there is no better endorsement," he said. "By the time I leave here, I'd like to see several of these prizes all over the depot. I'd like to see some in silver, some in gold and maybe even some platinum awards. What you've achieved here shows we can do it and we can repeatedly do it."

Alberto then presented the plaque to Gary Sherman, who was representing the PII Directorate, and Clark Ross, Brian Wesolowski and Keith Wheeler, representing the Intelligence, Surveillance and Reconnaissance Directorate.

Rosemary Revels, the AN/TPS-75 Program Manager, also congratulated depot employees. She noted that the system is not easy to maintain, but that TYAD "stepped up to the plate" and did an outstanding job. "If the past 5 years are any indication of your tenacity, the next 5 to 10 are really going to put you to the test, because that's how long this 25-year-old system

An AN/TPS-75 Mobile Tactical Radar System is tested by TYAD technicians. (U.S. Army photo courtesy of TYAD.)

COL Ron Alberto (center), TYAD Commander, presents the 2006 Bronze Shingo Prize for Excellence in Manufacturing (Public Sector Award) to depot employees. From left: Clark Ross, Gary Sherman, Keith Wheeler and Brian Wesolowski. (U.S. Army photo courtesy of TYAD.)

is going to stay out there in the field," she said. "So, it is up to you and the program office to keep it running because the bottom line is our support for the warfighter. On behalf of LTC [Ronald] Phipps [AN/TPS-75 System Support Manager] and Gary Hebert [AN/TPS-75 Deputy System Support Manager], we send you our heartfelt congratulations. And we know this team works and it will continue to work."

"I believe that winning the Shingo Prize for the Depot is a prestigious accomplishment for everyone," said Keith Wheeler, an electronics mechanic leader who directs work on the AN/TPS-75. He praised the technicians and the AN/TPS-75 mission leaders, saying the Shingo Prize is a prestigious accomplishment not only for them, but the entire depot. "It shows the majority of the employees here achieved that goal, which in turn shows that the depot as a whole can and will take on any challenge it is given because of the dedication of its employees and our workmanship. Give us the work and we will succeed."

Wheeler thanked the PII Directorate for its support, saying the directorate's employees helped AN/TPS-75 employees to establish the necessary goals and direction. "With that we took off with it, certain areas had to be fine tuned and they helped us do so, therefore they were instrumental to the shop and the winning of the Shingo Prize."

The Shingo Prize for Excellence in Manufacturing has been called the Nobel Prize for manufacturing by *BusinessWeek*. TYAD was one of nine government entities that achieved dramatic performance improvements to earn the 2006 Shingo Prize Public Sector Award. "The Shingo Prize recognizes the best in manufacturing," said Shingo Prize Executive Director Dr. Ross Robson. "The 2006 recipients are not only saving American taxpayers' money, but increasing the quality and availability of military weapons that protect Americans at home and Soldiers abroad."

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The Shingo Award recipients are scored in:

- Cost improvement.
- Leadership.
- Empowerment.
- Vision and strategy.
- Innovation and development.
- Partnering practices with suppliers and customers.
- Environmental practices.
- Quality and results.
- Consistent improvement in each area.

TYAD is DOD's largest center for the repair, overhaul and fabrication of a wide variety of electronics systems and components, from tactical field radios to the ground terminals for the defense satellite communications network. Located in the Pocono Mountains of northeastern Pennsylvania, more than 4,400 TYAD employees support all military branches. TYAD is part of the U.S. Army Communications-Electronics Life Cycle Management Command (CELCMC). Headquartered at Fort Monmouth, NJ, CELCMC's mission is to research, develop, acquire, field and sustain communications, command, control, computer, intelligence, electronic warfare and sensors capabilities for the U.S. military.

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Central Iraq Microwave System (CIMS) Supports Theater Communications Missions

Stephen Larsen

It's difficult enough managing telecommunications infrastructure projects under normal circumstances while trying to juggle cost, schedule and performance to provide the best possible system to the Soldiers you service. The challenge gets a lot tougher when you're managing telecommunications infrastructure projects in Iraq and you have to factor in the problems inherent within working in a war zone.

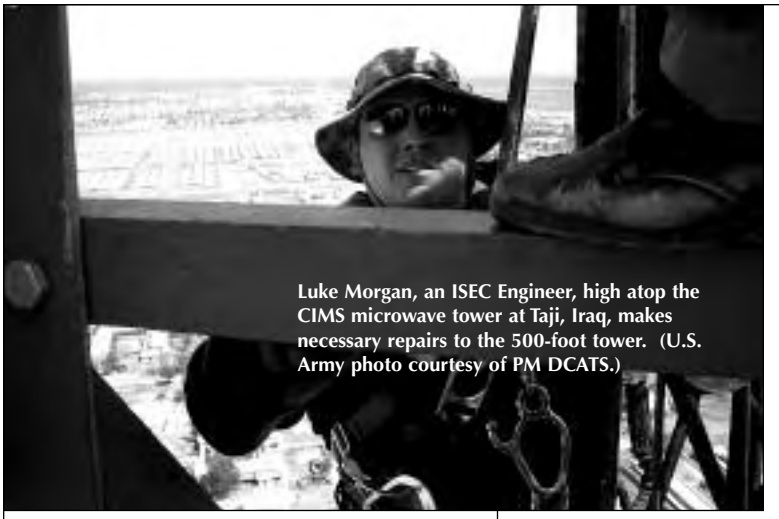
CIMS is providing superior communications bandwidth to support combatant commanders' and their Soldiers' critical command and control capabilities in challenging desert and urban environments. Here, Soldiers from 3rd Battalion, 320th Field Artillery Regiment, 101st Airborne Division, dismount their vehicles during a patrol near Tikrit, Iraq. (U.S. Army photo by SPC Teddy Wade, 55th Signal Co. (Combat Camera).)

However, with diligence and perseverance, one can overcome these obstacles and deliver a high-quality system, as MAJ Kevin Messer proved during his recently ended year-long deployment to Iraq. Leading a team from the Project Manager, Defense Communications and Army Transmission Systems (PM DCATS), part of the Army's Program Executive Office Enterprise Information Systems, Messer implemented CIMS, which provides near real-time point-to-point, point-to-multipoint and multipoint-to-multipoint data transmission services with multiple layers of redundancy for the Multi-National Force-Iraq (MNF-I).

CIMS, with the synchronous optical network communications links in the International Zone and Camps Victory, Slayer, Taji and Anaconda, provides OC-3 (155 megabits per second) bandwidth to support warfighters' critical command, control, communications, computers and intelligence missions. Messer said the links in the International Zone and Camps Victory and Slayer became operational in December 2005, with the Taji and Anaconda links following in April 2006.

CIMS allows MNF-I personnel to tap into the Nonsecure and Secret Internet Protocol Router Networks, the Combined Enterprise Regional Information Exchange System, voice, video teleconferencing (VTC) and the Joint Worldwide Intelligence Communications System.

"Because CIMS is a low-latency, high-speed, high-bandwidth system," said



Luke Morgan, an ISEC Engineer, high atop the CIMS microwave tower at Taji, Iraq, makes necessary repairs to the 500-foot tower. (U.S. Army photo courtesy of PM DCATS.)

Messer, "it allows MNF-I personnel to transmit near real-time data to support strategic or operational missions — whatever the user needs it for. CIMS will allow us to relieve one DKET (deployable Ku earth terminal) and to redeploy that DKET elsewhere."

"CIMS is a major asset to forces in Iraq for providing lower cost and higher speed interconnectivity versus traditional satellite deployments," added Luke Morgan, a U.S. Army Information Systems Engineering Command (ISEC) Engineer who worked on the CIMS project.

Overcoming Engineering Challenges

Despite considerable pressure from users to deliver CIMS, Messer steadfastly insisted on straightening out the system's kinks before turning it over. He said a major engineering challenge was that CIMS, which includes microwave radios, asynchronous transfer mode switches and high-speed encryption devices, couldn't be tested before being fielded. Instead, they had to install the system and then fine-tune it from end-to-end. After exhaustive testing, with participation from ISEC engineers, the gaining operations and maintenance (O&M) command and coordinated support from vendors and contractors, CIMS' performance far exceeded commercial standards. "We had to learn on the ground," said Messer. "We could not assume conditions would be as they should be, or as we might expect they should be. We could not assume tech control facilities had stable power or grounding — sometimes they did, sometimes they didn't. We could not assume wiring was properly installed or insulated. We, as the PM, or the O&M folks, had to do the upgrades to fix the problems as we encountered them. Whatever it took, that's what we did."

"Everything is more difficult in Iraq," echoed PM DCATS' SFC Arthur Lee, who assisted on the project. "While managing your project in Iraq, the 'rule of 3 and 6' governs operations, meaning it takes three times longer to get anything done in Iraq on a 'normal' day and six times longer when things get hot with increased insurgent activity."

Some "normal day" challenges? The climate, for one. Messer said there were temperatures of 120-plus degrees in the summer and torrential deluges during the rainy winter season, which would fill the pits excavated for the microwave towers' concrete support pads and have to be pumped out. "We also had three sandstorms when I was there," added Messer. "You would see a mountain of sand stretching across the horizon, hundreds of feet high, and watch as it approached you. The only thing you could do then was to wait until it passed over you."

Another challenge was getting Iraqi workers and vehicles on and off bases. "You had to get the local nationals (Iraqi workers) badged," said Messer. "Then it could take a couple of hours

The CIMS microwave tower at Taji rises 500 feet, and provides crucial data transmission services for operational units in Iraq. (U.S. Army photo by Luke Morgan.)

as they waited in line to get through the gate. Then you had to get them back off the base at the end of the day. This limited the number of hours they could actually work in a day."

PM DCAT's MAJ Kevin Messer (left) and SFC Arthur Lee display the smaller CIMS components. Messer holds a microwave tower anchor bolt and Lee holds a piece of fiber-optic cable. (U.S. Army photo by Stephen Larsen.)

Lee related one such experience of trying to get a water truck onto a base, where the water was needed to make the concrete pad for a microwave tower. After the truck waited in the queue for several hours and finally reached the gate, the checkpoint guards made the driver empty the water tank for a security inspection, to ensure there were no explosives, weapons or insurgents hidden in the tank. "Luckily, we were able to refill the water tank from a stream near the work site," said Lee.

And then there was the problem of the height of some of the microwave towers: they reached as high as 500 feet at some locations, which was a problem when the Iraqi cranes went only 100 feet high and sometimes bent when lifting sections of towers. The team ended up importing a gen pole and winch from the United States to do the heavy lifting.

Recounting one unfortunate incident, Messer stated that "We lost one local national to a terrorist attack," said Messer. ISEC's Morgan remembered several incidents of small-arms fire at the microwave tower sites during construction. "One morning," Morgan added, "an unexploded rocket was found 60 feet from the base of one of the tower sites."

If it really got hot, Lee said the crew could get locked down "inside the wire," behind the concrete walls and barbed wire of the base's security perimeter, where they waited for things to cool off. "That could bring the project to a halt," said Lee, "until it became safe enough for the Iraqi workers to travel and get back to the base, or for us to get off the base to go to other bases."

> CIMS allows MNF-I personnel to tap into the Nonsecure and Secret Internet Protocol Router Networks, the Combined Enterprise Regional Information Exchange System, voice, VTC and the Joint Worldwide Intelligence Communications System.

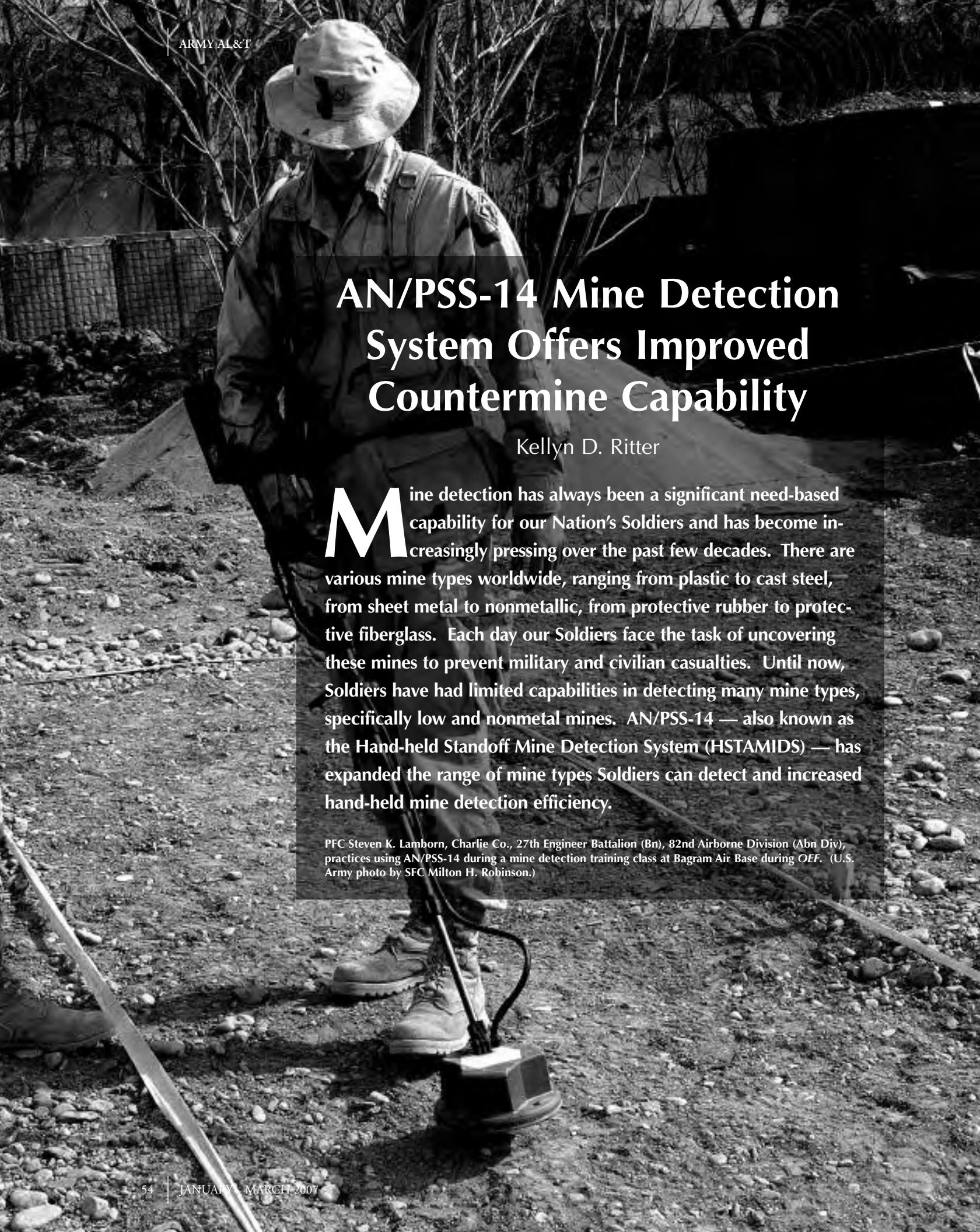
Despite these challenges the CIMS team made it work. Messer gives high marks to the CIMS team, singling out ISEC engineers Morgan and Brock Tucker for kudos. "I had those guys working 18-hour days for almost 3 months straight," said Messer. "When we ran into problems, they'd stop, troubleshoot and fix the problems."

Messer also praised the performance of Robert Delaski of CACI International Inc., the contractor CIMS project coordinator on the ground in Iraq. "Robert Delaski was amazing," said Messer. "He was my go-to parts guy. If we needed material — fiber, antennas, whatever we needed to be successful — you would see Delaski driving a forklift across Victory Base with it."

Despite the obstacles, CIMS was delivered just ahead of the promised mid-April 2006 date. The system's operation exceeded expectations, and the customer was pleased with the result. This was evident April 17 when BG Gary Connor, MNF-I's Deputy Chief of Staff, Communications and Information Systems (C6), stopped a high-level VTC of officers representing MNF-I, the Coalition Forces Land Component Command, the 335th Theater Signal Command and the 160th Signal Brigade to publicly recognize Messer for his work on CIMS and other infrastructure projects in Iraq. Connor presented Messer with an MNF-I commander's coin and an MNF-I patch for his uniform.

"I felt appreciated — no, make that vindicated," said Messer. "I would not turn over the system to the customer unless it was right. Despite the challenges, we met the date and delivered what we promised."

STEPHEN LARSEN is the Program Executive Office for Enterprise Information Systems Public Affairs Officer at Fort Monmouth, NJ. He has more than 20 years' experience writing about Army systems. He holds a B.A. in American studies from the College of Staten Island of the City University of New York.



AN/PSS-14 Mine Detection System Offers Improved Countermine Capability

Kellyn D. Ritter

Mine detection has always been a significant need-based capability for our Nation's Soldiers and has become increasingly pressing over the past few decades. There are various mine types worldwide, ranging from plastic to cast steel, from sheet metal to nonmetallic, from protective rubber to protective fiberglass. Each day our Soldiers face the task of uncovering these mines to prevent military and civilian casualties. Until now, Soldiers have had limited capabilities in detecting many mine types, specifically low and nonmetal mines. AN/PSS-14 — also known as the Hand-held Standoff Mine Detection System (HSTAMIDS) — has expanded the range of mine types Soldiers can detect and increased hand-held mine detection efficiency.

PFC Steven K. Lamborn, Charlie Co., 27th Engineer Battalion (Bn), 82nd Airborne Division (Abn Div), practices using AN/PSS-14 during a mine detection training class at Bagram Air Base during *OEF*. (U.S. Army photo by SFC Milton H. Robinson.)

Phil Purdy, Deputy Product Manager for Countermine, Project Manager Close Combat Systems, and Mark Locke, AN/PSS-14 Project Management Engineer, met with *Army AL&T* Magazine to discuss the importance of the Army's most advanced hand-held countermine system.

Hand-Held Countermine History

Hand-held mine detection originated during WWII when the use of mines became more prevalent in battle, increasing the need to counteract this threat. During this period, all mines contained a large quantity of metal and the first mine detectors functioned as metal detectors. Beginning in the 1970s, foreign enemies created plastic case mines that had a much lower metallic consistency, rendering them much harder to detect with conventional mine detection equipment. The fatality threat changed for Soldiers, who were now exposed to mines that were undetectable or inaccurately detectable with their previously dependable equipment.

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The Army sought to create a hand-held mine detector that would counter the new endangerment posed by nonmetal mines and, in response, fielded the AN/PRS-7. However, in the midst of deploying these units, the Army recalled all AN/PRS-7 devices because they were unreliable and error prone. As Purdy explained, "a mine detection device has to be considered sufficiently reliable with a 92-plus percent success rate, as well as portray a high level of confidence by the Soldiers who use it, for it to be successful." The AN/PRS-7 failed to meet these stipulations, and the nonmetal mine threat continued to increase. Nearly 10 years passed as the Army sought a functional hand-held countermine system that would be rugged, durable and operable in all environments.

AN/PSS-12 — a metal detector bought as a commercial-off-the-shelf item from Schiebel Corp. of Austria and fielded in the early 1990s — promised new advances in the field. It was the most advanced metal detector on the market, but still could only detect metal mines. "AN/PSS-12 was much more advanced than any previous metal detector but still did not provide the needed capability for our Soldiers — that of accurate nonmetal mine detection," Locke explained.

Unit Development

Beginning in 1992, development of what would become the AN/PSS-14 device revitalized the mine detection technology effort. The development was originally a science and technology objective sponsored by the Defense Advanced Research Projects Agency (DARPA). DARPA examined new technologies to combat nonmetal mine threats, such as ground penetrating radar (GPR) and chemical, metal or thermal neutron activation, and found that GPR was the most reliable source of mine detection, because many of the other technologies had specific limitative regulations.

AN/PSS-14 was the first modern-day countermine device to use radar detection. Older systems, such as AN/PSS-11 and -12, lacked GPR, enabling only metal mine detection. The device's technological development was extremely complex and took years of engineering testing to perfect. Purdy explained that, "as AN/PSS-14 was being tested, our engineers kept hitting different roadblocks in which one seemingly minute detail would affect the system's functionality." Eventually, the engineering succeeded and the Army contracted CyTerra Corp., a technology provider specializing in military defense and homeland security, to produce AN/PSS-14. The device was first fielded in 2001 at the onset of *Operation Enduring Freedom (OEF)*.

Combat engineers from the Army's 10th Mountain Division (Light) (10th Mtn Div (L)) work in teams of two while clearing mine fields at Bagram Air Base, Afghanistan. One Soldier initially probes the area, and the other Soldier sweeps it with an AN/PSS-14. (U.S. Army photo by SGT Greg Heath, 4th Public Affairs Detachment (PAD).)

Life-Cycle Speed

AN/PSS-14 technology was so valuable to Soldiers that it was approved for field use before undergoing the customary regulatory steps for production. When Soldiers began deploying for *OEF* in 2001, they needed a more advanced capability for mine detection than what AN/PSS-12 technology was providing. The AN/PSS-14 program entered into the engineering and manufacturing development (EMD) phase of its life cycle in 2000-01. "Normally, the EMD process takes three more years of development before the product is classified and deployed for

When mine-clearing vehicles such as the Meerkat, Husky and Buffalo couldn't handle the rough terrain near Bagram Air Base, 10th Mtn Div (L) combat engineers cleared land mines using the AN/PSS-14. (U.S. Army photo by SGT Greg Heath, 4th PAD.)

Soldier use," Purdy explained. "However, the need for advanced mine detection technology was so critical that the Army Requirements Oversight Council (AROC) accelerated the life-cycle process of AN/PSS-14 and surpassed the normal processing time frame." AROC awarded CyTerra Corp., (now L-3 Communications) $2 million to field 210 AN/PSS-14 systems, and the life-cycle process was shortened to one year of low-rate production.

Normally, the EMD process takes three more years of development before the product is classified and deployed for Soldier use. However, the need for advanced mine detection technology was so critical that the AROC accelerated the life-cycle process of AN/PSS-14 and surpassed the normal processing time frame.

Even after deployment, the system had to be tested operationally in CONUS to reach Milestone C for completion of its proper life cycle. After approximately two years of developmental, operational and production testing, AN/PSS-14 was type classified and ready for massive deployment. L-3 Communications was awarded a contract in July 2006 for full-rate production and is currently constructing thousands of units for *OEF/Operation Iraqi Freedom (OIF)*.

Technological Logistics

AN/PSS-14's revolutionary aspect is that it consists of both a metal detector and GPR, giving it dual capability. The pulsed electromagnetic metal detector portion of the device is extremely sensitive, "probably the number two or three metal detector in the world," Purdy explained. Previous devices could not pick up the smallest traces of metal composites — a feat AN/PSS-14 could accomplish. AN/PSS-14 can detect even the most diminutive piece of metal and GPR enables it to detect the explosive part of the mine instead of just the metal part. The combination of the metal detector and GPR enables AN/PSS-14 to detect anything below the surface with mine-like characteristics, thereby essentially detecting metallic and low-metallic mines.

The addition of GPR has extensively reduced the mine detection margin of error. The dual-detection capability enables AN/PSS-14 to sustain a low false-alarm rate. David Elliot, Operations Manager for the HALO (Hazardous Areas Life-Support Organisation) Trust in Sri Lanka, a charitable organization that specializes in humanitarian land mine removal, contends that "the addition of GPR to mine detecting devices poses a sixfold increase in the productivity/clearing rate."

AN/PSS-14 also has the unprecedented capability to reject metal clutter that is detected by the device's metal detector portion. "Previous mine detectors, because they were designed to identify any metal substance, could not discriminate between clutter metal and mine metal," Locke explained. "Soldiers spent endless amounts of time marking and uncovering any pieces or scraps of metal, which frequently were not actual mines. The process was tedious and inefficient."

AN/PSS-14 indicates to the user whether metal is detected but will not signal a mine detection unless GPR identifies other mine-like material. When AN/PSS-14 detects mine-like material, it alerts the operator through audio signals — the first, a sound that indicates metal has been detected. The second sound, of a different pitch and tone, is the aided target recognition, which signifies that the combination of metal detector and GPR signals indicates the presence of a mine. These sounds are all filtered through earpieces, which the Soldier wears under his/her helmet. An advanced microprocessor allows readings to be accomplished quickly and accurately, thereby immensely decreasing the margin of error, making AN/PSS-14 an enormously time- and monetary-saving device.

The dual-detection system also prevents environmental factors that previously inhibited accurate readings from standard mine detectors. "Metallic soil, which exists in climates such as those in Bosnia, Afghanistan and Cambodia, presents hazardous dilemmas as it essentially renders mine detectors useless because they cannot distinguish metal objects from substances contained in the metallic soil," Locke said. AN/PSS-14 balances out the soil's metallic components, which in turn makes the soil "invisible" in light of its detection scheme.

The AN/PSS-14 continuously adapts to small changes in soil conditions. If a significant change occurs (for example, moving from clay soil to sand soil), the device's microprocessor automatically warns the operator to recalibrate the system. Guided by voice commands from the microprocessor, the operator moves AN/PSS-14 over the new soil as he/she normally would to scan for potential mines. This "retrains" the microprocessor to read new terrain and results in more accurate mine-like material detection.

AN/PSS-14 Versatility

AN/PSS-14 was engineered to aid Soldiers in a variety of environments worldwide, from Afghanistan to Cambodia. Thus, the mine detector can

CyTerra civilian contractor Larry D. Perry, left, explains AN/PSS-14's mechanics to SPC Alva J. Gwinn, Charlie Co., 27th Engineer Bn, 82nd Abn Div, at Bagram Air Base during *OEF*. (U.S. Army photo by SFC Milton H. Robinson.)

operate in virtually all environmental conditions, including ice, water, sand, snow, heat, mud and clay. The device is also lightweight (9.6 pounds) and compact, folding up effortlessly and quickly for easy transportation.

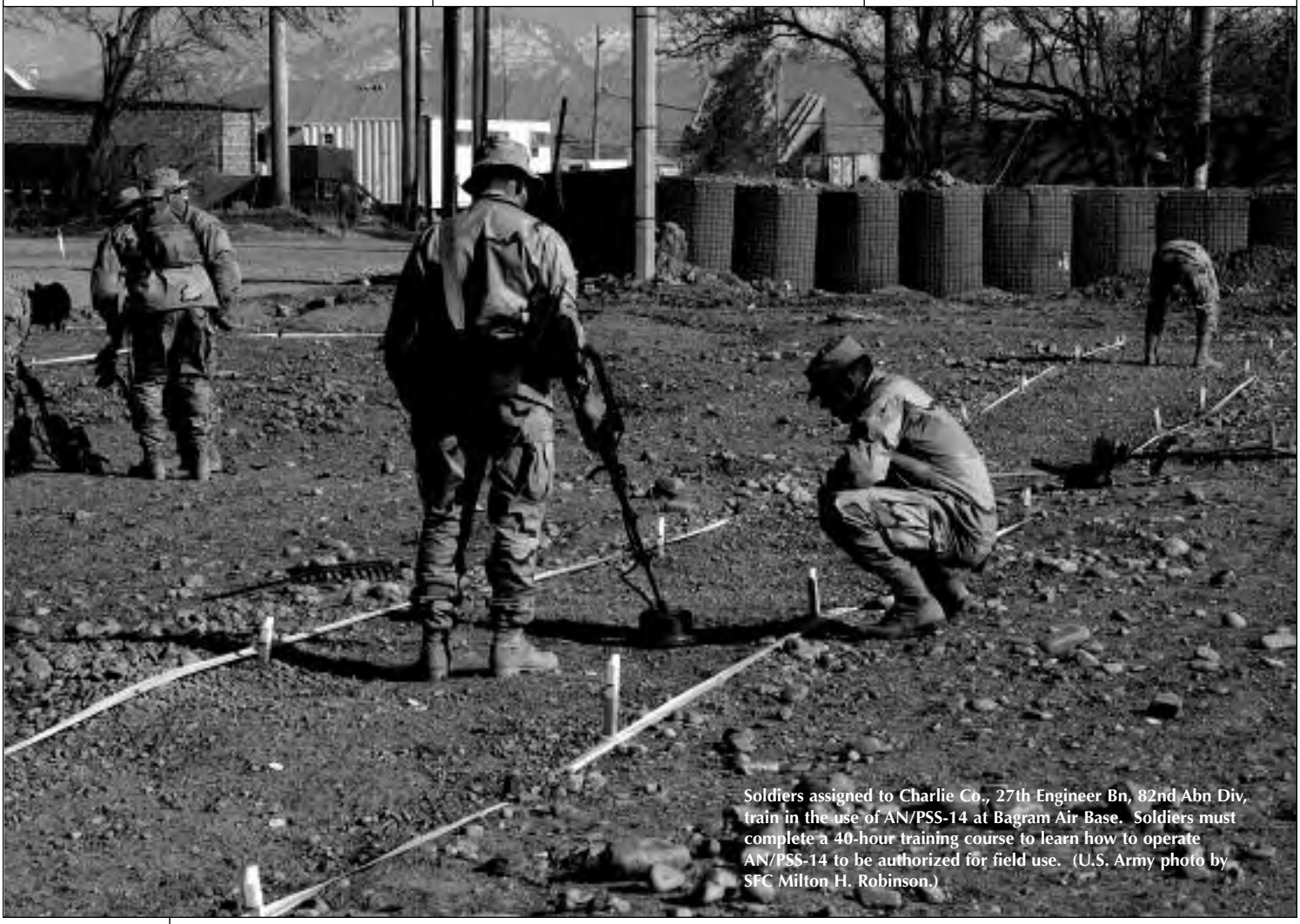
Unlike previous countermine devices, AN/PSS-14's detection function penetrates walls. When placed on one side of the wall, the device's GPR detects movement on the other side of the wall, which "is especially valuable when Soldiers are guarding against enemies in new or urban territory," Purdy contends.

> The combination of the metal detector and GPR enables AN/PSS-14 to detect anything below the surface with mine-like characteristics, thereby essentially detecting metallic and low-metallic mines.

AN/PSS-14 works in congruence with other countermine systems and devices to give Soldiers the most range of capability possible. Larger, multi-person operated systems, such as the Meerkat, Husky and Buffalo, use metal detector technology to detect potential mines and, if possible, destroy them. Systems such as the Aardvark and Hydrema then detonate or destroy those mines to eliminate danger to troops and civilians. Soldier units that use these expansive countermine systems also have hand-held AN/PSS-14s for mine detection. Unlike larger, bulky machinery, AN/PSS-14 functions on rugged and uneven terrain or through thick vegetation. The device is operated by a single Soldier, instead of a crew, making it the prominent device used for off-road path mine detection. In a world of countermine giants, AN/PSS-14 is the hand-held version that enables Soldiers to clear terrain that was previously left unchartered by countermine systems.

Training and Repair

Forward repair facilities are set up in theater for damaged AN/PSS-14s. Locke advises that "there are very few items Soldiers can repair on their AN/PSS-14s." Soldiers bring the damaged AN/PSS-14 to the forward repair facilities, where the problem usually can be amended. More serious technical complications are sent to Tobyhanna Army Depot, PA, for diagnosis



Soldiers assigned to Charlie Co., 27th Engineer Bn, 82nd Abn Div, train in the use of AN/PSS-14 at Bagram Air Base. Soldiers must complete a 40-hour training course to learn how to operate AN/PSS-14 to be authorized for field use. (U.S. Army photo by SFC Milton H. Robinson.)

and repair. Soldiers keep spare devices on hand in case of breakage.

Unlike standard weapons or defense devices that all troops use, not all Soldiers are trained in AN/PSS-14's use. Most often, combat engineering Soldiers receive training and operate the device in the field, although some nonengineers also have authorization to use the device. In theater AN/PSS-14 operators take a 40-hour training course in which they learn about the devices' physical and electronic logistics, as well as receive extensive training on proper use. Soldiers practice using AN/PSS-14 in a terrain similar to the operational environment to gain a full understanding of its operability.

While in training, Soldiers learn to apply safety precautions when in doubt. Soldiers are taught to use cautionary judgment and if not absolutely certain, mark any questionable objects as mines for further investigation. Once in theater, Soldiers are limited in the amount of AN/PSS-14 operation time. Because of the mental strain AN/PSS-14 use renders on Soldiers, they are trained to only operate the device in rotating increments of 20 minutes to prevent loss of concentration and exhaustion.

Humanitarian Demining (HD)

The humanitarian world has seen great success with AN/PSS-14. Locke indicates that "unlike Soldiers in wartime, those working to demine humanitarian areas use the countermine technology all day, every day." The responsibility of these users is to demine unchartered mine-filled territory in countries worldwide. Soldiers in theater sometimes have skill erosion, but HD users constantly use AN/PSS-14 so their skills stay sharpened. However, similar to Soldiers' reactions, the HD world has seen positive reactions to the demining device. Purdy projected that "the Army's HSTAMIDS excellent performance in support of HD operations should bolster Soldier confidence in ongoing *OEF/OIF* mine detection operations."

Future Endeavors

The Army has currently fielded approximately 3,000 AN/PSS-14 units. In July 2006, they awarded a production contract to L-3 Communications to proceed with full-rate production. Over the next five to six years, the Army plans to field an additional 15,000 units. Purdy and Locke confirm that the feedback from Soldiers in theater has been positive and reassuring, and they believe this can be attributed to the Army's strong focus on both initial and sustainment training for Soldiers operating AN/PSS-14. "The vigorous training our Soldiers go through really helps maximize their performance operating AN/PSS-14 once they are in theater," Purdy contended.

AN/PSS-14 operators take a 40-hour training course in which they learn about the devices' physical and electronic logistics, as well as receive extensive training on proper use. Soldiers practice using AN/PSS-14 in a terrain similar to the operational environment to gain a full understanding of its operability.

Both Purdy and Locke agree that the foreseeable future will establish AN/PSS-14 as the replacement for all hand-held mine detectors. Currently, there are no other technological developments for a hand-held device that surpass the capability of AN/PSS-14. Other technologies, while they may seem better equipped for mine detection, are not practical for hand-held means in an in-theater environment, whether these systems be too cumbersome, powerful or time constraining. AN/PSS-14 is currently the only hand-held system that provides an efficient rate of accuracy at 95 percent or above.

"The next step for the advancement of countermines," Purdy advised, "is to put AN/PSS-14 technology into robotic form — an autonomous mine detection platform — which would remove Soldiers from the hazardous terrain of mine fields and have the responsibility of physical labor and danger fall to machines." Application of this technology into robotic form will greatly enhance the warfighter's ability to concentrate on other missions while the machinery protects Soldiers from mines. Soldiers will be removed from the physical process through robotic operation and joystick control. This is not new technology — the Army already uses robotic forms in scientific systems such as the Mobile Detection Assessment Response System (see "Robotic Guards Protect Munitions," *Army AL&T* Magazine, October-December 2006, Page 62). However, implementing robotics into countermines is a new application of that technology. AN/PSS-14 certainly promises to progress into the "next generation" of mine detection and help save countless civilian and military lives.

KELLYN D. RITTER, Manuscript Editor, provides contract support to the U.S. Army Acquisition Support Center through BRTRC Technology Marketing Group. She has a B.A. in English from Dickinson College.

Celebrating Our Acquisition Stars 2006! Recognizing Acquisition Superiority in a Time of Operational Uncertainty

Michael I. Roddin
U.S. Army photos by Richard Mattox, PEO EIS/USAASC

The 2006 Army Acquisition Corps (AAC) Annual Awards Ceremony was held Oct. 8, 2006, at the DoubleTree Hotel Crystal City in Arlington, VA. The event recognized the accomplishments of the acquisition workforce's most extraordinary members and the teams they lead. The ceremony's theme, "Celebrating Our Acquisition Stars!," was a tribute to the uniformed and civilian professionals who work tirelessly behind the scenes to provide combatant commanders and their Soldiers the weapons and equipment they need to execute decisive, full-spectrum operations in support of the global war on terrorism (GWOT).

AAE/ASAALT Claude M. Bolton Jr. (left) presents MILDEP to the ASAALT/DACM LTG Joseph L. Yakovac Jr. with a statue of the American Soldier in honor of his 35-plus years of dedicated service to the Army Acquisition Corps, U.S. Army and the Nation.

Army Acquisition Executive (AAE) and Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT) Claude M. Bolton Jr. hosted the prestigious ceremony. In opening the evening's formal awards ceremony, Bolton remarked, "Tonight we will honor some of the outstanding men and women — military and civilian — of the AAC and the greater Army Acquisition, Logistics and Technology Workforce ... it is clear that we have the world's best acquisition and logistics workforce to keep our Army the most capable land force on Earth. We serve a Nation at war and a military force that is transforming while fighting and winning the GWOT. It is clear that we have charted the right course — increasing capability, flexibility and sustainability — and that we must maintain the tremendous momentum we have built."

During his presentation, Bolton cited several examples of key acquisition initiatives that resulted in increased capacity and capability for our warfighters. "Our Rapid Equipping Force and Rapid Fielding Initiative have substantially changed the normal acquisition process by enabling commanders and Soldiers to purchase and field commercial-off-the-shelf technologies to respond as rapidly as possible to changing operational environments. Likewise, through our acquisition and logistics processes, we have increased or improved equipment to meet urgent operational needs in Afghanistan and Iraq."

COL Fred Mullins, USAASC Deputy Director, served as the event's master of ceremonies.

Specifically, Bolton cited the fielding of body armor to 100 percent of all Soldiers in theater, the up-armoring of more than 11,000 Humvees, augmentation of all Army aircraft operating in theater with aircraft survivability equipment and the superb operational ready rate of the fleet of Stryker vehicles for the two deployed Stryker Brigade Combat Teams (BCTs) that have logged more than five million miles during combat patrols in Iraq.

"One thing that I would like you to always remember is that we — each and every one of us — work for the Soldier," Bolton emphasized. "Every day, America's warfighters stand ready to make the ultimate sacrifice. They serve with distinction in Iraq and Afghanistan, in the Balkans, in Kuwait, in the Sinai, in Korea — in 120 countries throughout the world. They face threats that change, quite literally, overnight, and their success in meeting these challenges rests on our shoulders."

U.S. Army Acquisition Support Center (USAASC) Deputy Director COL Fred Mullins presided over the event as master of ceremonies. Other Army and defense acquisition senior leaders present included former AAE/ASAALT Page Hoeper and his wife Barbara; LTG Joseph L. Yakovac Jr., Military Deputy (MILDEP) to the ASAALT and Director, Acquisition Career Management (DACM), and his wife Valerie; LTG Steven Boutelle, the Army's Chief Information Officer, G-6; Tina Ballard, Deputy Assistant Secretary of the Army (DASA) for Policy and Procurement (P&P), and her husband Wenners; Dr. Thomas H. Killion, DASA for Research and Technology and the Army's Chief Scientist, and his wife Connie; former MILDEP to the ASAALT LTG (Ret.) John S. Caldwell and his wife Judy; and U.S. Army Materiel Command (AMC) Chaplain COL Kenneth Sampson and his wife Kate. Representing the DASA for Integrated Logistics Support was Larry Hill and his wife Barbara.

"Our theme tonight is 'Celebrating Our Acquisition Stars,' and what a fitting forum to recognize the individuals and teams who contribute so much to our Soldiers, our Army and our Nation," Mullins remarked. "It is indeed a personal honor and privilege for me to announce the recipients of this year's awards."

Yakovac, DASA (P&P) Tina Ballard (second from left) and Bolton present Kristina Jensen, U.S. Army CELCMC, with the inaugural SECARMY Excellence in Contracting Barbara C. Heald Award.

Recognizing a Soldier's Soldier

The first recognition of the evening went to LTG Yakovac. Using a slide show presentation to capture Yakovac's lasting contributions to the U.S. Army and the AAC over the past decade, Bolton related that Yakovac would retire in November. "It is important after more than 35 years of faithful and honorable service, that we recognize his enormous contributions to our Nation and our Army. His deep and abiding love for our Soldiers is evident. He knows firsthand the great importance of their being well-trained, well-led and well-equipped," Bolton

Yakovac, Larry Hill (second from left), representing the DASA for Integrated Logistics Support, and Bolton present Amy Barnett, AMLCMC, with the 2006 SECARMY Life Cycle Logistician of the Year Award.

emphasized. "And, through his tireless efforts, he has made a big difference in the lives of our Soldiers — Soldiers who are serving today, as well as those who will be serving tomorrow's force."

"During his more than 35 years of service, Joe Yakovac has, time and again, proven himself the consummate professional establishing the standard for ethics in the acquisition community," Bolton continued. "His leadership will be deeply missed by the Army, but he leaves a lasting legacy of countless, significant contributions to the Nation. Joe, on behalf of the men and women of the United States Army Acquisition Corps — and the greater acquisition and logistics workforce — it is my honor to present you with a statue of the American Soldier. Our courageous men and women in uniform display unrelenting tenacity, steadfast purpose, quiet confidence and selfless heroism." Bolton concluded, "It is a fitting tribute to you — a Soldier and a leader, who has dedicated his life to providing his fellow Soldiers with the weapon systems and equipment they need to fight, win and return home safely."

Yakovac, DASA for Research and Technology and the Army's Chief Scientist Dr. Thomas H. Killion (second from left) and Bolton present the Department of the Army (DA) Large Research Lab of the Year Award to ARL Director John Miller.

The 2006 AAC Awards Ceremony recognized nearly 100 nominees in five categories. Nominees and winners follow:

**Editor's Note:* each category contains the names of the nominees, and the winner's name is highlighted in bold text.

Secretary of the Army (SECARMY) Excellence in Contracting Barbara C. Heald Award

This first-ever award remembers and pays tribute to Barbara C. Heald, whose service and character was recognized at this year's ceremony, and whose sacrifice will forever be memorialized by this award for years to come. After retiring from a 27-year career in government service, Heald again came to the service of her Nation when she volunteered to deploy to Iraq. She knew her skills as a contract negotiator and contracting officer would be useful in the reconstruction effort. Heald was on her third tour of duty working for the Army's Project and Contracting Office in January 2005 when she was killed in a rocket attack on the U.S. Embassy compound in Baghdad. This award is presented to a Department of the Army civilian who clearly demonstrates selfless service to the country, extraordinary and uncompromising professionalism in contracting, and true commitment to the personal and professional growth of others.

Suzanne Anderson, U.S. Army Communications-Electronics Life Cycle Management Command (CELCMC)

Yakovac, Killion and Bolton present the DA Large Development Lab of the Year Award to ARDEC Director Dr. Joseph Lannon (second from right).

Robert Grasso, Program Executive Office Enterprise Information Systems (PEO EIS)

Eileen Hipe, U.S. Army Contracting Command (ACC), Europe

Kristina Jensen, U.S. Army CELCMC

Mark Lumer, U.S. Army Space and Missile Defense Command

Velia Pier, U.S. Army Contracting Agency (ACA) - The Americas

Yakovac, Killion and Bolton present the DA Small Development Lab of the Year Award to NSC Director Phillip Brandler (second from right).

Yakovac, Killion and Bolton present one of the DA Collaboration Team of the Year Awards to NSC Director Phillip Brandler and USARIEM Deputy Commander COL Gaston Bathalon (third and fourth from left) for their teamwork on the *Nutritionally Optimized First Strike Ration* project.

SECARMY Life Cycle Logistician of the Year Award

This award recognizes excellence in the field of Life Cycle Logistics and achievements in improving the Total Life Cycle Systems Management process. Army military and civilian personnel are eligible for the award, and nominations were open to all life cycle logisticians residing in program executive and program management offices, AMC, U.S. Army Training and Doctrine Command and other acquisition logistics and sustainment organizations. The AAE/ASAALT annually recognizes one military or civilian logistician with this award for significant Life Cycle Logistics achievements.

Amelia (Amy) Barnett, PEO Missiles and Space, U.S. Army Aviation and Missile Life Cycle Management Command (AMLCMC)
William Bidwell, PEO Aviation, Utility Helicopters Project Office
Gary Bishop, Headquarters, AMC
Michael Calabrese, U.S. Army CELCMC, Communications Security Logistics Agency
Robert Crawford, AMC, Joint Munitions Command (JMC)
William Cuneo, U.S. Army TACOM LCMC
Michael Jackson, PEO EIS, Project Manager Defense Communications and Army Transmission Systems
Danny Jordan, U.S. Army CELCMC
Randal Kendrick, U.S. Army Europe
Ralph Ocasio, PEO EIS, Product Manager Joint Automatic Identification Technology
Benjamin Pryor, PEO EIS, Product Manager Medical Communications for Combat Casualty Care
James Satchfield, PEO Combat Support and Combat Service Support (CS&CSS), Project Manager Tactical Vehicles
Keith Schweizer, U.S. Army TACOM LCMC
John Sells, U.S. Army CELCMC, Tobyhanna Army Depot
Lorenzo Thomas, U.S. Army AMLCMC
Roy Weaver, U.S. Army CELCMC
James Wheeler, AMC, JMC
Artro Whitman, U.S. Army AMLCMC
Gloria Wooten-Standard, U.S. Army TACOM LCMC

Our theme tonight is 'Celebrating Our Acquisition Stars,' and what a fitting forum to recognize the individuals and teams who contribute so much to our Soldiers, our Army and our Nation.

Department of the Army Research and Development Laboratory (RDL) of the Year Awards

The Department of the Army RDL awards program was established in 1975 to honor Army research and development (R&D) laboratories that have made the most outstanding contributions in science and technology, providing our warfighters with the best capabilities in the world. These awards recognize laboratories for their outstanding contributions and their impact on enhancing the Army's capabilities worldwide. The Army laboratories are recognized for their outstanding R&D efforts and warfighter focus, as well as their tremendous support to our Soldiers worldwide.

Yakovac, Killion and Bolton present one of the DA Collaboration Team of the Year Awards to ARL Director John Miller (center) and TARDEC Executive Director for Development Thom Mathes (second from right) for their collaboration on the *Powder Panel for Fuel Tank Protection* project.

Yakovac and Bolton present LTC James Simpson (center), DCMA Central Pennsylvania and Northern Iraq, with the SECARMY Acquisition Director of the Year Award (LTC/GS-14).

Yakovac and Bolton present ATC Director COL John P. Rooney (center), ATEC, APG, with the SECARMY Acquisition Director of the Year Award (COL/GS-15).

Large Research Lab of the Year Award

U.S. Army Engineer Research and Development Center
U.S. Army Medical Research and Materiel Command Laboratories
U.S. Army Research Laboratory (ARL) (John Miller, ARL Director, accepted the award for the lab.)

Large Development Lab of the Year Award

U.S. Army Armament Research, Development and Engineering Center (ARDEC) (Dr. Joseph Lannon, ARDEC Director, accepted the award for the lab.)
U.S. Army Aviation and Missile Research, Development and Engineering Center
U.S. Army Communications-Electronics Research, Development and Engineering Center
U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC)

Small Development Lab of the Year Award

Sergeant First Class Paul Ray Smith Simulation and Training Center
U.S. Army Edgewood Chemical Biological Center
U.S. Army Natick Soldier Center (NSC) (Phillip Brandler, NSC Director, accepted the award for the lab.)
U.S. Army Research Institute for the Behavioral and Social Sciences
U.S. Army Space and Missile Defense Technical Center

Collaboration Team of the Year Award

U.S. Army NSC and the U.S. Army Research Institute of Environmental Medicine (USARIEM) for the *Nutritionally Optimized First Strike Ration* (Phillip Brandler, NSC Director, and COL Gaston Bathalon, Deputy Commander, USARIEM, accepted the awards for the labs they represent.)

ARL and **TARDEC** for the *Powder Panel for Fuel Tank Protection* (John Miller, ARL Director, and Thom Mathes, TARDEC Executive Director for Development, accepted the awards for the labs they represent.)

> Our Rapid Equipping Force and Rapid Fielding Initiative have substantially changed the normal acquisition process by enabling commanders and Soldiers to purchase and field commercial-off-the-shelf technologies to respond as rapidly as possible to changing operational environments.

SECARMY Awards for Acquisition Director, Product and Project Manager of the Year

These awards recognize the expertise and ability needed to research, manage, develop, test, evaluate, contract, field and sustain the Army's warfighting systems to ensure that Soldiers have the material they need to fight with greater lethality, survivability and sustainability, regardless of where the battlefield or mission takes them. When faced with numerous challenges, and an environment characterized by change, deployments, unit rotations and high operations tempo, the nominees in these categories demonstrated exceptional skill and service above and beyond the call of duty to both the Army, the AAC and the Soldiers they support.

Acquisition Director of the Year — LTC/GS-14

LTC Craig DeDecker, ACA - Northern Region Contracting Center
LTC Patrick Mason, U.S. Army Test and Evaluation Command (ATEC), U.S. Army Aviation Technical Test Center, Flight Test Directorate
LTC James Simpson, Defense Contract Management Agency (DCMA), Central Pennsylvania and Northern Iraq

Yakovac and Bolton present COL Philip Carey (center), PEO IEW&S, Infrared Countermeasures, with the SECARMY Product Manager of the Year Award.

Yakovac and Bolton present COL Jonathan Maddux (center), PM FCS(BCT), with the SECARMY Project Manager of the Year Award (Future Force).

Yakovac and Bolton present COL Mark Rider (center), PEO Ammo, Maneuver Ammunition Systems – Direct Fire, with the SECARMY Project Manager of the Year Award (Current Force).

Acquisition Director of the Year — COL/GS-15

COL Peggy Carson, DCMA, Phoenix

COL John Rooney, ATEC, U.S. Army Aberdeen Test Center (ATC), Aberdeen Proving Ground (APG)

COL Jeffrey Willey, ACA, ACC, Korea, Principal Assistant Responsible for Contracting

Product Manager of the Year Award

LTC Calvin Bailey, PEO EIS, Defense Message System

LTC David Bassett, Program Manager Future Combat Systems (FCS(BCT)), FCS(BCT) Software Integration

COL Philip Carey, PEO Intelligence, Electronic Warfare and Sensors (IEW&S), Infrared Countermeasures

LTC Kenneth Carrick, PEO Command, Control and Communications Tactical (C3T) Tactical Radios – Current Force

LTC John Chicoli, PEO Missiles and Space, Field Artillery Launchers

LTC William Cole, PEO Ammunition, Excalibur

LTC Michael Flanagan, PEO Ground Combat Systems (GCS), Abrams

LTC Thomas Haase, Missile Defense Agency (MDA), Ground-Based Midcourse Defense (GMD), Ground-Based Interceptor Block 04 (formerly Exo-Atmospheric Kill Vehicle)

LTC(P) Daniel McCormick, JPEO Chemical and Biological (ChemBio) Defense, Reconnaissance and Platform Integration

LTC Jeffrey Mockensturm, MDA, GMD, Terminal High-Altitude Area Defense (THAAD) Radar

LTC Dwayne Morton, PEO CS&CSS, Test, Measurement and Diagnostic Equipment

LTC David Riggins, PEO Simulation, Training and Instrumentation (STRI), Air and Command Tactical Trainers

LTC Kevin Stoddard, PEO Soldier, Crew Served Weapons

LTC Leon Thurgood, PEO Aviation, Armed Reconnaissance Helicopter

Project Manager of the Year Award

COL Jesse Barber, Chemical Materials Agency – APG, Elimination of Chemical Weapons, Alternative Technologies and Approaches Project

COL Stephen Berté, JPEO ChemBio Defense, Joint Chemical and Biological Medical Systems

COL David Cook, MDA, GMD, Ground-Based Interceptor

COL Scott Crizer, ARDEC, Armament Systems Integration Center

COL Charles Driessnack, MDA, THAAD Radar

Yakovac and Bolton present MAJ Carl Kimball (center), PEO STRI, Assistant Product Manager for Live Training Systems, with the evening's first Army Acquisition Excellence Individual Sustained Achievement Award.

COL Peter Fuller, PEO GCS, Stryker BCT

COL Timothy Goddette, PEO CS&CSS, Force Projection

COL Harold Greene, PEO C3T, Battle Command

COL Jonathan Maddux, Program Manager FCS(BCT), Network Systems Integration

COL Cory Mahanna, PEO Aviation, Utility Helicopter

COL John Norwood, PEO Soldier, Soldier Equipment

Yakovac and Bolton present William H. Weed (center), PEO EIS, Medical Communications for Combat Casualty Care, with the evening's second Army Acquisition Excellence Individual Sustained Achievement Award.

COL James Ralph, PEO STRI, Training Devices

COL Mark Rider, PEO Ammunition, Maneuver Ammunition Systems – Direct Fire

COL Jess Scarbrough, PEO IEW&S, Tactical Exploitation of National Capabilities, and Director, Army Space Program Office

COL John Vaughn, PEO Missiles and Space, Lower Tier

2006 Army Acquisition Excellence Awards

The Army Acquisition Excellence Awards recognize an Army acquisition workforce member and/or team whose performance and contributions set them apart from their peers. The nominees work at all levels of the acquisition community, from senior leadership to newly hired interns. Any

Army acquisition workforce member, team or joint program, active duty military, including Reserve Component Soldiers and civilian employees, are eligible for award nomination. The award directly reflects the outstanding achievements in support of the Army's Soldiers and the Army's transformation initiatives.

Individual Sustained Achievement Award

George Albinson, ARDEC
MAJ James Bamburg, Office of the ASAALT, USAASC
Norman L. Brown, Headquarters, U.S. Army Field Support Command (AFSC), Acquisition Center
Laurie M. Castro, U.S. Army Medical Command (MEDCOM), Health Care Acquisition Activity (HCAA)
LTC Phil Deaton, U.S. Army AMLCMC
Michael W. Hubner, Developmental Test Command (DTC)
MAJ Carl Kimball, PEO STRI, Assistant Product Manager for Live Training Systems
Gary Olejniczak, JPEO ChemBio Defense
David J. Strawbridge, ATC
Amber Thompson, U.S. Army Sustainment Command
William H. Weed, PEO EIS, Medical Communications for Combat Casualty Care

Yakovac and Bolton present NARCO Director COL Earle Smith (center) with the Army Acquisition Excellence Equipping and Sustaining Our Soldiers Systems Award.

Equipping and Sustaining Our Soldiers Systems Award

Army Battle Command System and Enablers System of Systems Test Support Team, PEO C3T
Army Recruiting and Advertising Program Team, CELCMC, Acquisition Center
Army Special Operations Aviation Project Team, PEO STRI
Combat Feeding Directorate, U.S. Army NSC
Countermeasure Flares Team, PEO Ammunition, Project Manager Close Combat Systems
General Dynamics C4 Systems Performance-Based Logistic Team, PEO Aviation, Air Traffic Control Product Management Office
Global Combat Support System-Army Team, PEO EIS
Live Fire Team, DTC Medical Communications for Combat Casualty Care, PEO EIS
North Atlantic Regional Contracting Office (NARCO), MEDCOM, HCAA (COL Earle Smith, NARCO Director, accepted the award for his team.)
Small Caliber Second Source Team, AFSC

> Every day, America's warfighters stand ready to make the ultimate sacrifice. They serve with distinction in Iraq and Afghanistan, in the Balkans, in Kuwait, in the Sinai, in Korea — in 120 countries throughout the world. They face threats that change, quite literally, overnight, and their success in meeting these challenges rests on our shoulders.

Information Enabled Army Award

ATEC Tactical Wheeled Vehicle Instrumentation Team, ATC (COL John P. Rooney, ATC Director, accepted the award for his team.)
Northern Region Contracting Center – Fort Leavenworth, KS, ACA
Product Manager Network Opertions, Data Products Team, PEO C3T

Transforming the Way We Do Business Award

Information Technology, E-Commerce and Commercial Contracting Center, ACA
Operations and Maintenance Division, Directorate of Public Works, U.S. Army Garrison – Giessen, Germany
Task Force Acquisition, Logistics and Technology, ASAALT (MAJ James Bamburg, USAASC, accepted the award on behalf of the ASAALT Staff.)
White Sands Missile Range Lean Office, DTC

In closing the 2006 AAC Annual Awards Ceremony, the master of ceremonies thanked everyone for attending the event. "A special thanks goes to all

Yakovac and Bolton present ATC Director COL John P. Rooney (center) with the Army Acquisition Excellence Information Enabled Army Award.

Yakovac and Bolton present MAJ James Bamburg (center), USAASC, Task Force Acquisition, Logistics and Technology - ASAALT, with the Army Acquisition Excellence Transforming the Way We Do Business Award.

those who helped make this a memorable evening," Mullins remarked. "Although numerous awards were presented to individuals on behalf of teams, it was the contributions of many of our workforce members that made these successes possible. So let's give one final round of applause for all nominees, award winners and their teams who achieved so much for our Soldiers this past year."

This year's event attracted more than 360 guests, and USAASC Event Coordinator Andrea Simmons suggested that it's not too early to mark your calendars for next year's awards ceremony that will be held Sunday, Oct. 7, 2007. Simmons can be reached at (703) 805-1095 or via e-mail at **andrea.simmons@asc.belvoir.army.mil**. Questions on awards submission criteria and timelines should be directed to USAASC Awards Coordinator Merrilee Feller at (703) 805-1096 or **merrilee.feller@us.army.mil**.

MICHAEL I. RODDIN is the USAASC Strategic Communications Director and *Army AL&T* Magazine Editor-in-Chief. He has B.S. degrees in English and journalism from the University of Maine and an M.A. in marketing from the University of Southern California. Roddin is a former Army Advertising Program Manager and three-time Army Keith L. Ware Journalism Award recipient. In 2005, he was selected by the Secretary of the Army for Editor-of-the-Year Honors.

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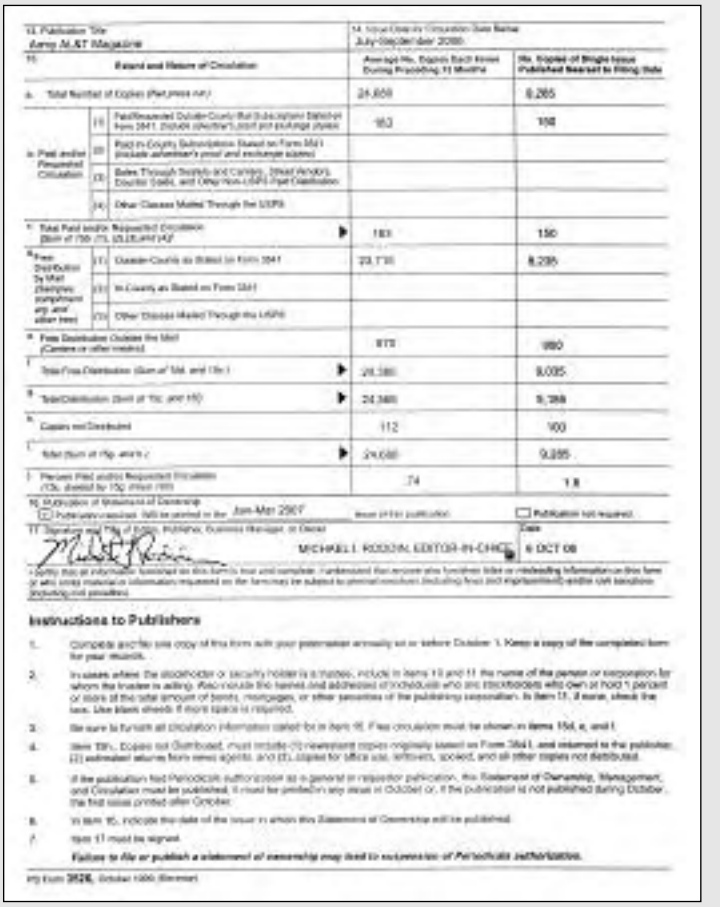

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PS Form 3526, October 1999 (Reverse)

Program Executive Offices Display Latest Efforts for Soldiers at AUSA 2006

Meg Williams and Kellyn D. Ritter
U.S. Army photos by Richard Mattox, PEO EIS/USAASC

Four program executive offices (PEOs) promoted their programs and products at the 2006 Association of the United States Army (AUSA) Annual Meeting & Exposition, Oct. 9-11, in Washington, DC. The annual meeting theme, "Call to Duty: Boots on the Ground," attracted more than 27,000 attendees and gave the PEOs a chance to explain what they do for Soldiers to military, civilian and industry members.

PEO EIS's Meagan Considine briefs MG Conrad W. Ponder Jr., Chief Integration Officer, Chief Information Office, G-6, on the PM Logistics Information Systems at PEO EIS's booth.

PEO Enterprise Information Systems (EIS)

PEO EIS set up a comprehensive display of 16 information system demonstrations at its booth, featuring the U.S. Army Enterprise Solutions Competency Center, World Wide Satellite Systems (WWSS), Single Army Logistics Enterprise and Army Small Computer Program, among other Army information and business systems.

PEO EIS also featured activities in the Project Manager (PM) DOD Biometrics booth, Product Director General Fund Enterprise Business Systems booth and Product Manager Joint-Automatic Identification Technology booth.

PEO EIS, which designs and implements the Army's enterprise resource planning (ERP), oversees the Enterprise Solutions Competency Center (ESCC), a centralized organization providing support for all Army enterprise solutions involving ERP and service-oriented architecture (SOA) initiatives. ESCC offers three core services:

- ERP/SOA Consultancy — providing unbiased ERP/SOA subject matter experts for consultation to Army enterprise solution initiatives and implementations.
- ERP/SOA Laboratory — leading-edge equipment and software for the purpose of demonstration and research.
- ERP/SOA Education — offering an ESCC Web site, supporting documents, references, tools, techniques, templates, delivery of relevant training and education sessions.

PEO EIS announced that the Army recently awarded a WWSS contract

SSG Jack Betancour (left) and SPC Ricky Whitely, both of Walter Reed Army Medical Center, play DARWARS Ambush! at PEO STRI's AUSA booth. The PC-based multi-player training system is being deployed at bases worldwide to train Soldiers on squad tactics and communication skills. Betancour praised Ambush!, saying it was an efficient way to learn and he wished it had been available when he was in basic training.

that allows DOD and non-DOD federal agencies to purchase commercial satellite terminals and associated services under a streamlined delivery order process from six prequalified vendors. The firm-fixed-price, indefinite delivery indefinite quantity contract, developed under a partnership between the PM Defense Communications and Army Transmission Systems and the PM Warfighter Information Network-Tactical, has a multibillion-dollar ceiling over a 5-year term. Each contract vendor will be required to provide comprehensive turnkey solutions — from satellite communications systems hardware to logistics support — for a myriad of commercial satellite terminal configurations.

PEO Simulation, Training and Instrumentation (STRI)

PEO STRI promoted its newest virtual simulation technology, the One Semi-Automated Forces (OneSAF) Objective System (OOS) software, at AUSA. After six years of development, OOS version 1.0 was released Sept. 29 and a release ceremony was held Oct. 2 at the Air Force Agency for Modeling and Simulation (M&S), Orlando, FL.

OOS enables Soldiers to experience war-like situations before actual deployment so they are better acquainted with the terrain, environment and locality once they arrive in theater, and can be more effective in performing their mission. A tactical combat simulation, OOS mimics battle situations ranging from individual troop movements through brigade level maneuver. The vast amount of real-life war experiences used in the game are extraordinarily accurate because the technology uses digitized military maps and electronic data taken from units already deployed in those areas.

The acute accuracy of OOS's simulation environments enables commanders to plan and practice battle situations and field exercises with their Soldiers, relying on maps of the actual terrain the troops use once deployed. This reduces Soldiers' injuries and casualties because Soldiers are familiar with their surroundings and battle tactics before arriving overseas.

The OOS program will play an immediate and effective role in Army troop training. The Army plans to use OOS everywhere, including simulation and in field technologies. Every Future Combat System (FCS) designed to advance training capability will use OOS as part of its training. PEO STRI's Product Manager for OneSAF will manage the software implementation and distribution.

OOS development promises further advancement in simulation technology for the Armed Forces. "In terms of simulation capability — the future looks very bright," explained Dr. James T. Blake, Program Executive Officer for PEO STRI. "We just approved the release of a scalable, composable simulation capability that addresses the full spectrum of military modeling and simulation needs. OOS will be the central element of the Army's embedded training efforts."

PEO Soldier

One of AUSA's busiest PEO exhibits was that of PEO Soldier, with its equipment, weapons, new uniforms and bomb suits. LTC Jonathan D. Long, Deputy Product Manager, Soldier Survivability, explained that in August 2006, PEO Soldier consolidated all ballistics and Soldier survivability programs under one shop — Product Manager Soldier Survivability, under PM Soldier Equipment. "This brings our technical expertise for survivability into one place," he said. "Everything that directly saves lives — next-generation Army Combat Helmets, Interceptor Body Armor, Enhanced Small Arms Protective Inserts — are together now."

This includes the Cupola Protective Ensemble, a new blast-protection uniform

SFC Marvin Kelly, 1SG Richard Thomas and SSG Alfred Lanier, all with the Military District of Washington, look on as MAJ Robert Helms, Assistant Product Manager, Clothing and Individual Equipment (C&IE), explains the seven layers of the Army's new Extended Cold Weather Clothing System.

From left, LTC John Lemondes, Product Manager, C&IE, and MAJ Robert Helms, Assistant Product Manager, C&IE, discuss the benefits of the Army's new Extended Cold Weather Clothing System with BG R. Mark Brown, then U.S. Army Research, Development and Engineering Command Commanding General, during the 2006 AUSA Annual Meeting.

COL Lloyd McDaniels (left), PM, IAMD, speaks with BG Mike Cannon, PEO MS, at PEO MS's AUSA booth. PEO MS is applying an SoS acquisition approach, and the IAMD Project Office is ensuring that the IAMD systems-of-systems fights cooperatively and cost effectively.

designed to protect U.S. forces that operate crew-served, weapon-ring mount cupolas on Humvees, 5-ton trucks and Strykers from blast overpressure and fragmentation effects of rocket-propelled grenades and improvised explosive devices.

Soldiers were drawn to PEO Soldiers' mannequins outfitted in new uniforms. The improved combat vehicle crewman coverall provides protection from flame and flash fires in all weather conditions. The new Army Combat Uniform is the culmination of many suggestions made by Soldiers and months of research and development. The blue Army service uniform streamlines the number of service uniforms to one and reduces the burden on Soldiers to maintain more than one service uniform.

Long embodied the Army Acquisition Corps' willingness to go the distance for Soldiers on the field. "There's still more we can improve on to address next-generation threats. We can work toward making all our items better — lighter, smaller and more cost-efficient to produce," he said.

PEO Missiles and Space (MS)

PEO MS provides centralized management for all tactical and air defense missile programs.

Its portfolio of programs spans the full spectrum of the acquisition process from system development to production, fielding and sustainment. PEO MS is applying a system-of-systems (SoS) acquisition approach to meet current warfighter requirements and obtain the desired capabilities of the Army air and missile defense Future Force.

The Integrated Air and Missile Defense (IAMD) Project Office is ensuring that the IAMD systems-of-systems fights cooperatively and cost effectively within the Joint, Interagency, Multinational SoS by integrating analytical efforts, standardizing verification methodologies, consolidating simulations and test resources, and optimizing test/exercise risk mitigation value.

PEO MS has been instrumental in developing hit-to-kill (HTK) technology used in the Patriot Advanced Capability-3 (PAC-3) missile. The missile employs HTK technology for greater lethality against tactical ballistic missiles armed with weapons of mass destruction. PAC-3 also counters advanced cruise missile and aircraft threats.

The Cruise Missile Defense Systems (CMDS) Project Office provides support to protect the maneuver force and other critical assets against cruise missiles, unmanned aerial systems, and rotary- and fixed-wing aircraft. CMDS consists of Joint Land Attack Cruise Missile Defense Elevated Netted Sensor, Sentinel Radar, Surface-Launched Advanced Medium Range Air-to-Air Missile, Stinger based Avenger and Man-Portable Air Defense system. System features will provide the maneuver commander with low-altitude air defense, aerial combat identification and CMDS will be fully integrated into the digitized battlefield. Sentinel Radar has been critical in providing air surveillance of the National Capital Region and other areas as part of homeland defense efforts.

Non-Line-of-Sight Launch System (NLOS-LS), which also falls under PEO MS, is a core system within the FCS family of systems. NLOS-LS provides precise NLOS lethal fire for the FCS Brigade Combat Team. NLOS-LS will also be provided to the Current Force in FCS Spin Out 1.

MEG WILLIAMS provides contract support to the U.S. Army Acquisition Support Center (USAASC) through BRTRC Technology Marketing Group (TMG). She has a B.A. in English from the University of Michigan and an M.S. in marketing from Johns Hopkins University.

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From the Acquisition Support Center Director

We begin 2007 by welcoming LTG Ross N. Thompson III to his new post as Military Deputy (MILDEP) to the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT) and Director, Acquisition Career Management (DACM). I encourage you to read *Army AL&T's* interview with LTG Thompson on Page 4 of this issue. LTG Thompson comes to ASAALT after serving as the Army's Director, Program Analysis and Evaluation (PAE). Prior to that assignment, he was Commanding General, U.S. Army Tank-automotive and Armaments Command in Warren, MI. He also brings field experience from numerous command positions including the 45th Corps Support Group (Forward), U.S. Army Pacific Command, Schofield Barracks, HI. I am looking forward to gaining knowledge 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 LTG Thompson Godspeed as he begins his journey as our MILDEP and DACM. Together, along with our workforce, we will continue to resoundingly answer our Nation's call to duty — with boots on the ground — serving our Soldiers with courage, professionalism and compassion as they stand in harm's way while fighting the global war on terrorism.

***Defense Acquisition Workforce Improvement Act (DAWIA)* Update**

Over the past several months, significant changes to *DAWIA* have brought policy modifications that you need to be aware of. I would like to clarify these changes and outline the work under consideration.

With significant amendments to *DAWIA* during FYs 04 and 05, it is now commonly referred to as *DAWIA* II. The amendments establish a single Defense Acquisition Corps, streamline obsolete or outdated provisions and provide greater management flexibilities for strengthening the professional acquisition workforce now and in the future. Additionally, an integrated management structure was created to implement policy guidelines and oversee acquisition workforce professional development, education, training and career management. This structure also features a Senior Steering Board (SSB) whose members include Service Acquisition Executives and is chaired by the Under Secretary of Defense for Acquisition, Technology and Logistics. This management structure's working body is the Workforce Management Group (WMG), which is chaired by the Defense Acquisition University president and includes the service's Defense Acquisition Career Management leaders as its members. The WMG provides advice and recommendations to the SSB.

The current acquisition workforce focus is on critical acquisition positions (CAPs) and key leadership positions (KLPs). CAPs are not new, but the latest *DAWIA* requirements have significantly changed their designation. There is no longer a grade requirement for civilian CAPs. However, grade requirements for military acquisition positions remain unchanged, requiring all positions at the rank of lieutenant colonel and above to be designated as CAPs. Currently, there are approximately 9,000 GS-14 and above and military acquisition positions designated as CAPs.

Because of *DAWIA* changes, I am reviewing these positions and considering designating all acquisition General Officer (GO), Senior Executive Service (SES) and centrally selected list (CSL) positions as CAPs. Additionally, my proposal will include all GS-14 and GS-15 supervisor positions and GS-14 and above positions with significant acquisition authority or responsibility. With this change in CAP designations, the total number of designated CAPs should drop to just under 5,000 positions.

KLPs, a subset of CAPs, have been established to identify positions requiring special Army Acquisition Executive (AAE) and Defense Acquisition Executive attention with regard to qualifications, accountability and position tenure. KLPs require a significant level of responsibility and authority and are integral to the success of a program or effort. The Army is reviewing all key acquisition positions for potential KLP designation.

Currently, U.S. Army Acquisition Corps (AAC) KLPs include AAC GOs and SES acquisition civilians, program executive officers (PEOs), deputy PEOs, program managers and their deputies, senior contracting officials and centrally selected project and product managers (PMs), including deputy project managers of all Acquisition Category I and II programs. The AAE may designate other positions as KLPs as deemed appropriate. I want to ensure that there is good KLP representation from each functional area. KLPs may also include selected staff positions as well as any CAP that, by the criticality of duties, warrants special management attention to qualification

and tenure requirements. The Army KLP list continues to be a work in progress. When we have completed our efforts, the number of KLPs will likely total 400-500 positions. When the final designations take place, I will send out a memo to the workforce to keep everyone informed.

For more information regarding the Army's *DAWIA* implementation, please go to **http://asc.army.mil/info/dawia/default.cfm**. As additional acquisition career management policies are developed and/or updated, they will be distributed to the field and posted on the U.S. Army Acquisition Center Support Center (USAASC) Web site.

DCMA Key Billet Director Pilot Program

In July 2006, I signed a Memorandum of Agreement with the Defense Contract Management Agency (DCMA) to start a pilot program for selecting the best-qualified (BQ) candidates from both the military and civilian workforce for acquisition key billet director CSL positions. The program's goal is to align DCMA's BQ selection process with the Army acquisition PM selection process that allows Army civilians to compete on equal footing with their military counterparts on acquisition positions identified as BQ. This pilot program is a head-to-head competition with the best individuals being selected for two pilot positions at DCMA offices in Sealy, TX, and Minneapolis, MN. This is the first time all DOD civilians working for DCMA will have an opportunity to compete for key billet director CSL positions. Previously, competition was open only to the uniformed acquisition professionals. When we first created the pilot program, our intention was to open it only to Army and DCMA civilians. But when we had our plan legally reviewed by the Office of the General Counsel, they informed us that if we wanted the DCMA civilians to compete for these positions, it must be open to representatives from all services. This changed a good plan to a great one. USAASC Program Structures Division Chief Wanda Meisner agrees. "We really believe in this program. If we truly want to find the BQ individual, it should be opened to all services, wherein, the BQ individual will come out on top."

By opening the pilot program to all DOD civilians, other services' workforces now have the opportunity to apply for "command" positions. Also, it's good for Army acquisition because we will be getting the best and the brightest from throughout DOD, and if a civilian from another service competes and is selected, she/he will become an Army acquisition civilian. I see this program as a giant leap for us in the acquisition career development field and another opportunity for our workforce to give even better service to our warfighters.

"Five people have qualified, three of whom are from other services," said Cathy Johnston, Human Resources (HR) Specialist at the Army HR Command. "Acquisition is the only Army career field that competes civilians head-to-head with the military. I would like to see it [the pilot program] expand so that all of our [acquisition] positions are considered DOD-wide," Johnston offered.

Competitive Development Group (CDG)

If your goal is to become a PM, the CDG is a good place to start your journey. This 3-year program provides leadership training, professional development and the practical experience needed to successfully compete for PM positions. Also, it's one of the biggest tools used by acquisition leaders to find potential PMs. As with every goal, individuals wanting to become PMs must actively manage their careers. The most logical place to start your quest would be to work in a PEO or as an assistant PM. It takes a certain kind of a person to be a PM and encompasses hard work with the responsibility for cost, schedule and performance. It also takes motivation to ensure that you're tracking in the right positions and gaining adequate experience, education and training to be competitive, so when you go in front of the CSL Key Billet PM/Director Selection Board, you have gained the necessary tools to succeed.

There are many opportunities in place for you to get the cross-functional training needed to become a PM. I believe you need a "calling" to be a PM, and it's ultimately up to you to author your own success to achieve your goal. For more information on the DCMA BQ pilot program or CDG program, contact Wanda Meisner at **wanda.meisner@us.army.mil**, (703) 805-1025/DSN 655-1025, or Cathy Johnston at **cathy.johnston@us.army.mil**, (703) 325-2764/DSN 221-2764.

Noncommissioned Officer (NCO) Acquisition Workforce Program

The AAC, in conjunction with the Quartermaster (QM) Branch, created the NCO Acquisition Workforce Program, which allows QM NCOs in Military Occupational Specialty (MOS) 92A to voluntarily participate in the contracting program. Additionally, it clearly identifies the Army's need for enlisted Soldiers during contingency contracting operations. In support of Army Modular Transformation, we participated in a force design update to create a new modular contingency contracting force structure defining and formalizing the Army's requirements for contracting NCOs. These positions will be in contracting support brigades/principal assistants responsible for contracting offices, contingency

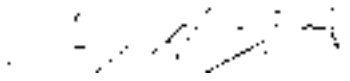
contracting battalions, senior contingency contracting teams and contingency contracting teams. These Table of Organization and Equipment units will be stationed worldwide and in every state and U.S. territory. The active force will be stationed at more than 30 different bases.

In addition to the force design update package, we simultaneously created an MOS classification structure proposal for contracting NCOs. The new contracting MOS 51C series for NCOs will be in the Active, National Guard and Reserve Components. The development and approval of a contracting MOS was the key component of the new modular contingency contracting force structure.

As a bridging strategy to the new modular contracting force structure, USAASC and the QM Enlisted Management Branch are filling the new modular contracting structure with NCOs from the workforce program. Additionally, we have selected some of those NCOs to be part of the first wave of Soldiers to reclassify into MOS 51C. After this initial reclassification, Soldiers from every Army branch will be able to request consideration for classification into MOS 51C Contracting.

For more information about the NCO Acquisition Workforce Program, contact MAJ James Bamburg at (703) 805-2732/DSN 655-2732 or **james.bamburg@us.army.mil**.

In closing, I would like to wish the acquisition workforce a very prosperous and successful 2007. I'm looking forward to your continued professionalism, sacrifices and strong sense of duty in supporting our warfighters as they strive to make the world a better, safer and more peaceful place. Thanks for your unconditional support. I am extremely proud to serve with you.



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

Financial Management — External

COL John D. Burke

Project managers (PMs) who aren't managing their money aren't managing their programs. The long-term success of a program requires impeccable integrity and, in the case of financial management, the program office should seek nothing short of the best reputation.

Government programs are financed through a starting checkbook balance each fiscal year provided through congressional appropriation. Through the legal authorization, funds flow vertically to the Office of the Secretary of Defense (OSD), the Army, the Program Executive Office (PEO) and, eventually, to the project and into specific budget lines. PMs are beholden to each of these levels for the integrity of their budget and program execution, as the approved budget is a de-facto contract for a certain performance over the funding period.

This article is the first of two on program financial management. Using the internal and external views, I will discuss how outside agencies and other factors affect a program's business processes. The second article in an upcoming edition of *Army AL&T* Magazine will be concerned with the internal management of program resources.

The AH-64 Apache helicopter has earned an enviable reputation as a positive attitude program because of its battle record in combat and its affordability and reliability as an aviation weapons platform. Here, Soldiers from Delta Co., 1st Battalion, 101st Aviation Regiment, perform maintenance on an AH-64D Apache at Contingency Operating Base Speicher, Iraq. (U.S. Army photo by Alfred Johnson, 55th Signal Co. (Combat Camera).)

The SINCGARS radio program is a shining example of PMs effectively combining positive program attitude with efficient production. Here, a U.S. Army Reservist with the 321st Psychological Co., Cleveland, OH, prepares his SINCGARS radio for field use. (U.S. Army photo by SSG Jim Downen Jr., Michigan Army National Guard.)

My previous article on practical project management (*Army AL&T* Magazine, January-March 2006) described ideas on project leadership. Similarly, a strategy and program plan of three to five years should have the equivalent for financial management. The program's financial plan may be in several dimensions and three are offered below. What is important is how the program will be perceived vertically by the fiscal and programmatic chain of command.

Selecting or Determining a Program Financial Strategy

A PM may choose a program management approach as being the *most efficient user* or best value of Army funds measured by return on investment (i.e., products divided by dollars). This technique uses the idea that the department (DOD or Army) will fund and continue to invest in the lowest-cost, highest-productivity programs because the demand is increasing. Your program becomes the Toyota Camry or Honda Accord of defense program management.

Another approach is to spend the available fiscal resources until funds expire and then request the benefactor (chief sponsor) to find more money to *finish the job*. This is similar to a college student using a year's worth of allotted money and in the third quarter asking his or her parents for more money to finish out the year; the student knows finishing the college degree is the sponsor's strong desire.

A third alternative, especially for very large acquisition category (ACAT) 1 programs, is the approach of using the *weight and political influence of industry* to fight for budget at the OSD and congressional levels. The political influence strategy explicitly depends on a long-standing mutual agreement between the government and industry to work all elements of the program in lock-step from requirements, program planning, service Program Objective Memorandum (POM) build, and congressional influence and language.

These three strategies can be done singularly or in combination. I recommend the first — becoming the best-value and most efficient user of the department's funds. The main financial question a PM should ask is, "What strategy do I plan to employ or what strategy seems to already be in place?" Determining which approach will work best will strongly depend on deciding how to assess and adjust the program's financial attitude.

Assessing the Program's Heading and Attitude

An aircraft flight profile is measured in six degrees of freedom, one being the aircraft attitude (nose-up or nose-down). Similarly, a PM can also assess a program's attitude in three ways: positive, neutral or negative.

A *positive attitude* program is characterized by a broad constituency of users, leaders and public perception, including Congress, where there is known pent-up demand for the product. One could say a program with positive attitude is on the *offense*. Another indicator is the inflow of new uses and applications, new users and perhaps other services' requests to join the program. Being a politically favored program over the long term has the advantage of being able to exercise latitude in adding or aligning requirements resulting in a positive inflow of funds. Other organizations will volunteer to co-fund initiatives. The PM's goal is to determine how to preserve the positive interest through multiple budget cycles.

Neutral attitude (straight and level flight) programs are those in balance of cost, schedule, production, sustainment and product improvement. The PM's first challenge is to keep a smooth running project from turning a neutral attitude into a negative program attitude. This can happen insidiously by letting cost increase to the point where product quantity decreases and, in turn, drives up the average unit cost. The upside challenge is for the PM to prudently add product improvements or cost-reduction initiatives, turning the nose up and setting a path toward positive attitude.

Programs in *negative attitude* have the toughest time preserving their funding. These programs are on the *defense*. A cynical phrase in the Pentagon is that "no ACAT 1 program stays fully funded two years in a row." Falling out of favor can happen for pragmatic or emotional reasons. These reasons include losing

The *weight and political influence of industry* strategy lines up best with very large defense programs of which the M1 Abrams is a part. Here, 11th Armored Cavalry Regiment Soldiers unload and stage an M1A1 Abrams tank for combat operations at Camp Ramadi, Iraq. (U.S. Marine Corps photo by CPL Richard A. Hilario, 3d Marine Air Wing.)

the program champion, core technologies failing to mature and experiencing major changes in requirements. In addition, if the program timeline stretches out too much as alternative solutions become available, it causes a reexamination of the program's overall benefit. A program is in financial negative attitude when it has to keep "going to the well" to either OSD or Congress for financial protection.

Aligning Program Strategy and Its Attitude

The three examples of program strategy techniques, combined with an assessment of the program attitude, enable a way to check the alignment of both toward success.

A *most efficient user* strategy works best with the positive attitude, enabling the PM to gain a trusted relationship with the department. The PM is meeting or exceeding the contract established in the program budget submission and likely being given more funds to produce more output. The combination of efficiency with a neutral attitude indicates a situation where you are the low-cost producer, perhaps within DOD.

The *finish the job* strategy works with a positive program attitude if your champions will continue to use their influence to help obtain funding or protect the program during schedule or cost adjustments. Unfortunately, when your champions leave, the leverage to finish the job disappears too. Even with a strong champion, the goodwill runs out after a couple years of shake-downs with the fiscal reputation ceasing as well.

The *weight and political influence of industry* strategy lines up best with very large defense programs with hundreds of billions of dollars. Add to the size of the program budget the dozens of key subcontractors and a program has the leverage of industry to bolster congressional support. This strategy balances congressional influence and the negative press, investigations and Government Accountability Office (GAO) reports that always accompany the largest defense programs. Neutral attitude programs under long-standing production contracts may take this approach to expand business base.

PMs should set their sights on the combination of a positive program attitude and being the most efficient product producers. Evidence of success using this combination is seen in program examples such as the Black Hawk and Apache helicopters, the F-16 fighter aircraft, Single Channel Ground and Airborne Radio Signal (SINCGARS) radio, the M1 Abrams Main Battle Tank and the Army Unmanned Aircraft Systems programs.

External Financial Metrics and Recurring Reports

PMs should conduct a financial intelligence preparation of the battlefield (IPB). The sources for the IPB are external reviewers, auditors, congressional budget marks, formal queries and reports on their program. This reference book has to exist, otherwise the PM is dependent upon the project office to have the institutional knowledge to answer inquiries made by professional staff with years of history and experience.

The IPB financial book should contain:

- The three previous years' program Procurement and Research, Development and Test and Evaluation (RDT&E) form (P and R Forms) charts, available from the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT). PMs should analyze trends in the congressional marks and read the published formal inquiries predating those marks.
- Information that is free of congressionally restrictive language and requests for DOD or service reports on the program. An example would be, "By 1 February the Secretary of Defense shall provide to Congress a report on the unit cost increases of program X."
- GAO, DOD Inspector General (IG), Cost Analysis Improvement Group (CAIG) and Army Audit Agency reports on the program.
- Reports or articles by Federally Funded Research and Development Centers, such as RAND or MITRE Corps., prepared by direction of the Army or OSD.

The PM should convene a focus group *led by the* PM including the program office business division leadership, contracting officer, representatives from the Army Budget Office, Assistant Secretary of the Army for Financial Management,

ASAALT systems coordinators, G-8 and G-3. If a specialized program, the PM should add the sponsoring activity, such as an intelligence program where the G-2 is the chief proponent. This focus group's purpose is to understand and timeline the key measurements and to provide program financial assessments. Some examples are:

- When are initial, midyear and end-of-year reviews?
- How are obligation and disbursement rates assessed? What are the HQDA goals for the fiscal year by month? What is our plan to get ahead of those goals?
- What reports are due to OSD and Congress this year on the program? Who and how will those reports be prepared and what program input will we be providing?
- What are the POM and Army congressional engagement cycle key dates?
- How did the program finish up the previous two fiscal years? Has the program experienced a positive, neutral or negative attitude? Who are the champions and who are the disadvocates?

Building the Project Financial Statements

Using the above financial IPB and information gathering, the PM, in combination with the business division chief, contracting officer and product managers, should be able to build a synchronization matrix for the next two to three fiscal years.

The synchronization matrix should show the key program financial events by event and time, and by product and type of funds — such as Other Procurement, Army; Aviation Procurement, Army; RDT&E; Operations and Maintenance, Army; science and technology; or global war on terrorism. It should also indicate when those funds by amount are expected to be infused into the program. This will now be the basis for financial anticipation.

The Army's Unmanned Aircraft Systems programs are a good example of combined positive program attitude and efficient production. Here, Soldiers from 2nd Battalion, 7th Infantry Regiment, 3rd Infantry Division, prepare a Raven for a surveillance flight near Tikrit, Iraq. (U.S. Army photo by PFC Matthew Acosta.)

More rows should be added to include the congressional engagement calendar, OSD- and Army-required reports, OSD and Army formal reviews, key program assessment dates (initial, midyear and end of year) by the various agencies and historical inquiries by the CAIG, GAO, DOD IG and others. Even if these dates are later moved, you'll have those identified and can anticipate their occurrence.

Lastly, I recommend the PM direct the business division to prepare a cash-flow statement for the project office beginning with the end of last fiscal year's balance, the 1st quarter appropriations, the expected 2nd through 4th quarter inflows, and the month-by-month outflows of the program funds based on the contracts and delivery schedules (*DD Form 250*). The cash-flow statement should reflect, over the 12-month fiscal year, the execution of the synchronization matrix.

A test of the cash-flow statement will also be a check and balance of whether the program is either deliberately or by default using a certain program strategy and will assess its program attitude. For example, if we received two midyear additions for 50 systems and $100 million because of a new user request with unit cost dropping, then the program is a *most efficient user — positive attitude program*.

External Financial Management Sets the Internal Operating Functions

Army PEOs and PMs are chartered by the Army Acquisition Executive (AAE). Through the charter, they are responsible to the AAE, and perhaps OSD, with congressional oversight. Having a thorough understanding of the external influences, timelines and interests of those higher-level agencies sets the stage for the program's operation.

A PM with a long-term view must understand and acknowledge or change the program's financial strategy and attitude. A mismatch of strategy to attitude will initially result in loss of funds and eventually cause the program to fall into disfavor. The PM is charged with the responsibility to ensure proper alignment of strategy and attitude toward the project's success. Creating a program financial IPB and synchronization matrix illustrates the external factors affecting the program, so the PM can notify the external chain of command where adjustments should be made.

A program with a harmonized strategy and attitude, combined with a synchronized and executable plan, will earn the

program office the desired reputation for integrity and financial acumen all the way up the chain of command.

COL JOHN D. BURKE *serves as the Deputy Director Army Aviation and concurrently as the Director, Unmanned Systems Integration, Army G-3/-5/-7, HQDA. He has served as a centrally selected project and product manager in aviation and battle command programs since 1987.*

Managing Customer Requirements for Services and Skilled Personnel

Harlan Black

In my previous article (*Army AL&T* Magazine, October-December 2006, Page 75), I presented the approach the Communications-Electronics Life Cycle Management Command's (CELCMC's) Software Engineering Center (SEC) is taking to incorporate best business practices through Lean Six Sigma (LSS) and the Capability Maturity Model Integration® (CMMI). I discussed Requirements Management (REQM) and presented its goals and specific practices. I then presented resolutions of issues that surfaced as people in SEC began writing REQM plans for projects that provided *products* for their customers. This article will discuss REQM planning for providing customers with *services and skilled personnel*. I will conclude this article by explaining the relationship between CMMI and LSS.

REQM Plans for Services

Let's say ABC Corp. is developing software for the government through Program Manager (PM) XYZ. The PM wants an organization to monitor this contract for them. Again, requirements are *whats*, not *hows*. Here the organization has a customer (the PM) who wants it to provide a service, or to *do* something, not to *make* something. The organization must therefore document how it plans to do the following:

- Obtain an understanding of what the customer wants it to do.
- Obtain a commitment from the project team to do it.
- Manage changes to what must be done during the ongoing work.
- Maintain traceability from what the organization was asked to do with what it is actually doing.
- Identify and resolve inconsistencies between what must be done for both project plans and what is being done.

Note that I omitted the need for bidirectional traceability. I'll speak about this soon. Now, let's say that part of the monitoring job is to ensure that ABC implements the PM's requirements in the software that they are making. Here we have some requirements. Do they need to be managed? Do they belong in an REQM plan? Definitely. But in whose plan?

Unless the PM asks the organization to manage these requirements, they don't belong in the REQM plan. Instead, they belong in the contractor's REQM plan because it is the contractor who is implementing these requirements in the software that it is making for the customer. Now, if the contractor's REQM plan is a contract deliverable, then the organization will be evaluating the plan as part of what it is supposed to be doing. However, if it's not a deliverable and if the ABC contract does not specify how to manage the software development effort, then the organization may never see it.

And if the organization asks the contractor to provide an REQM plan, then it is asking the customer's contractor to do something that it is not under contract to do. Guess who may get angry when it gets billed for a document that its contractor wrote? Now let's assume that the organization has a standing operating procedure (SOP) document that describes how one should monitor a customer's contract. It talks about things like forming a monitoring team, the ratio of team leaders to members, a management hierarchy and frequency of team meetings. Does the SOP belong in the organization's REQM plan?

Again, remember that a requirement is a *what*. The *what* is to monitor a contract. Ensuring that the contractor implements customer requirements is part of monitoring the contract. This sounds more like a *what* rather than a *how*. Certainly, the SOP

The CELCMC SEC is using LSS to identify and eliminate waste, while also reducing variances in production. Likewise, the SEC is using CMMI to define process areas and define the corresponding goals for each process area. (*Army AL&T* Magazine stock photo.)

belongs in the organization's REQM plan if the PM identified it to be followed, just like we said earlier about the coding guidebook. But does it have to be in the organization's REQM plan if the PM didn't specify how to monitor the contract?

Let's take a second look at a service project. Are customers interested in their supplier being busy doing something or are they really interested in the effect that will be produced? I suggest the latter, even if the customer is billed for time and materials. Let's look at another example to see how this makes a difference. Let's say that you are having your house painted. Ajax Painting Inc. shows up at the door, gives you its song and dance, and asks you to sign a contract. It has a blank area where they fill in your address. It has another blank area where it describes the work they will do. The salesman fills it in with the following: "Ajax Painting Inc. will paint the above-mentioned house for the price of $3,000, payable upon completion." Ready to sign? No way! How many coats will they put on? With what quality paint? Are they going to clean and prime the surfaces before applying the paint? Can they let paint get on the glass of your windows? Will they clean up afterwards? This Ajax contract lacks sufficient clarification. You rightfully complain, and the salesman asks whether he can come back tomorrow with a better contract. He shows up the next day with a handtruck full of documents. He has everything possible that can be documented. Sure thing, the number of coats are specified, the paint brand, a substitute in case it's not available and a substitute for the substitute. And it contains the procedures you are expected to support in case his employee gets stung by a hornet. So part of the contract reads that you must allow the painter to use your phone to call for medical assistance, should he need to. You decide to look for another painter.

Now let's get back to the contract monitoring SOP. If it's not in the agreement that was made with the customer, then it's actually not the customer's requirement. Instead, it's the supplier's way of clarifying what the customer's requirement means. Indeed, some of the things in the SOP may have belonged in the agreement, and the experienced customer would have written them in. But at least some of whatever is in the SOP but not in the contract can be viewed as being a clarification of the *what*. Unlike design documents for software products, most of what is in the SOP has direct significance to the customer. It's therefore a good idea for suppliers to reference the SOP in their REQM plan. The more clarification provided in the plan, the higher its quality will be.

The author contends that it makes sense for service-related projects to mandate a one-way checklist from customer requirements to actual work completed. (*Army AL&T* Magazine stock photo.)

Now remember that we did not include the need for bidirectional traceability for services. This makes sense because the requirements are fulfilled by activities, and they are not always tangible "things." If we needed to trace everything that was done back to customer requirements, then how and where would we maintain the list of activities that we did? Should we require all service practitioners to keep a diary and trace every line backwards to customer requirements? Perhaps one would suggest that it belongs on the customer's bill. Frankly, if we start documenting every activity on customer bills, then we may lose customers who don't appreciate receiving a truckload of paper every time we ask them for money. So, it makes sense to mandate a one-way checklist, from customer requirements to work done. Indeed, this is all that we require for service-related projects.

REQM Plans for Providing Skilled Personnel

Finally, an organization may provide customers with professionals who have certain skills and experience. This can be viewed as a special case of a service, as customers are asking their suppliers to hire and support personnel. Or, this can be viewed as an entirely new category, somewhat of a hybrid between a product and a service. Regardless of how this is classified, the *what* is a person who meets the specified skill requirements and has the required experience that the customer asks for. It is also the support services that will be provided. Typically, these are the only customer requirements that must be managed. Now, let's say that the customer needs an engineer to help develop software. Does the engineer need to write an REQM plan for managing the customer's software development process requirements? The answer is that it's entirely up to the customer. The customer owns the process for the software development effort, not the organization that provides personnel.

Managers may designate a project as either a product or service. However, the project's requirements must meet customer needs. (*Army AL&T* Magazine stock photo.)

As stated earlier, an organization can only be expected to manage the requirements of processes that it owns and controls. The engineer should certainly suggest to the customer that this be done as a best practice. However, this is the extent of the supplier's involvement with respect to managing requirements within the customer's own development shop, unless tasked by the customer to do otherwise. The organization must document how it plans to do the following:

- Obtain an understanding of type of personnel the customer wants and the support that is required for the personnel.
- Obtain a commitment from the personnel and its support team that they can perform the work.
- Manage changes to customer personnel and support needs during the ongoing work.
- Maintain traceability from personnel and support requirements to personnel assignments and provided support.
- Identify and resolve inconsistencies between customer personnel and support requirements to project plans and personnel assignments/support.

Is It a Product or Service?

Managers may designate a project to be a product or service. However, one must manage requirements according to customer needs, not management designations. Does the customer want requirements to be transformed into a tangible "thing" that is the main deliverable? This sounds like a product.

Note that the supplier will need to do things to provide the product. As stated earlier, unless the customer asked for them to be done, they are not customer requirements that need to be in an REQM plan, although they may belong in another type of plan. Furthermore, the supplier may be asked to perform some services that are associated with the product, such as to install the software that is being made. So while the overall project can be classified as a product, it may contain some service requirements that must be managed.

Now, what if the customer is basically interested in having an effect, such as his house should be painted in a timely and high-quality manner? This sounds like it should be classified as a service. After all, one pays someone to have a house painted, not simply to have paint. Here's a third possibility. The Sherwin-Williams Paint Co. goes into the business of painting houses. They provide not only the effect that the customer wants but also the product that makes it happen. Our organization has an entire directorate that does something like this for a class of Army software. They prefer to view their projects as products/services.

Connecting CMMI and LSS

The SEC is using both CMMI and LSS to improve its processes. CMMI defines process areas and the goals for each process area. It also suggests specific and generic practices for achieving them. For example, here are the process areas at Level Two:

- REQM
- Project planning
- Project monitoring and control
- Supplier agreement management
- Measurement and analysis
- Process and product quality assurance
- Configuration management

Keep in mind that LSS is the application of techniques to identify and eliminate waste and to reduce variance in production. It is the *how* of a high-level requirement, which is to provide better products and services both faster and cheaper.

While CMMI is also a *how* of the better-faster-cheaper requirement, it is also a *what* at the implementation level because it specifies the minimum of that which needs to be done. At the implementation level, LSS becomes the *how* for that which needs to be done. Our organization began putting the above into practice by first using CMMI to redefine its processes. With processes that are now infused by industry's best practices for software engineering support, we are coming up to speed in LSS to optimize them.

***HARLAN BLACK** is the REQM Process Owner for CELCMC's SEC. He is a computer scientist and holds a B.A. in mathematics from Loyola College, an M.S. in computer science from Atlanta University and an M.A. in education from Johns Hopkins University. He is also an LSS Black Belt candidate. Black is an Army Acquisition Corps member and is Level III certified in systems planning, research, development and engineering.*

Contracting Community Highlights

This issue's feature article highlights an Army test of a new concept for provision of installation municipal services. The pilot program for purchase of certain municipal services for Army installations, authorized by *Public Law No. 108-375, Section 325*, is being tested at Fort Gordon, GA, in an agreement between the installation and the city of Augusta, GA. Developed by the Army Contracting Agency-Southern Region, the pilot program's purpose, one of two in CONUS, is to evaluate the effectiveness of procuring services from local municipalities, rather than providing them with Army water treatment plants, thereby reducing overall installation management costs.

In addition to the feature article and the regular *DAR* Council Corner, we provide a number of significant news stories from our contracting organizations, including the success story for performance-based contracting and the announcement of the second class for the Senior Leadership Development Program.

We appreciate support from the field in providing material for publication, and we hope you are finding the submissions informative and interesting. For more information, contact Emily Clarke at (703) 696-1675/DSN 426-1675 or **emily.clarke@hqda.army.mil**.

Ms. Tina Ballard
Deputy Assistant Secretary of the Army
(Policy and Procurement)

Fort Gordon DOC Partners With Community

Ken Mason

The Army Contracting Agency-Southern Region (ACA-SR) Fort Gordon, GA, Directorate of Contracting (DOC) has entered into a contractual agreement with Augusta, GA, for water and wastewater services, under the authority of *Public Law No. 108-375, Section 325, Pilot Program for Purchase of Certain Municipal Services for Army Installations*. Under this public law, the Army will be able to close its water and wastewater treatment plants, thereby negating the requirement for expensive capital improvements and personnel costs associated with running these plants in the future. Fort Gordon was one of two installations selected by the Army for this pilot program. Water and wastewater services will be provided by Augusta using its water infrastructure.

Fort Gordon Garrison Commander COL John Holowick and Augusta Mayor Deke Copenhaver sign the MOA between Fort Gordon and the City of Augusta last September. (Photo courtesy of Tammy Moehlmar.)

The Fort Gordon DOC partnered with the city using alpha contracting procedures to reach an estimated $18.7 million contract agreement through Sept. 30, 2010. The contract allows for 6 additional years if legislative authority is extended to 2016, which could take the contract total value to an estimated $36.5 million. A Memorandum of Agreement (MOA) was signed by Augusta Mayor Deke Copenhaver and Fort Gordon Garrison Commander COL John Holowick at a ceremony on Sept. 28, 2006, at Fort Gordon. The ceremony was attended by DOC personnel, garrison staff, city commissioners and press representatives from the Fort Gordon and Augusta communities.

Left to right: Contract Specialist Barbara Mason, Augusta Mayor Deke Copenhaver, Contracting Officer Ken Mason and Contract Specialist Helen (Jo) Berns pose for a photo after signing the MOA partnering Fort Gordon with the City of Augusta for water and wastewater services. (Photo courtesy of Tammy Moehlmar.)

Congratulations to the Fort Gordon contracting team, Contracting Officer Ken Mason and Contract Specialists Barbara Mason and Jo Berns for contributing to this important partnership.

Ken Mason is the ACA-SR Fort Gordon DOC Contracting Officer. He can be reached at (706) 791-1810/DSN 780-1810 or ***joel.k.mason@us.army.mil****.*

ACA-SR Assists FORSCOM FLRC With Contracting Support

In the fall of 2005, the U.S. Army Contracting Agency Southern-Region (ACA-SR) Contracting Center East, worked with the U.S. Army Forces Command (FORSCOM) Logistics Readiness Center (FLRC) at Fort Stewart, GA, to acquire logistics support services. FLRC had long been supported by a nonperformance-based acquisition and was facing numerous challenges including the Army resource constraints and workload fluctuations attributable to the war effort. FLRC was also identifying the standard levels of service that it would offer its clients. To meet these challenges, Contracting Officer Daryll Nottingham and Contract Specialist Faith Shelton structured and solicited a Statement of Objectives providing competing contractors the flexibility to craft an innovative solution that met mission support requirements and also provided the flexibility and accountability to address the current environment. Contractors were required to offer their solutions and suggest incentives that would be used as part of the Performance Requirements Summary enforcement. The resulting award included a Performance Work Statement and Performance Requirements Summary that clearly identified requirements and performance expectations and incentives to ensure adherence. Over the past year, FLRC Manager David Grass has seen marked improvement in contract performance, timeliness and quality, and has had to exercise negative incentives on just two occasions. "This is working great, we should have converted to this approach long ago," Grass remarked.

For more information, contact Daryll Nottingham at (404) 464-0453/DSN 367-0453 or **daryll.nottingham@forscom.army.mil**.

ASC Awards GPMSS Contracts

Steve Herman

On June 30, 2006, the U.S. Army Sustainment Command (ASC) awarded two indefinite delivery indefinite quantity (IDIQ) contracts for Global Property Management Support Services (GPMSS) with a base year and four option years to Dimension International Inc. and ManTech Telecommunications and Information Systems. These labor-hour contracts total an estimated value of $375 million per contract over 5 years with a maximum of $75 million per year per contract. These contracts provide worldwide property management services for the accountability and visibility of government property in theater and CONUS locations. This mission allows the government to establish accountability of theater-provided equipment totaling more than $6 billion, clearing the battlefield of excess stock at forward unit locations. Also, they facilitate the property management and accountability of the U.S. Army Forces Command CONUS mission requirements, such as left-behind equipment while units are deployed to theater.

These property management support contracts were a result of ASC's issuance of a multiple award IDIQ best-value solicitation for GPMSS. Before this solicitation, the contracting office developed an acquisition strategy that would accommodate constantly evolving requirements and address a consolidation issue, since existing contracts were filling several mission requirements. A best-value solicitation was developed that identified the following evaluation factors:

- Past performance
- Technical/management
- Cost
- Small business utilization

Offerors were told the government would award two IDIQ contracts with two to three initial follow-on task orders and that they were required to submit proposals for both *Operations Enduring* and *Iraqi Freedom (OEF/OIF)* missions and the CONUS predeployment training equipment (PDTE) mission. Offerors were also asked to submit the PDTE proposal with and without a reports coordinator.

Discussions were opened after the initial evaluation, and because of a constantly evolving mission, a number of solicitation amendments were issued. After addressing all issues, discussions were closed and final revised proposals were submitted. Following evaluation of the offers, the Source Selection Authority Decision Document selected a single contractor to receive both the *OEF/OIF* and PDTE missions under an IDIQ contract, thus requiring the government to award a second IDIQ contract to the second best-value offeror of the *OEF/OIF* mission and a reports coordinator task order.

For more information, contact Kay Stromer, ASC Procurement Analyst, at (309) 782-3941/DSN 793-3941 or **kathleen.stromer@us.army.mil**.

Steve Herman is the ASC Acquisition Center's Lean Six Sigma Advocate. He can be reached at (309) 782-6091 or ***steve.herman@us.army.mil****.*

Senior Leadership Development Program Begins Second Session

Kimberly Buehler and Christine Rimestad

With nearly two-thirds of the Army's contracting workforce eligible for retirement over the next five years, leader development is critical and one of the hottest topics in human resource planning. Developing a cadre of trained and ready professionals to assume key leadership positions is an integral component of maintaining the Army's strategic readiness. To meet this need, the Deputy Assistant Secretary of the Army for Policy and Procurement (DASA(P&P)), the Office of Procurement Policy and Support, and the Contracting Career Program Office (CPPO) partnered with the Office of Personnel Management's Federal Executive Institute (FEI) to develop the Senior Leadership Development Program (SLDP). This 18-month program targets Army contracting professionals in grades GS-14/15 or NH-IV. The program has competitively selected 11 contracting managers to participate in the second SLDP session that began Sept. 20, 2006.

SLDP participant leadership competencies are forged through an ongoing cycle of assessment, challenging work assignments and numerous individual and group learning opportunities. (*Army AL&T* Magazine stock photo.)

The SLDP curriculum focuses on developing core leadership competencies, alternates learning between the classroom and the broader world outside and is customized to each student's professional development needs. The program also includes a unique, focused training element that examines Army acquisition and contracting issues as a complement to the leadership program.

The SLDP rests on the premise that values-based leadership is essential in a democratic society, and it draws on the latest research in leadership development. The research shows that leadership competencies are best enhanced through an ongoing cycle of assessment, challenging work assignments and learning opportunities, as well as support from mentors and coaches in the workplace. The research also demonstrates the power of mixed learning methods, such as reading, case studies, role playing, simulations and field experiences, in fostering leadership learning.

The SLDP's classroom component periodically brings students together for formal instruction and interagency learning at FEI's campus in Charlottesville, VA, and at other locations in Washington, DC. After the initial program orientation, students participate in a leadership assessment experience, a strategic leadership seminar, a focused skills seminar, individual learning classes and guest speaker seminars.

Another significant program component is that each SLDP participant will have an assigned mentor. Mentors represent Senior Executive Service members and General Officers serving within DOD. FEI conducts formal training for the mentors that establishes a common understanding about program goals, expectations and requirements.

Learning activities outside the classroom involve a mix of individual and small-group work. The on-the-job component includes a mentor, a faculty coach, developmental assignments, team projects, leadership forums, field experiences, focused reading and Web-based learning opportunities. Students work closely with their mentors and FEI's leadership

The SLDP experience includes, among others, strategic leadership and focused skills seminars. (*Army AL&T* Magazine stock photo.)

coaches to develop and track progress against their specific Leadership Development Plan, which requires students to identify goals, formulate strategies to overcome challenges and recognize personal strengths and barriers to individual leadership growth.

The SLDP prepares graduates for Army senior executive positions. After completing all classroom assignments/courses and on-the-job training, each student prepares a written leadership philosophy statement that articulates his or her personal leadership philosophy. Students graduate from the SLDP with a fully developed philosophy — and toolkit — of how they will leverage their individual business acumen and communication skills to lead people, projects, programs and organizations. SLDP graduates will have demonstrated that they possess the advanced skills needed to serve in the executive-level positions for which they are expected to compete and help the contracting community achieve operational mission success.

Each SLDP participant will have an assigned mentor, someone who understands program goals, expectations and training/professional development requirements. (*Army AL&T* Magazine stock photo.)

The DASA(P&P) congratulates the following individuals on their selection and acceptance into the Contracting and Acquisition SLDP second session:

Elisa P. Boyer — U.S. Army Aviation and Missile Command, Redstone Arsenal, AL.

Wade C. Cole — Army Contracting Agency (ACA), Southern Region (SR), Fort Polk, LA.

Pamela A. Demeulenaere — TACOM Life Cycle Management Command (LCMC), Detroit Arsenal, MI.

Debra A. Dobbins — DASA(P&P), Arlington, VA.

Atwinette L. Goodman — ACA-SR, Fort McPherson, GA.

Kristina M. Jensen — U.S. Army Communications-Electronics LCMC Acquisition Center, Fort Monmouth, NJ.

Scott D. Kukes — ACA Headquarters, Falls Church, VA.

Cynthia R. Lee — ACA Capital District, Fort Belvoir, VA.

Pamela E. Nevels — U.S. Army Medical Research Acquisition Activity (USAMRAA), Fort Detrick, MD.

Douglas W. Packard — DASA(P&P), Iraq/Afghanistan.

Rebecca J. Tama — USAMRAA, Fort Detrick, MD.

For more information, contact Chandra Evans-Mitchell, Program Analyst, U.S. Army Acquisition Support Center (USAASC), Fort Belvoir, VA, at (703) 805-1247/DSN 655-1247 or **chandra.evansmitchell@us.army.mil**.

Kimberly Buehler is the Civilian Recruitment Programs Manager in the CCPO, USAASC. She holds a B.A. in history/secondary education from Trenton State College and an M.A. in art history from Temple University. She is Level III certified in contracting and Level I certified in program management.

Christine Rimestad is the Competitive Professional Development Program Manager in the CCPO, USAASC. She holds a B.S. in business administration from the University of Maryland and is Level III certified in contracting, Level II certified in program management and Level 1 certified in life cycle logistics.

ASC Launches Lean Six Sigma Black Belt Training

Steve Herman

The U.S. Army Sustainment Command (ASC) Acquisition Center (AC) has created a new office to support Lean Six Sigma (LSS). The George Group is providing LSS training and Master Black Belt mentoring under an ASC service contract awarded competitively on a best-value basis. Several AC personnel are participating in the training, including Dawn Sherwin who is midway through her Green Belt training. She has plans for a project to improve the internal processing of incentive and honorary awards. Steve Herman, who leads the office, has successfully completed four weeks of LSS Black Belt training and is directing a project to improve the ammunition resupply requisition process.

LSS training project team members: (left to right) Gene Harrison, Kathie Allen, Tina M. Grove and Jan Klindt. (ASC photo by Barbara Efflandt.)

Tina M. Grove and Gene Harrison have completed their Green Belt training and are leading a project to improve the internal processing of contracting officer warrant requests. While still in the early stages of their project, Harrison and Grove report that they are already seeing improvements. They are moving along in an "analyze tollgate" mode and expect to exceed their goal of reducing warrant request internal processing time from more than 20 business days to less than 10 business days. The ASC AC management fully supports the process improvement culture and is looking forward to significant savings.

For more program information, contact Kay Stromer, ASC Procurement Analyst, at (309) 782-3941/DSN 793-3941 or **kathleen.stromer@us.army.mil**.

Steve Herman is the ASC AC LSS Advocate. He can be reached at (309) 782-6091/DSN 793-6091 or ***steve.herman@us.army.mil****.*

RDECOM Employee Wins GSA Acquisition Award

Barbara A. Gerace, U.S. Army Research, Development and Engineering Command (RDECOM) Acquisition Center Contracting Specialist, has won the General Services Administration's (GSA's) 2006 Ida Ustad Award for Excellence in Acquisition.

In June 2004, Gerace led a team of contracting and technical experts in awarding a contract for improvised explosive device countermeasure system (IEDCM) production. Because of the urgency associated with fielding these units, delivery was a heavily weighted factor for award and quantity. Two months later, after onsite capability and manufacture reviews, Gerace awarded three firm-fixed price, indefinite delivery indefinite quantity contracts. This reduction in procurement lead time directly cut the time it took to provide critically needed IEDCM units to deployed Soldiers waging the global war on terrorism. Gerace's dedication and professionalism reflects her continued commitment to Soldiers' needs.

GSA Deputy Administrator David L. Bibb presents Barbara A. Gerace, RDECOM Contract Specialist, with the Ida Ustad Award for Excellence in Acquisition. (GSA photo by Michele Truman, Office of Citizen Services and Communications, Creative Services Team.)

The award was presented to Gerace by GSA Deputy Administrator David L. Bibb, during the Chief Acquisition Officers Council on Oct. 5, 2006. The award honors Ida Mae Ustad, GSA's former Deputy Associate Administrator for Acquisition Policy in the Office of Government-wide Policy, who died in 1999. Ustad earned a well-deserved reputation throughout the federal government and with private industry for providing expert acquisition and procurement advice.

Fort McPherson Industry Day

On June 15, 2006, the Army Contracting Agency, Southern Region Contracting Center (SRCC)-East, under the guidance of Contracting Officer Heven Ford, hosted an Industry Day at Fort McPherson, GA, to provide commercial contractors with the latest information on the upcoming Base Realignment and Closure (BRAC) Augmentation and Implementation Support Services (BAISS) contract. The SRCC plans to award multiple indefinite delivery indefinite quantity contracts in FY07 to service disabled veteran-owned small businesses (SDVOSB). Of the 189 vendors attending, 130 were SDVOSBs hoping to become prime contractors, and other small and large business vendors expecting to become SDVOSB team members. SRCC-East Contract Specialists Melisa Barbee, Ronnell Booker and David Carter provided presentations, including an explanation of the requirements from the perspectives of a major Army command customer (U.S. Army Forces Command) and an installation customer (Installation Management Command Southeast Region Office), initial acquisition strategy, the proposed Statement of Objectives and draft sections H, L and M of the solicitation. Services acquired under BAISS will support BRAC guidance and provide staffing to "fill the gaps" while government employees and Soldiers transition to new locations.

For more information, contact Heven Ford at (404) 464-2736/DSN 367-2736 or **fordh@forscom.army.mil**.

DAR Council Corner

Barbara Binney

***Defense Federal Acquisition Regulation Supplement (DFARS)* Procedures, Guidance and Information (PGI)**

Learn more about *DFARS* by checking out the Defense Acquisition University continuous learning module *DFARS* PGI Course 113. The PGI, a companion resource to the *DFARS*, is a Web-based tool to simply and rapidly access guidance and information relevant to *Federal Acquisition Regulation (FAR)* and *DFARS* topics. The PGI is the result of the *DFARS* Transformation chartered by the Under Secretary of Defense for Acquisition, Technology and Logistics. It contains mandatory and nonmandatory internal DOD procedures, guidance and supplemental information. This brief module presents basic information on *DFARS* PGI and takes about an hour to complete. Upon successful completion you will earn one continuous learning point. To take the course, go to **https://learn.dau.mil/html/clc/Clc.jsp**.

Emergency Acquisitions — *FAR* Case 2005-038
Revising *FAR Part 18*, this interim rule provides a single reference to acquisition flexibilities that may be used to facilitate and expedite the government's acquisition of supplies and services during emergencies. *FAR Part 18* makes no change to existing contracting policy.

***Local Community Recovery Act of 2006 — FAR* Case 2006-014**
This interim rule adds a local area set-aside, defined by the contracting officer, to the *FAR* for debris clearance, supply distribution, reconstruction and other major disasters or emergencies. The rule implements the *Local Community Recovery Act of 2006*, strengthening the government in promoting local economic recovery. The local area set-aside does not replace small business set-asides, both can be used simultaneously. The rule imposes subcontracting restrictions when a local area set-aside is used, and competition justification is not required.

***Limitations on Tiered Evaluation of Offers — DFARS* Case 2006-D009**
This interim rule amends the *DFARS* to implement *Section 816* of the *National Defense Authorization Act (NDAA) for FY06*. It requires DOD to prescribe guidance on the use of tiered evaluation of offers for contracts and task or delivery orders under contracts.

***Prohibition on Acquisition From Communist Chinese Military Companies — DFARS* Case 2006-D007**
This interim rule amends the *DFARS* to implement *Section 1211* of the *NDAA for FY06*. It prohibits DOD from acquiring U.S. munitions list items from communist Chinese military companies.

For more information, contact Barbara Binney at (703) 604-7113/DSN 664-7113 or **barbara.binney@saalt.army.mil**.

Barbara Binney works for the Office of the Deputy Assistant Secretary of the Army (Policy and Procurement) and is a DAR Council member.

ALTESS News

Acquisition, Logistics and Technology Enterprise Systems and Services (ALTESS) Introduces ABE Hub

Mark Ryan

Released Nov. 19, 2006, the Acquisition Business Enterprise (ABE) Hub is the first step for the Acquisition Information Management (AIM) system and Project Director (PD) ALTESS to transform to commercial-off-the-shelf enterprise resource planning solutions. The ABE Hub meets DOD and Army security requirements for single sign-on and DOD Public Key Infrastructure (PKI) Common Access Card (CAC), and is aligned with the Army's business transformation goals.

The ABE Hub brings Army acquisition and program lifecycle management tools to a central location by providing Army leadership and program offices one-click access to program data and reporting. It provides the acquisition domain a vehicle to review the tools used by the Acquisition, Logistics and Technology Workforce from program executive office (PEO) to PEO via each organization's portal/tab. All tools available in the ABE Hub are accessible via Army Knowledge Online (AKO) or DOD PKI login.

Current AIM users with active AIM accounts will be migrated to the ABE Hub as long as they have an active AKO user ID and password and/or DOD PKI CAC. AIM users who do not hold either of these log-in capabilities must obtain one or the other or both prior to receiving an ABE Hub account.

The need for AIM user IDs and passwords is eliminated in the ABE Hub, conveniently providing users one less user ID and password to remember and change every 60 days.

New users to the ABE Hub submit an account request after they have logged into the ABE Hub with their AKO User ID and password or CAC. Account approval is granted from organizational-based ABE Hub account managers, who are also current AIM account managers. The ABE Hub merged users' accounts with the Oracle® Collaboration Suite 10G (document, task management and Oracle projects).

For more information, please call the ALTESS Customer Support Center at (800) 981-3234.

Mark Ryan is a PD ALTESS Information Technology Specialist and Team Leader for the ABE Hub and AIM System.

Readership Survey Results

Readership Survey a Resounding Success

As many of you know, we recently conducted a readership survey to gauge the ongoing appeal of *Army AL&T* Magazine, to determine the acceptance level of recent changes to our distribution schedule, to solicit feedback on how to improve the publication and to identify topics that readers would like to see covered in 2007.

First, I would like to thank the 2,228 readers who responded to the survey. It took some time and effort to do so, and we sincerely appreciate the feedback, especially to the appeal for open-ended requests for general comments, suggestions or remarks, and for ideas regarding future articles.

Second, I want to express my gratitude for the insight, creativity and fresh perspective that each respondent brought to the table. Of the 2,081 respondents who stated that they regularly read the magazine, 91 percent rated the content of the articles as either good or excellent. While proud of that response, we did not overlook the fact that another eight percent rated the content as merely fair, and that almost one percent rated the content as poor. Nor did we fail to

recognize that even the most congratulatory respondents made substantive recommendations for how to improve the publication going forward.

My editorial team and I see it as our primary responsibility in 2007 to address as many reader concerns and recommendations as possible, and to ensure that the magazine remains informative, relevant and compelling. Given the scope of the magazine's mandate, the executive direction we receive from the Editorial Advisory Board and the variety of magazine readers who use our product, it is unlikely that we will ever meet all requirements in a single issue. Over the course of a year, however, we expect to come pretty close to meeting or exceeding most readers' expectations, so please keep coming back for more. I promise not to disappoint you!

A couple of issues reached a critical mass in reader perception. These will be the first that we address editorially:

- Differentiate more clearly between content found at **http://asc.army.mil/pubs/alt/default.cfm** and related content found elsewhere.
- Continue to communicate how individuals can receive personal subscriptions to the magazine.
- Enhance coverage of career development opportunities.
- Emphasize best business practices and leverage lessons learned — what worked and what did not.
- Incorporate end-user, from-the-field feedback and perspectives into as many stories as possible.

We also noted that, while not identified as issues, there are several areas in which we must continue to do well. These include our coverage of organizational, regulatory and strategic changes within the acquisition, logistics and technology (AL&T) community; workplace ethics; networking contacts within the organization; and training, education and professional development opportunities. Several respondents emphasized the importance of this coverage and encouraged continued or even greater attention to these topics.

You also provided us with a wealth of ideas for future content. Some of the more commonly recommended topics included:

- Anything related to new, emerging or future technologies.
- More articles on Joint AL&T programs involving the Army, our sister services and other organizations within and beyond DOD.
- Articles on Lean Six Sigma, Simplified Acquisition Procedure and other workflow project and process management tools and initiatives.
- More on medical, aviation and Corps of Engineers programs.
- More on funding, budgeting and financial management of acquisition programs, including cost/benefit analyses.
- Emergency, contingency and rapid-insertion acquisitions.
- More on streamlining contracting processes, changes to contracting and acquisition, and guidance on policy changes.
- Articles on contracting for installations and non-weapons systems.
- Articles on weapon systems, munitions and other platform technologies.
- Information technology articles, including coverage of data and information security and assurance.

Among the thousands of responses, though, was one observation that seemed to defy categorization. Perhaps that is because it managed to encompass many categories at once. In answer to the question of what you would like to see in future magazine issues, this reader encouraged us to emphasize "the relevance of the Army Acquisition Corps [AAC] to the Army." The reader went on to say that "it's inherent upon us to 'sell' the AAC to the Army so that they fully understand 'why' they need us in the fight!" This reader specified a need to promote the value of our work to the warfighters we support, to DOD as a whole, to other federal agencies and the general public. Most importantly, perhaps, we need to emphasize the importance of the work we do to ourselves.

Without ignoring several requests that we downplay the "look at me" factor and instead pursue interviews and articles that convey a more realistic perspective (a recommendation we will consider in all future reviews of articles and interviews), it remains a critical responsibility of this magazine's editorial staff to make it clear that the AAC and every member of its workforce are vital to the success of the Army's mission, both stateside and abroad, and the Army's overall transformation to a more mobile and modular force.

We will continue striving to deliver a top-quality publication every issue through fully researched, well-written, germane and informative articles, interviews, briefs and reviews. In 2007, we pledge to raise the bar even farther through execution of the constructive recommendations that we have received through this survey. Again, my thanks to every reader who responded, and to all readers who look to this magazine for pertinent, compelling information and dialog.

Michael Roddin
Editor-in-Chief

Two Army Organizations Receive Highest Acquisition Honor

Two Army project teams were recently awarded the highest honor that DOD can bestow on acquisition professionals. The Project Manager for Close Combat Systems (PM CCS) Countermeasure (CM) Flares Team and Program Executive Office (PEO) for Intelligence, Electronic Warfare and Sensors Infrared Countermeasure (IRCM) Project Office both received the David Packard Excellence in Acquisition Award. The award is presented to civilian and military organizations that have significantly contributed or have demonstrated exemplary innovations and best practices in the defense acquisition process.

The CM Flares Team was recognized for their hands-on coordination with contractors to meet the Army's accelerated demand for life-saving M211, M212 and M206 flares. In collaboration with flare producers, the team increased production capability without interrupting current production, delivery and product quality. Working with new suppliers allowed the team to increase production, eliminate single point of failures and mitigate poor production risks. By developing effective solutions and accelerating multiple contract awards, the team was able to provide a higher level of protection to our Soldiers fighting the global war on terrorism.

The IRCM team was recognized with the Packard Award for its ability to surge Common Missile Warning System (CMWS) fielding to multiple aircraft platforms in the theater of operations, regardless of geographic distance, differing aircraft types and time zones. The team performed an item-by-item analysis to determine commonality and key specific items required for each different Army aircraft type. This analysis enhanced system quantity buys and eased management of different installation kits. Installation efforts were coordinated with aircraft platform project managers and unit commanders to achieve concurrent Reset and CMWS installation.

The CM Flares Team and the IRCM team were both presented with the Packard Award during a special ceremony held at the Fort Belvoir, VA, Officer's Club on Nov. 8, 2006.

For a more detailed article on these award-winning teams, go to the December *Army AL&T Online* at **http://204.255.139.236/clients/asc/web/dev/pubs/alt_online/toc.cfm?iID=0612**.

PM CCS Flares. Front row, left to right: Mary S. Adams; PEO Ammunition and Commanding General (CG) Picatinny Arsenal MG Paul S. Izzo; Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) Kenneth J. Krieg; Rene Medina; COL William W. Stevenson; Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT) Claude M. Bolton Jr.; and Santo Lombardo. Second row, left to right: June DeSalvio, Heather Johnson, Sandra LaBell, MAJ Keith Taylor, Amanda Amoroso and Robert J. Ritchie. (U.S. Army photo by Richard Mattox.)

PM IRCM. Front row, left to right: Ed Courtney; Joyce Bilodeau; MG Paul S. Izzo, PEO Ammo and CG, Picatinny Arsenal; USD(AT&L) Kenneth J. Krieg; COL Philip J. Carey; COL William W. Stevenson; ASAALT Claude M. Bolton Jr.; John Cranston; and Charles Elgin. Second row, left to right: Mike Osborne, John Kamadulski, Henry Flick, Mike Wilson, Marian Guidry, Mark Chess and Sandra Frierson. (U.S. Army photo by Richard Mattox.)

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