

ARMY AL&T

January - March 2006



LIFE CYCLE MANAGEMENT COMMANDS UPDATE AND ARMY MEDICAL RESEARCH

ASC

ACQUISITION SUPPORT CENTER

**See Inside
Back Cover
for Important
Production and
Distribution Changes**

From the Army Acquisition Executive *Charting the Way Forward for 2006*

As we face the challenges of a new year, while still waging the global war on terrorism, it's important to recognize the tremendous achievements the Army made in 2005. The Acquisition, Logistics and Technology Workforce reached many milestones in its quest to bring the best technology to the world's best Army. We have moved forward with the implementation of Future Combat Systems, which is continually redefining what comprises a fully integrated, network-centric fighting force. This initiative provides our Soldiers with capabilities unprecedented in the spectrum of modern warfare. We made significant gains in the areas of science and technology, deploying such breakthrough innovations as Blue Force Tracking and Force XXI Battle Command Brigade and Below across the force, allowing our battlefield commanders to use real-time satellite communications on the move to keep our forces connected despite harsh climatic conditions and extremely high operations tempo. We continue to answer Secretary of the Army Dr. Francis J. Harvey's transformation challenge, using tools such as Lean Six Sigma and value stream analysis to streamline our business processes and make America's Army the most effective and efficient in history.

This issue contains articles highlighting some topics that will continue to drive Army Acquisition Corps transformation, namely, the Life Cycle Management Commands (LCMCs) and innovations in Army medical research and medical combat care.

LCMCs

Since their inception in August 2004, the LCMCs have addressed the special challenges faced by an Army at war. Called on to anticipate and address future needs, the LCMCs have the mandate to meet the pressing immediate demands of our Soldiers — doing both with high quality, rapid turnaround and low cost. The life-cycle management initiative provides the integrated, holistic approach necessary to meet these challenges.

To date, we have established four LCMCs: the Aviation/Missile LCMC in Huntsville, AL; Communications/Electronics LCMC at Fort Monmouth, NJ; Soldier/Ground Systems LCMC in Warren, MI; and the Joint Ammunition LCMC at Rock Island, IL. A Chemical Materials Agency LCMC and Ammunition LCMC are also being considered for implementation. These commands seek to bridge the gap between the acquisition and logistics communities, bringing better quality products to our Soldiers faster and where and when they need them most. The LCMCs' key feature is that they provide "one bellybutton" for the Soldier to reach out and touch.



In this issue, you will find an interview with a key LCMC concept architect, GEN Benjamin S. Griffin, Commanding General (CG), U.S. Army Materiel Command (AMC). He will discuss AMC's Logistics Modernization Program, providing logistics and maintenance support to a modular Army and AMC's real-world response to natural disasters that ravaged the Gulf Coast last fall. His perspective will provide you with firsthand accounts of the progress being made, the way forward for LCMC implementation and how this concept has changed the way we provide goods and services to our combatant commanders and their Soldiers.

Another key leader, MG John M. Urias, former Joint Contracting Command-Iraq/Afghanistan (JCC-I/A) CG, discusses how the JCC-I/A is supporting security, humanitarian relief and reconstruction efforts in Iraq. MG Urias passed the mantle of leadership to his successor MG Darryl A. Scott, former Defense Contract Management Agency Director, Feb. 2, 2006, during their recent change of command ceremony.

Army Medical Research

As we have learned throughout the course of *Operations Enduring* and *Iraqi Freedom*, the price of victory is often paid in human sacrifice. Continuous innovation in our medical research is critical to ensure that our Soldiers receive the best care humanly possible. This issue contains articles that chronicle many of the medical breakthroughs that allow us to respond to a constantly changing threat environment and battlefield conditions. You will read about progress toward the development of a ricin vaccine, which will serve to protect our Soldiers against the silent killers inherent to bioterrorism. You will also read how we are taking advantage of medical evacuation robots to safely transport our injured Soldiers out of firefights and combat situations that would prohibit conventional methods of recovery or evacuation and potentially place our combat medics at greater risk.

As we look ahead to the coming year, it is imperative that we continue to constantly innovate, improve and impact the development of our products and services to best meet the needs of our Soldiers. We must embody the challenge and responsibility of thinking and acting in new ways to remain one step ahead of our enemies. I echo Secretary Harvey's remarks — "We stand in awe of our Soldiers and look forward to 2006 to continue the tremendous progress we have made in transforming the Army — all while our Soldiers continue to fight and win the global war on terrorism." Let us continue our endeavors in 2006 to support the fight, improve the force and build the future. HOOAH!

Claude M. Bolton Jr.
Army Acquisition Executive



ARMY AL&T

January - March 2006

ACQUISITION, LOGISTICS & TECHNOLOGY

PB 70-06-01

CLAUDE M. BOLTON JR.
Assistant Secretary of the Army
for Acquisition, Logistics and Technology
and Army Acquisition Executive

EDITORIAL BOARD

LTG JOSEPH L. YAKOVAC JR.
Director, Army Acquisition Corps and Director,
Acquisition Career Management

LTG JAMES HELMLY
Chief, U.S. Army Reserve/Commanding
General, U.S. Army Reserve Command

LTG STEVEN W. BOUTELLE
Chief Information Officer, G-6

LTG DAVID F. MELCHER
Deputy Chief of Staff (DCS), G-8

LTG WILLIAM E. MORTENSEN
Deputy Commanding General, AMC

MARK LEWIS
Assistant DCS, G-1

BG ERIC B. SCHOOMAKER
Commanding General
U.S. Army Medical Research
and Materiel Command

TINA BALLARD
Deputy Assistant Secretary
for Policy and Procurement
Office of the ASAALT

WIMPY PYBUS
Deputy Assistant Secretary for ILS
Office of the ASAALT

DR. THOMAS H. KILLION
Deputy Assistant Secretary
for Research and Technology
Office of the ASAALT

DR. MICHAEL O'CONNOR
Director of R&D
U.S. Army Corps of Engineers

THOMAS E. MULLINS
Deputy Assistant Secretary for Plans,
Programs and Resources
Office of the ASAALT

MICHAEL I. RODDIN
Executive Secretary, Editorial Board

EDITORIAL STAFF

MICHAEL I. RODDIN
Editor-in-Chief

MAJ DENNIS B. ELLISON
Operations Officer/Technical Editor

CYNTHIA D. HERMES
Executive Editor

ELIZABETH CONNELL
Managing Editor

ROBERT E. COULTAS
Departments Editor

MICHAEL J. VARHOLA
Web Editor

NOJAE KIM
Layout and Graphic Design

To contact the Editorial Office:
Call (703) 805-1034/1035/1038/1007 or
DSN 655-1034/1035/1038/1007

Articles should be submitted to:
DEPARTMENT OF THE ARMY, ARMY AL&T, 9900
BELVOIR RD, SUITE 101, FORT BELVOIR, VA 22060-5567.

Our fax number is (703) 805-4218.
E-mail: army.alt.magazine@asc.belvoir.army.mil
or LetterToEditor@asc.belvoir.army.mil.

Cover Story



**Interview With
GEN Benjamin S. Griffin,
Commanding General, U.S.
Army Materiel Command**

Michael J. Varhola

Page 4

Features

**Designing and Building
an LCMC – Blueprint
for a High-Performance
Organization**

BG Mike Cannon and Dr. Roger L. Cole

Page 10



**An Interview With
MG John M. Urias**

LT Danny Houglan, USN

Page 16

Evolution of the Joint Contracting Command-Iraq/Afghanistan	22
LT Danny Houglan, USN	
Obsolescence in Repair Parts Sustainment – Time for a New Paradigm	26
David G. Fieltsch and Greg Phillips	
Revolutionizing Logistics Support and Revitalizing the Army's Contingency Contracting Capabilities	30
SGM Ethan A. Jones	
A Successful Alpha Contracting Experience	34
Ronald J. Rapka, Evonne Heyward, Brett Boyle and Scott Godin	
Field Medics to Get Improved Sterilizer	41
Karen Fleming-Michael	
Oxygen Carriers Coursing Along in Clinical Trials	42
Karen Fleming-Michael	
Vaccine for Ricin Toxin Developed at Detrick Lab	46
Karen Fleming-Michael	



ARMY AL&T

January - March 2006

ACQUISITION, LOGISTICS & TECHNOLOGY

Features



Robots Extracting Casualties Reduce Risk to Medics

Karen Fleming-Michael

Page 38

Important Changes to Army AL&T Magazine Subscriber Distribution

The U.S. Army Acquisition Support Center has been challenged to continue to find cost and production efficiencies. Consequently, we've examined our magazine production costs and determined there are several ways to reduce overall printing and postage expenditures to maximize sound cost-avoidance strategies and streamline production processes. One such effort involves transitioning *Army AL&T* Magazine from bimonthly to quarterly publication. Another magazine-related cost-saving effort involves eliminating our individual subscriber database and moving to unit- and organization-only distribution via the Army Publishing Directorate.

Please see the inside back cover of this issue to learn more details about how these changes will impact individual subscribers and how you can continue to receive the magazine.

We welcome all feedback regarding these changes. Please e-mail your comments or questions to us at **LetterToEditor@asc.belvoir.army.mil**.

Army AL&T Magazine (ISSN 0892-8657) is published quarterly by the ASAALT. Articles reflect views of the authors and not necessarily official opinion of the Department of the Army. The purpose is to instruct members of the Army acquisition workforce relative to AL&T processes, procedures, techniques and management philosophy and to disseminate other information pertinent to their professional development. Private subscriptions and rates are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 or (202) 512-1800. Periodicals official postage paid at Fort Belvoir, VA, and additional post offices. POSTMASTER: Send address changes to DEPARTMENT OF THE ARMY, ARMY AL&T, 9900 BELVOIR RD, SUITE 101, FORT BELVOIR, VA 22060-5567. Articles may be reprinted if credit is given to Army AL&T Magazine and the author.

Putting Soldiers and Tactical Vehicle Safety First – New Partnership Results in Product Solutions

COL S.R. Kidd, Joseph M. Keusch and Terry Gonda

Page 54



Army Science Board – Providing a Half Century of Scientific Advice and Guidance

LTC Scott S. Haraburda

Page 70

Researchers Making Strides Against Botulism	50
<small>Karen Fleming-Michael</small>	
The Hybrid Electric Humvee – Providing Portable Power to the Force	58
<small>Ashley John</small>	
TARDEC Innovation Defies Intense Iraq Heat	62
<small>Ashley John</small>	
Proposed Automotive Test Track Considered Crucial for High-Speed Combat Driving	66
<small>Michael Cast</small>	

Departments

Career Development Update	74
News Briefs	77
ALTESS News	78
Worth Reading	79
Contracting Community Highlights	80
Conferences	84

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

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
PETER J. SCHOOMAKER
General
United States Army
Chief of Staff

Official:

SANDRA R. RILEY
Administrative Assistant to
the Secretary of the Army
0604402

Improving Operational Readiness and Battlefield Force Sustainment

The U.S. Army continues to meet its operational contingencies across the full spectrum of conflict in a world undergoing unprecedented and accelerating change. As the Army fulfills a vital role in prosecuting the global war on terrorism, the Army Acquisition Corps continues to — in the words of Army Acquisition Executive and Assistant Secretary of the Army for Acquisition, Logistics and Technology Claude M. Bolton Jr. — “bring the best technology to the world’s best Army.”

Urban warfare and nonlinear battlefields have irreversibly impacted the U.S. Army’s fundamental approach to warfare, battle command and technology integration as the Acquisition, Logistics and Technology (AL&T) Workforce harnesses new technological capabilities to enhance Soldiers’ mission execution and synchronization through network-centric operations. New weapon and communication systems will allow nonhierarchical, real-time dissemination of intelligence and targeting and other operational data at all levels. As a result, weapon systems will be more responsive, reliable, maneuverable, survivable and lethal on the modern battlefield.

Leading transformation are the Army’s Life Cycle Management Commands (LCMCs) and the program executive offices (PEOs). As GEN Benjamin S. Griffin, Commanding General (CG), U.S. Army Materiel Command, points out in his interview beginning on Page 4, the LCMC and Army Field Support Brigade structure will provide better logistics and maintenance support to a modular Army capable of performing diverse missions at high operations tempo. He also highlights the importance of imbedded and performance-based logistics and the concept of logistical force generation from a direct and general support perspective. Last, but certainly not least, Griffin addresses the importance of the Logistics Modernization Program to the Current and Future Forces.

BG Mike Cannon, PEO Missiles and Space and LCMC Deputy CG at Redstone Arsenal, AL, and his co-author Dr. Roger L. Cole, Director of Consulting Services for Managing People and Change Inc., reiterate that the LCMCs’ collective goals are to get products and equipment to the Soldier faster, increase system availability, improve readiness and eliminate the separation between the procurement and sustainment communities. They propose that LCMC design and construction must focus on the congruence of all design elements, culture and strategy if an organization is to truly emerge as a high-performing work system.

In another key interview in this edition, MG John M. Urias, former CG, Joint Contracting Command-Iraq/Afghanistan, discusses the responsive operational contracting support his organization provided the U.S. Chiefs of Mission, Multi-National Force-Iraq and Combined Forces Command-Afghanistan in efficiently acquiring vital supplies, services

and construction support for Coalition Forces in direct support of *Operations Enduring* and *Iraqi Freedom*. Likewise, Urias stresses the importance of integrating contracting into individual unit planning cycles before deployment so contingency contracting officers can hit the ground running with the first deployers.

Clearly, the challenges the Army faces as it transforms are as dynamic as the world we live in. The *Army AL&T* Magazine editorial staff is pleased to bring you a range of articles this issue that will hopefully inform and inspire you. At the very least, this issue provides thought-provoking ideas about the strategic direction in which the U.S. Army is headed and the tremendous progress the AL&T Workforce is making in the areas of research and development, program management and Future Combat Systems technology integration in providing rapid, responsive and innovative solutions to combatant commanders and their Soldiers.

Several additional articles will provide some perspective on the evolution and importance of contingency contracting on the modern battlefield, as well as the absolute necessity for revitalizing the Army’s logistics and maintenance support for a modular, power-projection force.

In a series of articles by the U.S. Army Medical Research and Materiel Command’s Karen Fleming-Michael, the author takes us on an informative journey that spans medical robots on the battlefield to lifesaving hemoglobin-based oxygen carriers and “microbubbles” to ricin vaccines to counter bioterrorism and botulism antitoxins to thwart potential biological threats for deployed Soldiers defending freedom’s frontier.

If that weren’t enough, we have several articles for you that address tactical vehicle product solutions designed to enhance Soldier safety and some new vehicle product innovations being engineered by the U.S. Army Tank Automotive Research, Development and Engineering Center and U.S. Army Tank-automotive and Armaments Command.

Before closing, I direct your attention to our Inside Back Cover, which contains vital information about publication frequency, our new unit-based distribution plan, article submission deadlines and our new *Letter to the Editor* e-mail address at LetterToEditor@asc.belvoir.army.mil. As always, *Army AL&T* Magazine’s Editorial Staff is dedicated to serving the greater AL&T Workforce with salient educational articles, good news stories, breakthrough technology innovations, lessons learned, and career and professional development information. For more time-sensitive news and information, visit us online at <http://asc.army.mil>.

Michael I. Roddin
Editor-in-Chief

Interview With GEN Benjamin S. Griffin, Commanding General, U.S. Army Materiel Command

Michael J. Varhola

On Nov. 28, 2005, GEN Benjamin S. Griffin, Commanding General of the U.S. Army Materiel Command (AMC), spoke with *Army AL&T* Magazine about the ever-evolving task of providing logistical support to American warfighters around the world.

AMC Commanding General GEN Benjamin S. Griffin discusses how the Life Cycle Management Command and Army Field Support Brigade structure will provide better logistics and maintenance support to a modular Army Nov. 28, 2005, at AMC HQ, Fort Belvoir, VA. (U.S. Army photo by Cindy Hermes.)

AL&T: As the Army transforms, AMC has been a leading change agent in spiraling technology to the Current Force. How have the Life Cycle Management Commands (LCMCs) helped to facilitate change while also meeting the Army's transformation initiatives and requirements?

Griffin: We've implemented several initiatives that seek to provide "cradle-to-grave" capabilities support and to establish a single interface between AMC and our customers. One initiative was the establishment, in December 2004, of the first Army Field Support Brigades [AFSBs]. We now have seven field support brigades: in Iraq; Kuwait; Korea; Europe; Fort Lewis, WA, focused on the Pacific other than Korea and Japan; Fort Bragg, NC, focused on the East Coast; and one at Fort Hood, TX, focused on the West Coast.

These are our links to the commanders in the field — Active, Guard and Reserve — and are focused on the division, brigade and battalion chains of command. The AFSBs provide a single face for AMC to the commanders and units that we support. On a weekly basis, we receive feedback from these Field Support Brigades. Then, using the LCMC construct, the research, development and engineering centers, program executive officers [PEOs] and program managers [PMs], and logistics maintenance commands work together through the three LCMCs: U.S. Army Tank-automotive and Armaments Command [TACOM], U.S. Army Aviation and Missile Command [AMCOM] and U.S. Army Communications-Electronics Command [CECOM]. We're now in the process of moving to a Chemical Materials Agency LCMC and, in the future, I'd like to establish an Ammunition LCMC as well.

From the information provided to the LCMCs, we can apply cradle-to-grave



Organizational maintenance is continually evolving as the nature of warfare and combat changes. Contract maintenance support is embedded down to the unit level to ensure that Soldiers' equipment and weapon systems are ready to go when and wherever they are needed. Here, a Soldier from the 3rd Infantry Division provides checkpoint security from an M3A3 Bradley Fighting Vehicle near Tikrit, Iraq, in June 2005. (U.S. Army photo by Matthew Acosta.)

materiel solutions and support to our warfighters. Feedback indicates that the LCMC concept has been very effective at improving our responsiveness and support to the field. We learn from and improve upon the process every day, but I think having the LCMCs has forged much stronger links to the warfighter and has enabled us to do a much better job of supporting not only Army forces, but the entire joint team that we have been asked to support. As a division commander, I felt this cradle-to-grave support was severely lacking — we now have a fix in place, but much work still needs to be done.

AL&T: What benchmarks or metrics does AMC use to determine if combatant commanders and their Soldiers are satisfied with the level of logistics support they receive in the field?

Griffin: The best benchmark I know is the direct feedback we receive from commanders and Soldiers in the field. Whether they are in a combat zone or resetting from redeployment back from theater in Korea,

Germany, Hawaii, Alaska, stateside, Iraq, Afghanistan or Kuwait, the firsthand feedback we get through the AFSBs is the best metric. However, there are certain things we can measure from a readiness standpoint using reportable metrics: readiness levels, equipment fill levels and equipment modernization levels. Another thing we do is to determine how long it takes us — once we have finished a product, whether it's in the depot or

whether it's something we've procured from the private sector — to get it out that last tactical mile to the end user. This includes engineering support, repair parts and end items. How long does it take from the time we fixed it to when we get it back to the user? How much equipment can we repair forward? As you know, turnaround time is critical for equipment repair. Likewise, sending engineering teams forward or designing and actually building materiel solutions to fix problems in theater

are the kinds of things our commanders must weigh in on.

So again, it's that direct feedback that I and the other seven major subordinate

The LCMCs are a work in progress, and I will never be satisfied until we've met all the Army's needs in a timely fashion. We get better at it, but it's a constant attempt to improve upon our responsiveness to the units in the field.



Contract maintenance logistics support, LOGCAP and performance-based logistics teaming have kept the aviation community up and flying despite extremely high operations tempo in Iraq and Afghanistan. Here, an AH-64 Apache helicopter returns to Camp Taji, Iraq, after providing close air support to ground troops fighting the insurgency. (U.S. Air Force photo by TSGT Russell Cooley IV.)

command [MSC] commanders get on a weekly basis. And we're able to get that feedback — focusing on the top 5 to 10 issues that commanders are having in the field — directly back to the teams that deliver the materiel solutions. We zero in on parts shortages, look at downtime for systems, look at where we are in up-arming or fielding systems and look at how agile we are with the Rapid Fielding Initiative to get the equipment into the hands of users. This combination is what we use on a continuous basis to get feedback from the commanders in the field. Again, remembering who our customers are, keeping the lines of communication open and doing the quality control.

The other piece is getting out of the headquarters and visiting units in the field. There is no substitute for hearing firsthand from the chain of command. This includes units in the field — regardless of the service — as well as in the depots, ammo plants and our partners in the private sector. We get tremendous support from private industry. That includes everybody who's involved in getting the warfighter what he or she needs. And when I say "warfighter," I'm talking about all MOSs [military occupational specialties], not just the infantry, armor, artillery and aviation branches. I'm talking about all branches and services.

The LCMCs are a work in progress, and I will never be satisfied until we've met all the Army's needs in a timely

fashion. We get better at it, but it's a constant attempt to improve upon our responsiveness to the units in the field. Generally speaking, we've gotten very good comments from commanders since the formation of the LCMCs. The link that we've forged to the field

today from the AFSBs — which includes our uniformed and civilian logisticians on the ground, including the logistics assistance reps, the logistics assistance officers, AFSB commanders, as well as feedback to the PMs, PEOs and the U.S. Army Research, Development and Engineering Command — again, using the LCMC concept, really allows us to pull that unsurpassed logistics support together. So I'd say "yes," the feedback's been very good. We're not there yet, it's a constant challenge to reach out and make sure we're getting feedback from the Active, Guard and Reserve Components — the total force — as well as the support we provide to the other services.

The LCMC concept, in my estimation, works extremely well. It has brought key systems and processes together, whether it's a new or an old system. It gives us the cradle-to-grave concept. And whether it's new or old, it will plug into one of our LCMCs. It's given us more clarity with respect to which command is responsible for tracking the system and the field's requirements. And, as we field commercial-off-the-shelf [COTS] systems — which we tend to do more and more — it's very important that we can take that COTS piece of equipment and

plug it into one of the LCMCs to provide the follow-on logistics support and maintenance, including spares and parts.

AL&T: As AMC moves forward to support a modular Army, will there be more reliance on contracted logistics and maintenance support and why?

Griffin: If you look at contract maintenance today — in theater, here at home or overseas in Europe or the Pacific — you very quickly see that we are integrated with respect to what I call "organizational maintenance," maintenance above the organization level, logistics support and contract support. Contract support is embedded down at the unit level, and all the way up into the depots, ammo plants and the private sector — which we reach out to for support and receive help from. And that's overseas as well as in CONUS.



During a visit to Anniston Army Depot, AL, GEN Griffin observes Paul Barber (middle) and Terry Grissom, small arms repairers, test fire an M2 .50 caliber machine gun. Every weapon that is worked on in the depot's Small Arms facility is test fired to ensure that each one is ready for use by America's military forces. (U.S. Army photo courtesy of AMC.)

We will support the modular force by what I call the "meshing" of the institutional and operational force as we go down the road. And that's not only at AMC, but also in other aspects of the institutional, as well as the operational, Army. Contract maintenance logistics support is a key part of that. The Logistics Civil Augmentation Program (LOGCAP) is an example as well. But much broader than LOGCAP is the work of the private sector teaming with us today. We use the phrase "performance-based



While touring the Small Arms Service Center Maintenance Shop at Camp Anaconda in Balad, Iraq, GEN Griffin speaks with Mike Peterson, site lead for the Common Remotely Operated Weapons Station. (U.S. Army photo courtesy of AMC.)

logistics,” and we are doing a tremendous amount of teaming with the private sector in places like Fort Rucker, AL, Fort Bragg, Fort Hood, Fort Lewis and Fort Drum, NY, to name a few, as well as overseas locations. Contract support is critical to our efforts as we transform to the modular force. But this is not something new. It’s something that’s evolved over time. We can take expertise from the private sector, combine it with the government sector to include what our logistics units are doing, and we can do a much better job of faster equipment repair turnaround. Nowhere is that more evident than in the aviation community and what we’ve done over the years with aviation maintenance and logistics support, but this is not unique to aviation. It’s also been incorporated into ground, fire control and other systems across the board. More and more performance-based logistics teaming with the private sector, and a combination of support from contractor as well as government personnel, is the future way to exploit the best practices of industry and business.

What we’ve done with the Stryker brigades, both overseas as well as in CONUS, is a very good example in how we’ve combined contract support

with organic elements. But it’s certainly not isolated to the Stryker, it’s across the board and in other weapon systems as well. We’re doing a lot of contract work on the Bradleys, HEMTTs [Heavy Expanded Mobility Tactical Trucks], HETs [Heavy Equipment Transporters] and HMMWVs [High Mobility Multi-purpose Wheeled Vehicles]. It’s a combination of what we’re doing in depots, what we’re doing with organizational maintenance and what we’re doing with the private sector.

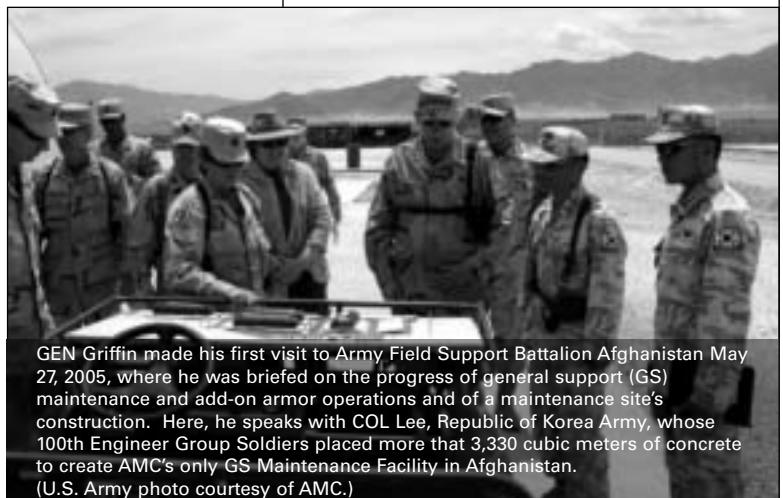
It gets into what we call “logistical force generation.” When you want to reset the force and sustain the force over time, it becomes a combination of organic direct support and general support — what we have in the depots, what we’re doing with contractors and what we’re doing with original equipment manufacturers. It involves looking at what is the best combination thereof,

trying to remove as much bureaucracy as we can, looking at the layering that we have and reducing, where we can, any kind of obstacles to make the entire acquisition and maintenance process faster, more efficient and more economical. By more efficient, I mean with respect to how quickly we can turn a piece of equipment around and fix it, ensuring that we’re fixing it to the right standard and doing this as cost-effectively as we can. This is not unique to the Army. Our sister services are moving along the same path and we are learning from them.

AL&T: How is AMC’s Logistics Modernization Program (LMP) helping to improve Soldier operations tempo while also reducing the overall maintenance and sustainability burden in the theater of operations?

Griffin: The LMP concept provides us a tool, an automated base, if you will, to do better tracking. Whether it’s ordering parts, getting the right part to the right place, whether it’s tracking inventory, the amount of inventory you’re carrying, inventory control — it’s all wrapped up into what is being done all the way down to the work that’s occurring inside the depot.

The biggest challenge I have is to get the right part, to the right place, at the right time. LMP is one of the tools



GEN Griffin made his first visit to Army Field Support Battalion Afghanistan May 27, 2005, where he was briefed on the progress of general support (GS) maintenance and add-on armor operations and of a maintenance site’s construction. Here, he speaks with COL Lee, Republic of Korea Army, whose 100th Engineer Group Soldiers placed more than 3,330 cubic meters of concrete to create AMC’s only GS Maintenance Facility in Afghanistan. (U.S. Army photo courtesy of AMC.)

that we envision as an enabler both in the workplace and at the depot, as well as all the way up to the LCMCs. Again, it gets at the resource allocation so that we can maximize the efficiency of the individual worker, ensure that the end items needed get there to be repaired and ensure that everything's in sync.

From a financial standpoint, like a checkbook, we need to be able to monitor inventory balance, what's ordered, what it's costing to do the work and streamline the process — online and in real time — so we're not doing it a day, two days or a week late. We can automatically go in and see where we are.

We're not unlike the private sector in looking at how much inventory we're carrying, where that inventory is and if it's at the right place at the right time. Do we have the parts and spares there to get the equipment fixed, the workforce on-site, the equipment and everything set, so we can turn it around faster and back to the user? And LMP is one of those tools that we see making this happen. We've made significant progress toward deployment of LMP and our ability to become more efficient is heavily reliant upon automated systems like LMP.

AL&T: At the Senior Leaders and AMC Commanders Conference in August, you noted that the Special Operations community is doing a great job of identifying requirements and getting materiel to the field. You attributed their success in part to the critical role non-commissioned officers (NCOs) play in the requirement/solution identification,

maintenance and sustainability process. What is AMC doing to strengthen the role of NCOs in its logistics, maintenance and sustainment processes? How can other units and organizations help themselves?

Griffin: The point I was trying to make is that you must look at any requirement from the perspective of the warfighter in the field — whether it's engineering, research and development or production — and get it turned around and back in the hands of the people in the field who need it, streamline that process and have it



Performance-based logistics means many things to different people, but to combat commanders and Soldiers on the front lines, it means having enough fuel and ammunition to operate their vehicles and weapon systems to take the global war on terrorism to the enemy's doorstep. (U.S. Army photo.)

linked to the end user or warfighter — this is how we better meet the requirements of our customers and how we involve them in the feedback process.

I think Special Operations Forces [SOF] do a tremendous job in this area — linking the person who has a requirement and keeping that person in the loop. So I've challenged our people to do a better job by looking at how they [SOF] do business and rapidly turn around

requirements and keep the link down with the end user. Again, it's the design and structure of the AFSBs that can and will make a big difference for our Soldiers.

I've also asked Command Sergeant Major [CSM] Daniel K. Elder — we've got a tremendous group of CSMs here at AMC — to try to improve the link we have with end users via the NCO network to bring forward good ideas on how to improve upon what we're doing in the field and the products we provide. Then, allowing units in the field more involvement in finding solutions so they

can communicate better with us. It's our responsibility to open up better lines of communication. We must go back and ensure that we are, in fact, meeting the units' needs. "Quality control systems" will ensure that we are meeting the needs of the entire chain of command better by using the NCO chain. CSM Elder has aggressively taken this on and we are seeing progress through our feedback mechanisms.

But I know the CSMs out at the MSCs are doing the same thing, whether it's in aviation, research and development, tank-automotive or communications-electronics.

We are seeing some significant changes in that feedback and, again, we are trying to do a better job of keeping the end user in the loop, whether it's in small arms, weapons, ammunition, uniforms, rations, aircraft — you name it. This is just another challenge we must continually stay on top of so we can better meet our customer's needs. It's a challenge we face every day in accomplishing our mission.

I know we do not have all the answers, and we know how critical customer and Soldier feedback is.

AL&T: The combined U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC)/TACOM community responded with real-world solutions and timely support — water purification, auxiliary power generation and fuel tankers, just to name a few — when natural disasters (Hurricanes Katrina and Rita) struck Louisiana, Mississippi and Alabama. This integrated response helped save lives and lessen human suffering. This is a tremendous story that needs to be told to *Army AL&T* Magazine's more than 48,000 readers, the Army at large and the American people. What is the story you would like us to tell and how would you like us to emphasize it to our internal and external audiences?

Griffin: Here are just a couple of examples:

- The TACOM LCMC, like the other MSCs, provided support to disaster relief operations throughout America's Gulf Coast region by delivering 5,000-gallon fuel tankers, rough-terrain forklifts, container handlers and a variety of materiel handling equipment to some units — for example, the 1st Cavalry Division. Likewise, we provided liaison personnel to both the 1st Cavalry Division and the 82nd Airborne Division.
- TARDEC generated hundreds of thousands of gallons of drinking water for those affected by Hurricane Katrina in Mississippi and Louisiana by providing purification equipment.
- The Red River Army Depot sent 100 Humvees to National Guard units for humanitarian, security, safety, supply and rescue missions, including moving injured and disabled citizens to safer areas.

In the wake of Hurricane Katrina, AMC responded by sending 100 Humvees to National Guard units providing humanitarian relief and security to storm-ravaged communities in Mississippi and Louisiana. Here, National Guardsmen patrol downtown New Orleans searching for and rescuing survivors Sept. 14, 2005. (U.S. Army photo by SSG Jacob N. Bailey.)



- We deployed some logistics contracting specialists out of Rock Island, IL, the Army Field Support Command, in case that level of expertise was needed.
- We put some folks on LTG Russel L. Honoré's team early on. We activated, through our operations center, a response/crisis action team, to ensure an enduring capability to support additional requirements. We also provided limited command and control systems to some deploying units.
- We worked with private industry doing critical work for the military from a facility in the New Orleans area to see if there was anything we could do to help sustain their support to the war in Iraq and to mitigate the effects of the hurricane on their operation. This is an area we must be prepared to support in future emergencies.
- AMCOM is now working to mitigate the effects of the many flight hours experienced by helicopters committed to around-the-clock operations during support to the hurricane relief and recovery operations.

We learned a great deal during this process on how we can provide better support in the future — both to relief workers and our industrial partners. Capturing lessons learned, we will build upon this experience to provide even better support if and when these situations occur again. We were fortunate to have in place command and control as well as logistics and maintenance systems that enabled us to respond rapidly when asked — and we used the LCMCs to focus our efforts. These lessons, and our subsequent improvements, will enable us to do even more when called upon in the future.

MICHAEL J. VARHOLA is the Web Editor with BRTRC's Technology Marketing Group providing contract support to *Army AL&T* Magazine and the U.S. Army Acquisition Support Center. He has a B.S. in journalism from the University of Maryland and experience as a U.S. Army infantryman and civil affairs specialist.

Designing and Building an LCMC – Blueprint for a High-Performance Organization

BG Mike Cannon and Dr. Roger L. Cole

Since the first Life Cycle Management Command (LCMC) was established at Redstone Arsenal, AL, in October 2004, it has become increasingly clear that successful LCMC implementation requires much more than rearranging the boxes on an organization chart and collocating personnel. The LCMC initiative will achieve its desired outcomes only through the application of sound, proven principles of organization design and development, acknowledging the lessons learned from the past and addressing cultural issues. Key desired outcomes are that products get to the Soldier faster, system availability and readiness is improved, the separation between the procurement and sustainment communities is eliminated and life-cycle cost is minimized.

A battery of High Mobility Artillery Rocket Systems fires a volley during a firepower training demonstration. Major streamlining of the entire acquisition management process is improving the LCMC's capacity to enhance the Army's go-to-war weapons systems capabilities. (Photo courtesy of Lockheed Martin.)

So, why, more than a year into implementation, would design issues still be a concern for the LCMC? While many of the “structural” decisions have been made, there remain many unanswered questions about overall organization design and related factors. For example, what impact will culture have on successful implementation of the design — will it create any obstacles or barriers? Organization design is an ongoing, iterative process. As LCMC metrics are gathered and analyzed, adjustments in design will likely become necessary.

Architects and Builders

The leadership team charged with the responsibility for establishing the Aviation and Missile LCMC includes MG James Pillsbury, Commander, Aviation

and Missile LCMC; Dr. Richard Amos, Deputy to the Commanding General; BG Mike Cannon, Program Executive Officer (PEO) Missiles and Space; and Paul Bogosian, PEO Aviation. They have the responsibility to design, build and manage the LCMC — its systems, strategy, structures, processes and culture. To borrow from the construction industry, they are both architects and builders.

As LCMC architects, their foremost objective is to design the LCMC so that it is able to execute its mission and strategies. But equally important, they need to design it so that it creates a supportive culture for employees. Typically, architects pay more attention to “structural” issues like work flow and

how jobs and work units are structured, rather than cultural issues that include leadership behavior, interpersonal relationships, distribution of power and communication. We contend that if one does not pay equal attention to the cultural and people issues, success could be seriously compromised.

Organizational Congruence

One of the sound, proven principles of organization design and development is something called “congruence of organizational elements.” Although it sounds academic, it is a fairly simple concept. Congruence, or “fit,” refers to the state of alignment, consistency or balance of all organizational elements including work, people,

Army acquisition management processes are being rapidly adapted to be more responsive to combatant commanders' changing battlefield requirements. This means the LCMCs must get products to our Soldiers faster and improve the "go-to-war" capability of our weapons systems, such as the Javelin being fired here. (U.S. Army photo.)



technology and information, among others. In everyday terms, it has to do with all the elements fitting together. For example, an organization would want to ensure that its reward system, hiring policies and practices and training systems are all congruent with, and reinforce the behaviors of, the desired culture and support its vision.

There are five key organizational elements that should be aligned with one another to ensure successful LCMC implementation:

- Environment — What are the external and internal demands, pressures and expectations facing the LCMC?
- Vision and Strategy — What will the future organization look like? What are the LCMC's goals, objectives and

values? How will they be achieved?

- Organization Design — What tasks and technologies are required to execute the strategy? What structure, systems, processes and capabilities are required to ensure the tasks can be completed effectively and efficiently?
- Culture and Leadership — What are the shared values, beliefs and cultural norms that drive behavior in the organization? How do leaders inspire followers to take on new challenges? How do leaders model the organization's values?

- Results — What is the organization achieving? What has been or will be accomplished?

The old axiom "strategy drives structure" is still true today. The LCMC architects must ensure that there is a good fit between strategy and organization design.

An understanding of each organizational element in the context of supporting Army transformation, and how they impact one another, will help the LCMC architects and builders achieve success. It all starts with changing demands.

Environment — Changing Demands on the Army Acquisition Process

The Army has launched a comprehensive effort to transform itself as a response

to changing operational demands. A primary objective of this transformation is to create a lighter, more rapidly deployable and more tactically agile Army without sacrificing survivability and lethality. The global war on terrorism is a different kind of war with a different kind of enemy — one that is no longer a single political regime, person, religion or ideology.

Changing Demands Require Changing Vision and Strategies

The driving force behind LCMC creation is the changing demands on the Army. While the Cold War’s last few decades were characterized by a certain degree of predictability, the nature of the threat is much more complex, varied and unpredictable today. This has led to a need for the Army and, more specifically, Army acquisition management, to adapt and change to be more responsive in getting products to our Soldiers faster and improving the go-to-war capability of our weapons systems.

Changing Strategies Require Changing Organizational Design and Structure

The old axiom “strategy drives structure” is still true today. LCMC architects must ensure that there is a good fit between strategy and organization design. An effective life-cycle management initiative — one that will support integrated weapon system teams — will require that all aspects of organization design be addressed. To date, discussions related to LCMCs have primarily addressed organization design issues — more specifically, issues concerning LCMC structure. By organization design, we mean more than just the structure or the organization’s manning chart and how they are interconnected. Structure must include determining what tasks need to

be performed to fulfill the strategy, how the work is assigned, how the work will be rewarded and how decisions will be made, just to name a few.

From an organization design standpoint, there are clear and observable differences between what life-cycle management looked like before and what it will look like after full LCMC initiative implementation, as depicted in Table 1.

Changing Design and Structure Requires Changing Culture

Successful transition to an LCMC will also require addressing cultural issues. Culture is basically comprised of behavioral norms — the behaviors that all employees understand are expected of them if they are to “fit in” and “survive” within their organization. Behavioral norms guide the way employees approach their work and how they interact with others. These norms are shaped by the organization’s commonly shared assumptions, beliefs and values of the organization.

Culture can either facilitate or

inhibit the success of organizational initiatives like LCMCs. It is often the cultural issues and differences that create the greatest resistance to change. Once the strategy and structure are in place, then current culture should be assessed to determine if it is a good fit. By not ensuring proper cultural alignment — by not making the culture congruent with strategy and structure — many organizations have watched technically sound initiatives wind up as just other failed programs.

Pre-LCMC	Fully Implemented LCMC
<ul style="list-style-type: none"> Life-cycle management composed of multiple disparate processes with no single entity in charge of the entire piece. No single point of contact for the Soldier when help is needed. No single person is accountable for or controls weapons system readiness. 	<ul style="list-style-type: none"> PEO will be single point of accountability for accomplishing program objectives through integration of total life-cycle systems management.
<ul style="list-style-type: none"> Stovepiped communities and lack of unity and integration of support to the weapons system life cycle: <ul style="list-style-type: none"> Research, development and engineering are the responsibility of the U.S. Army Research, Development and Engineering Command (RDECOM). Acquisition responsibilities reside in PEOs. Sustainment resides in the Army Materiel Command (AMC) major subordinate commands (e.g., the Aviation and Missile Command (AMCOM) is the Army’s sustainment manager). 	<ul style="list-style-type: none"> Environment is integrated and aligned: <ul style="list-style-type: none"> Integrate the Army’s acquisition, logistics and technology (AL&T) efforts. Integrate each of the activities necessary for support of the weapons system life cycle into a team under the management of the PM. PEO has closer ties to sustainment. Closer relationship between AMC major subordinate commands and the PEOs. No or little separation between the procurement and sustainment communities.
<ul style="list-style-type: none"> Spread out – some, but not total, collocation of weapons system team. 	<ul style="list-style-type: none"> Collocation of support personnel with a single weapons system authority. Collocation of weapons system teams (PM, Acquisition Center; Integrated Materiel Management Center (IMMC); Security Assistance Management Directorate (SAMd); U.S. Army Aviation and Missile Research, Development and Engineering Center; a majority of personnel will be physically collocated with the PM.
<ul style="list-style-type: none"> Lack of synergy. 	<ul style="list-style-type: none"> Greater synergy of the AL&T communities.
<ul style="list-style-type: none"> Lack of common metrics; most metrics are historical. 	<ul style="list-style-type: none"> Common metrics; forward-looking metrics including measurement of readiness and contract performance.
<ul style="list-style-type: none"> Less than optimal coordination and optimization resulting from the separation between weapons system acquisition and sustainment. 	<ul style="list-style-type: none"> Holistic approach to managing systems. Supports integrated weapon system teams.
<ul style="list-style-type: none"> Program managers (PMs) do not have funding, personnel and other resources necessary to carry out sustainment functions. 	<ul style="list-style-type: none"> PM manages all functions from research and development to sustainment and demilitarization. Life-cycle authority and responsibility is delegated down to a single individual. SFLCMCs will be in all project offices.

Table 1. Comparison of Pre-LCMC and Fully Implemented LCMC



Soldiers from 1st Battalion, 62nd Air Defense Artillery Regiment, 25th Infantry Division, fire a Stinger missile from their Avenger weapons system. (U.S. Army photo by PFC Cheryl Ransford.)

Oftentimes, it becomes necessary to change the culture. For example, prior to the merger of PEO Tactical Missiles and PEO Air, Space and Missile Defense to create PEO Missiles and Space in January 2005, employees identified a very different culture as their desired future culture through a survey that was conducted. During 2005, PEO Missiles and Space implemented changes to create a desired future culture. The goal is to create a more “constructive culture” that is characterized by open and collaborative communication, positive and supportive interpersonal relationships, participative and person-centered management, empowered decision making, inter-unit cooperation and coordination, and support of individual and professional growth and development.

The type of culture that is best suited for the Aviation and Missile LCMC depends on the environment it will be operating in, its strategic direction, employee needs, structure of the new organization and many other factors. The decision regarding the kind of culture the Aviation and Missile

LCMC leadership wants to create is critical because it will greatly impact such important outcomes as the quality of products and services, employee satisfaction, motivation, teamwork and other organizational effectiveness criteria.

Strategy, Organization Design and Culture Lead To Improved Results

A greater degree of congruence among the five key organizational elements will result in greater effectiveness —

getting products to Soldiers faster, improving system availability and readiness, and maximizing the go-to-war capability of weapon systems. When all these pieces are addressed, the result will likely be alignment and congruence. This could take the form of:

- A flexible strategy that adapts to changing demands and requirements.
- An organization structure that effectively and efficiently executes its strategy without being hindered by restrictive policies and rules.
- Systems and processes, such as human resources management and information technology, that directly support the organization’s strategy.
- A culture (norms, values, beliefs, attitudes) that supports and is aligned with strategy and design or structure.
- A culture that enables the organization to achieve its desired results.

Transformation to LCMC/SFLCM

One of the implicit objectives of LCMC/Soldier-Focused Life-Cycle Management (SFLCM) is to create a high-performing organization that is able to resolve many of the coordination and optimization problems resulting from the separation of acquisition



Soldiers from Bravo Co., 3rd Battalion, 13th Field Artillery Brigade, 42nd Division Artillery, fire an M31 Guided Multiple Launch Rocket System outside Tikrit, Iraq, June 22, 2005. (U.S. Army photo by SPC Gul Al Alisan, 55th Signal Co. (Combat Camera).)

1. Was your LCMC design driven by your customers and their requirements and demands (e.g., system availability and readiness)?
2. Will your LCMC design better enable people to work together to produce products that meet customer requirements (e.g., get products to Soldiers faster)?
3. Was your LCMC designed to maximize interdependence and synergy within and across work units (e.g., AMCOM, PEOs, RDECOM, SAMD, IMMC)?
4. Has clear direction with specific goals been provided to employees about the product requirements along with information needed to design and manage the work?
5. Was effective integration achieved with both the social (people, interpersonal dynamics, communication, etc.) and the technical (work flow, work processes, information flow, specific technologies, etc.) systems?
6. Was your organization designed to support open communication so that employees can send and receive information as needed (e.g., upward, downward and lateral communication)?
7. Do people have the opportunity to be cross-trained in a variety of skills? (This makes the organization more adaptable and able to reconfigure itself.)
8. Are people empowered to determine how they will do the work and manage their relationships with others?

Table 2. Questions to Guide LCMC Design

and sustainment. Conceptually, the process of creating the LCMC is fluid and dynamic. It has been, and will continue to be, a learning process. Learning comes through asking questions. Table 2 poses some questions intended to stimulate discussion among the LCMC architects and builders. How these questions are answered will give an indication of whether or not the LCMC is on the right track to become a high-performing organization and capable of achieving congruence among the important design elements.

Change Capability and Congruence

An essential key to the LCMC's success is its adaptability and responsiveness to constant, rapid change — in other words, change capability. It has developed the capacity to reinvent, renew and reshape itself as external and internal environments, customer requirements and technologies change. To achieve congruence there must be an ability and a willingness to change. Sometimes the change will be a:

- Shift in culture and behavioral norms.
- Shift in organization design elements.
- Strategic change.

- Combination of all three.

Congruence among strategy, structure and culture requires a holistic approach to managing systems. One must be able to see the interconnectivity and the interdependencies — not just look at the organization elements as independent elements, each in its own silo.

Recommendations for Path Forward

As the architects and builders are putting the LCMC together, the following design principles are offered as a guide or blueprint:

- Begin with customers and their requirements. The LCMC's goal is to better enable people to work together and efficiently produce and deliver products that meet customer requirements. So start by analyzing customer requirements and environmental demands and the organization's current ability to meet those demands and requirements.
- Develop and communicate clear vision, mission, direction and goals, with well-defined product requirements and measures of performance.

- Analyze and then integrate the technical systems — work flow, technologies and work processes — with the social systems — people, human resources systems, communication, leadership and norms.
- Ensure that everyone has access to the information they need to do their jobs effectively.
- Create an empowering culture and management structure where employees have the authority to make decisions that impact their work.
- Design into the organization the ability to anticipate and respond to constantly and rapidly changing environmental demands.

LCMC design and construction should focus on the congruence of all design elements, culture and strategy. We believe that this can only be accomplished by bringing together people, work, technology and information in a way that optimizes their fit. The organization then becomes a high-performing work system.

BG MIKE CANNON is the PEO Missiles and Space and LCMC Deputy Commanding General at Redstone Arsenal. He has a B.S. in engineering and an M.S. in industrial engineering from Texas A&M University. His military education includes the Armor Officer Basic and Advanced Courses, U.S. Army Command and General Staff College and the Industrial College of the Armed Forces.

DR. ROGER L. COLE is Director of Consulting Services for Managing People and Change Inc., a change-management consulting firm headquartered in Huntsville, AL. He has a B.S. in psychology from the University of North Carolina, an M.A. in psychology from East Carolina University and a Ph.D. in psychology from the University of Tennessee.

An Interview With MG John M. Urias

LT Danny Houglan, USN

In December 2005, MG John M. Urias, then Commanding General (CG), Joint Contracting Command Iraq/Afghanistan (JCC-I/A), generously took time from his busy schedule to be interviewed for *Army AL&T Magazine*. Urias reported directly to the CG, Multi-National Force-Iraq (MNF-I), and was responsible for managing an extremely large volume of contracting efforts supporting security, humanitarian relief and the reconstruction in Iraq and Afghanistan.

MG Urias said one of his biggest challenges is getting contracting into individual unit planning cycles. Contingency contracting officers (CCOs) ensure that units on the ground will have the fuel, food and services they need. "Warfighters shouldn't have to worry about the mechanics or intricacies of contracting – just who to go to for contracting support," Urias remarked. (U.S. Army photo by SPC Danielle Howard.)

AL&T: How did you incrementally assimilate all contracting functions working independently in Iraq and Afghanistan into the one centrally managed organization that became the JCC-I?

Urias: We began by combining the MNF-I Principal Assistant Responsible for Contracting-Forces [PARC-F] and the Project and Contracting Office [PCO] PARC-Reconstruction [PARC-R] under a single command structure. These were the only two existing contracting organizations in Iraq at the time of JCC-I's inception. PARC-F provided contracting support to MNF-I and the Multi-National Corps-Iraq, and PARC-R supported the PCO, Iraq Reconstruction Management Office, and the Multi-National Security

Transition Command [MNSTC-I]. From there, we began to coordinate contract operations in Iraq with the U.S. Army Corps of Engineers, II Marine Expeditionary Force and Central Air Forces [CENTAF].

In July 2005, U.S. Central Command leadership asked us to assume control of contracting operations in Afghanistan, as well as Iraq, and we agreed. We began coordinating with Combined Forces Command-Afghanistan [CFC-A] and signed a memorandum of understanding with them later that summer. This gave us operational control and Head of Contracting Activity authority for contracting in Afghanistan and we became the JCC-Iraq/Afghanistan [JCC-I/A]. There are still a few odds and ends in

the way of theater contracting that do not fall directly under us, but we have visibility on all contracting operations in both the Iraq and Afghanistan areas of operation [AOs]. We are currently working with CENTAF to see how we can better partner with the four expeditionary contracting squadrons still in Iraq. Our Bagram Regional Contracting Center [RCC] in Afghanistan already services the Air Expeditionary Wing there.

AL&T: What was your biggest challenge?

Urias: We have experienced both organizational and operational challenges. Some of our biggest challenges included those common with the development of any new organization. For example, identifying required

manpower, establishing command policies and processes, and implementing the systems required to operate in this type of environment. Operationally, we are challenged by the security environment limiting our access to vendors, as well as starting with a limited vendor base. Also, attacks on contractors and reconstruction projects as a means to cripple the coalition's efforts create challenges and increase our costs. Finally, requirements identification, though difficult stateside, has proven to be much more complex in theater with the given security, vendor access and cultural issues that surround us every day. Overcoming cultural boundaries, while educating the Iraqi ministries on basic acquisition processes, continues to be a focal point in our efforts to advise and assist in their road to self-reliance.

AL&T: What challenges still remain from a contingency contracting standpoint?

Urias: Our biggest challenge is helping unit commanders understand what better service and continuity can be provided to them from an RCC rather than collocated resources. Another huge challenge is getting contracting into the unit planning cycles that commence at the very beginning (initial deployment notification). Our leaders repeatedly go to war without contracting support in their first group of deployers, then wonder how they are going to get the stuff they need. CCOs make

things happen — such as food, shelter, porto-lets and showers. The sooner CCOs are on the ground, the better. We strive hard to keep contracting transparent to the warfighter. Warfighters shouldn't have to worry about the mechanics or intricacies of contracting — just who to go to for contracting support.

AL&T: The JCC-I/A has been tapped to play a lead role in supporting combatant commanders prosecute the global war on terrorism (GWOT). What does this entail and what are your command's specific roles in providing critical contract support in the two AOs that JCC-I/ A services?

Urias: Our mission is to provide responsive operational contracting support to the U.S. Chiefs of Mission, MNF-I and CFC-A to efficiently acquire vital supplies, services and construction in support of Coalition Forces and the relief and reconstruction of Iraq and Afghanistan. Our specific roles can be divided into four areas as follows:

Operationally, we are challenged by the security environment limiting our access to vendors, as well as starting with a limited vendor base. ... Overcoming cultural boundaries, while educating the Iraqi ministries on basic acquisition processes, continues to be a focal point in our efforts to advise and assist in their road to self-reliance.

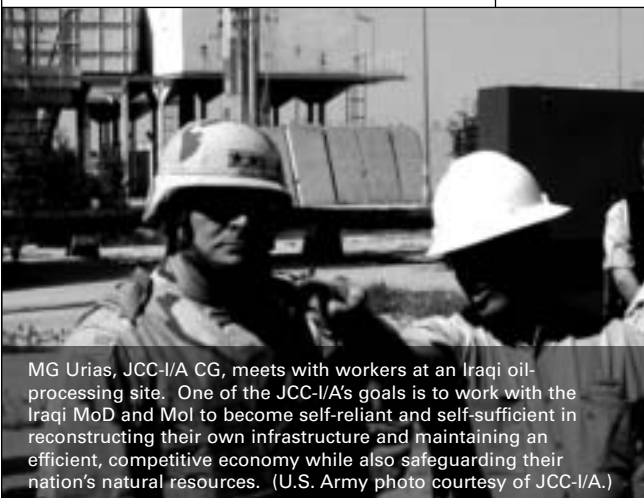
as they conduct reconstruction and relief operations. In Iraq, this mission is led by PARC-R, while PARC-F has a dual role in Afghanistan supporting both warfighters and reconstruction efforts.

- JCC-I/A provides contracting support to the MNSTC-I and the Office of Security Cooperation-Afghanistan as they rebuild their respective security infrastructures and train the local armies and police forces in each country.
- Our final role, and our most recent undertaking, is Ministerial Capacity Building. This is an effort to establish acquisition processes within the Iraqi Ministry of Defense [MoD] and Iraqi Ministry of Interior [MoI]. Our goal is to enable them to become self-sufficient in sustaining their forces.

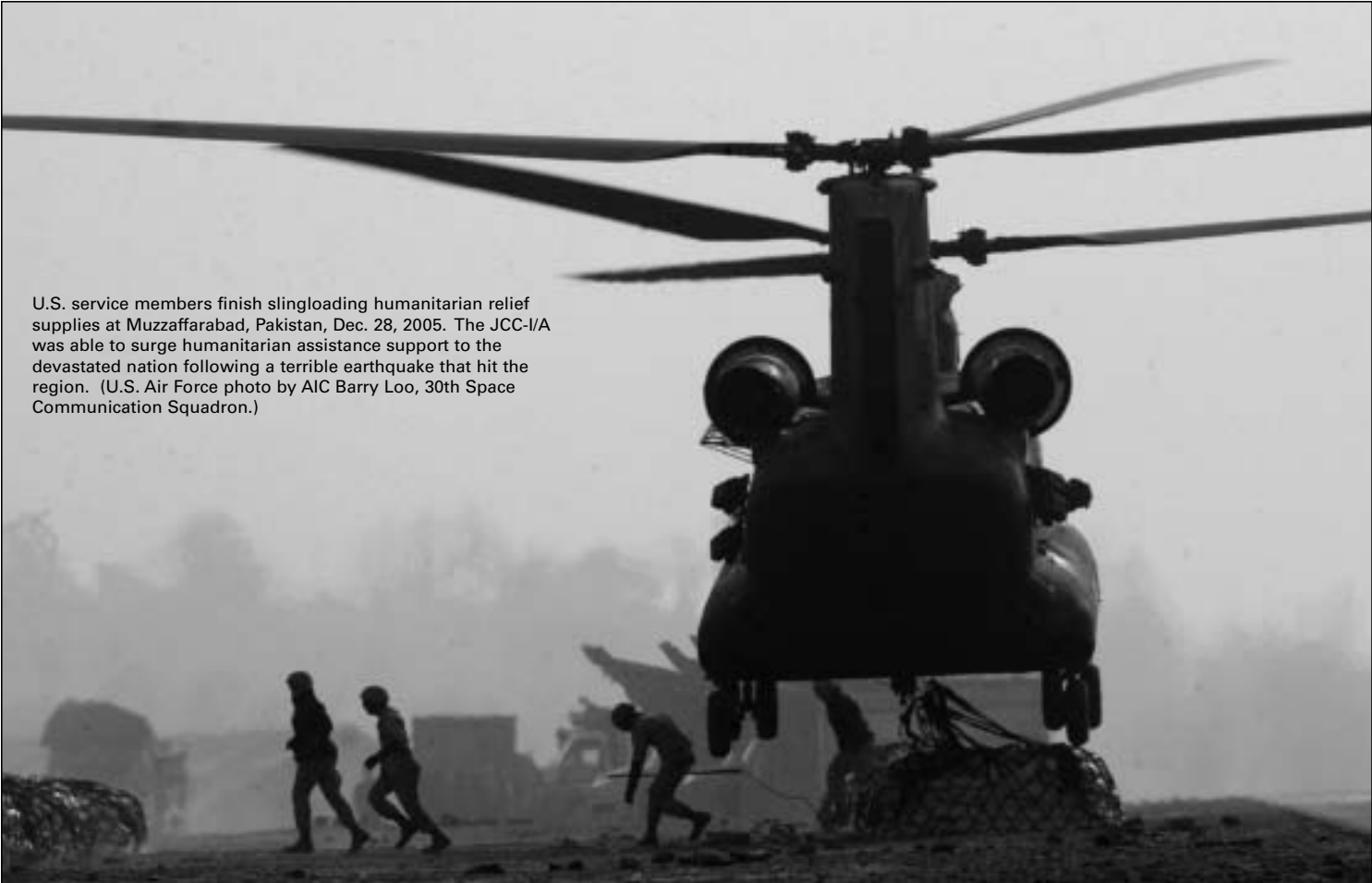
One of our primary focuses is to do our part in creating a self-reliant Iraq and Afghanistan. To do that, our CCOs make every effort to boost the national economies by awarding contracts to host-nation vendors when feasible. About 52 percent of the funds obligated by PARC-F last year went back into the Iraqi economy helping to build infrastructure, provide employment opportunities and encourage business development.

AL&T: Where are you getting your uniformed and civilian contingency contracting personnel?

- JCC-I/A provides operational contracting support to Coalition Forces fighting in Iraq and Afghanistan as they prosecute GWOT. This is primarily a PARC-F mission.
- JCC-I/A provides contracting support to the U.S. Chiefs of Mission to Iraq and Afghanistan



MG Urias, JCC-I/A CG, meets with workers at an Iraqi oil-processing site. One of the JCC-I/A's goals is to work with the Iraqi MoD and MoI to become self-reliant and self-sufficient in reconstructing their own infrastructure and maintaining an efficient, competitive economy while also safeguarding their nation's natural resources. (U.S. Army photo courtesy of JCC-I/A.)

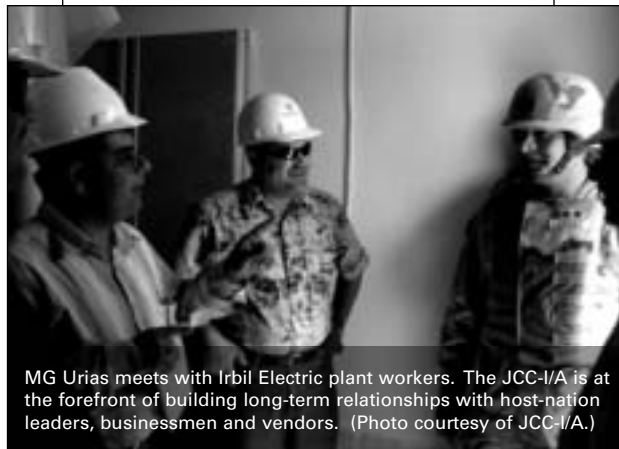


U.S. service members finish slingloading humanitarian relief supplies at Muzaffarabad, Pakistan, Dec. 28, 2005. The JCC-I/A was able to surge humanitarian assistance support to the devastated nation following a terrible earthquake that hit the region. (U.S. Air Force photo by AIC Barry Loo, 30th Space Communication Squadron.)

Urias: Our military personnel are sourced by an approved Joint Manning Document [JMD] with representation from all four services. The JMD establishes the personnel requirement to support PARC-F, PARC-R and a JCC Headquarters and Joint Staff. Through *Sec. 3161* temporary hiring authority [*Temporary Organizations Established by Law and Executive Order*], we are able to bring civilians into theater. These civilians are also on the JMD and provide a vital service in contracting and administration.

required to support the mission's demands. We continue to train as we fight, and Combat Training Centers

civilian personnel are required to satisfactorily complete this critical training prior to entering theater.



MG Urias meets with Irbil Electric plant workers. The JCC-I/A is at the forefront of building long-term relationships with host-nation leaders, businessmen and vendors. (Photo courtesy of JCC-I/A.)

AL&T: Do you have enough personnel resources to accomplish your mission effectively?

Urias: Yes, our personnel resources are directly tied to our warfighting requirements and the operations tempo of the mission. However, we must always remain flexible enough to address the uncertainties of combat and sustainment operations. For example,

AL&T: How are they being trained so they can hit the ground running?

Urias: The JMD established the skill set requirement for those deploying into theater. We work closely with each service as we determine the correct acquisition and contracting skill sets

reinforce contingency and operational contracting practices that have applicability in theaters of operation like Iraq and Afghanistan. For the individual augmentees, the CONUS Replacement Center provides individuals with the basic military survival skills required before entering theater. All military and

we were able to surge into Pakistan following the earthquake in October 2005 to provide humanitarian assistance. We have also plussed-up other units in support of major combat operations. To remain aligned with the changing mission requirements, the JMD is reviewed annually by the Joint Staff.



MG Urias meets with Iraqi Army leaders in Mosul, Iraq, to discuss joint operations and reconstruction initiatives. (Photo courtesy of JCC-I/A)

AL&T: You have worked at many levels of defense acquisition throughout your career. What do you see as the JCC-I/A's major focus or challenge in fulfilling its role as a combat multiplier?

Urias: Our major focus is to support combatant commanders. This is the first time that a Joint Contracting Command has been established to support combatant commanders in a major conflict. The depth and flexibility that JCC-I/A brings to the fight is phenomenal. We support operations from the tactical level up to the strategic level by tailoring a contracting team made up of Soldiers, Sailors, Airmen, Marines and civilians to support our warfighters. As a major subordinate command under MNF-I, the JCC-I/A is able to infuse acquisition perspective into the Commanders Campaign Plan and thereby begin to use contracting as a "strategic effect" within the campaign plan. I believe the JCC model could easily serve as the contracting support

Our mission is to provide responsive operational contracting support to the U.S. Chiefs of Mission, MNF-I and CFC-A to efficiently acquire vital supplies, services and construction in support of Coalition Forces and the relief and reconstruction of Iraq and Afghanistan.

template for future Combatant Command missions. Clearly, it should be evaluated for this application.

AL&T: Has Continuing Resolution Authority (CRA) challenged your organization's capability to support combatant commanders and their warfighters or is sufficient funding available for you to provide ongoing service/support contracts and reconstruction initiatives in both Iraq and Afghanistan?

Urias: To date, the CRA has not had an adverse impact on our mission accomplishment. Cash flow has been adequate to meet immediate requirements and a number of support contracts are not due for renewal until later in the fiscal year. However, it could present a challenge in the second quarter as cash flow tightens and



MG Urias (right) meets with Iraqi MoD members, Oct. 26, 2005, at MoD/Mol Contracting Training Conference, Baghdad, Iraq. Pictured left to right are Andrew Sneden, Contracting Advisor (standing); Ther Badri, Director of Contracting; and Dr. A'adel Alshihkli, Director General of Acquisitions, Logistics and Infrastructure. The conference trained MoD/Mol personnel involved in contracting processes. (Photo courtesy of JCC-I/A.)

more contracts come up for renewal. The primary risk we face resulting from an extended CRA period is the reduced amount of time available to react to adjustments that may be included in the *Defense Appropriation Act* and the funding allocations ultimately assigned. Also, the CRA does not apply to the Iraq Relief and Reconstruction Fund or the Iraq Security Forces Fund because these

multiyear appropriations were previously approved by Congress. These funding lines represent a large proportion of our work and resourcing. Both are available for obligation until the end of FY06.

AL&T: Has CRA affected the PARC's ability to centralize planning and decentralize execution of their respective missions to support forces and reconstruction?

Urias: No, the CRA has not affected the PARC's ability to plan or execute acquisition strategies. Like I said earlier, cash flow has been adequate to meet operational requirements. Given the security environment associated with cultural preferences around the country, and our efforts to keep the funds in the Iraqi economy, decentralized execution has been, and remains, the primary way

of doing business for PARC-F. There has been no impact on PARC-R because of the nature of their funding.

AL&T: How are the PARCs and JCC-I/A improving contracting support and, ultimately, providing better support to your vast customer base in a potentially dangerous, multicultural environment?

Urias: JCC-I/A provides stability and continuity in a turbulent environment where units rotate into theater every

6 to 12 months. We understand the vendor base in Iraq and Afghanistan, and have forged strong relationships with the U.S. Embassy and host-nation leaders. One way we build these long-term relations is through the regionalization of our resources. We strategically locate small contracting cells throughout both AOs, allowing us to establish a trusting relationship with the local vendors. These contracting cells develop a local vendor base, allowing the contracting officers [KOs] to share vendor performance data. Additionally, Web-based tools such as the PARC-F link afford quick access to information such as existing contracts for rapid execution, alternate sources of supply and information sharing between KOs. To maintain momentum in a positive direction, we continue to share lessons learned across both theaters. To facilitate this sharing and continuous improvement, we conduct a semiannual JCC-I/A conference. The highlight of our most recent conference was a local Iraqi panel of businessmen who provided their perspective on contracting with the U.S. government, followed by a question-and-answer session with our staff and KOs.

AL&T: The JCC-I/A works in close coordination with the Iraqi MoD. What are the biggest contracting challenges that still lay ahead for your command with respect to working with the MoD?



MG Urias (right) discusses contracting and project initiatives with Adel Al-Kazaz, Iraqi Director General for the Northern Oil Co., last year. (U.S. Army photo by MAJ J.D. Long, JCC-Kirkuk.)

Urias: The biggest challenges that lay ahead for our command involve “capacity-building” efforts within the MoD. The Ministry of Defense Transition Team [MoDTT] has the mission to train, advise and mentor the MoD Contracting Director General and staff in the development and implementation of acquisition processes to further enhance their contracting capabilities and business practices. The ultimate goal is ministerial self-reliance. The MoDTT is a unique organization comprising advisors from the Department of State, coalition partners, MNSTC-I and acquisition professionals from the JCC-I/A. All these agencies and advisors are working together to establish and enhance the contracting capacity within the Ministry.

We are in the process of developing a business model consistent with Iraqi cultural norms and traditions. We fully understand that the emerging doctrine and procedures may not, and probably should not, “look” like the American model. For example, our government has spent years establishing processes, policies and laws to ascertain that we make every possible effort to ensure the concept of “full and open” competition that is the basis of our business model. This is a major cultural hurdle for us that we may never overcome in this environment, but we must strive to do what is right for the Iraqi people.

In addition to the cultural boundaries the MoDTT faces, there are other challenges that must be taken into

account when developing strategies to enhance the capacity building within the MoD. For example, we are working with a recently established government that is still defining its roles and responsibilities as well as trying to develop a contracting process in its infancy. Supporting the strategic goals of the Iraqi government while establishing training programs within the MoD will take time. These are only a few of the challenges that the MoDTT faces while pursuing the task of building contracting capacity within the Ministry.

AL&T: Any closing thoughts?

Urias: First, I am extremely pleased with the progress we’ve made over the last year as a new command. Having said that, we still have a long

way to go. Most of the growing pains we have yet to experience deal with implementing more disciplined and defined processes and procedures. But our command is composed of top-notch acquisition professionals. They continue to address these challenges — both organizational and operational — with tenacity and perseverance. I salute them for their successes and efforts.

We are in the process of developing a business model consistent with Iraqi cultural norms and traditions. ... This is a major cultural hurdle for us that we may never overcome in this environment, but we must strive to do what is right for the Iraqi people.

LT DANNY HOUGLAN is a Naval Supply Corps Officer serving as the Assistant Operations Officer for the JCC-I/A. He earned his B.S. degree in interdisciplinary studies from Norfolk State University.

Evolution of the Joint Contracting Command-Iraq/Afghanistan

LT Danny Houglan, USN

Commanded by MG John M. Urias, the Joint Contracting Command-Iraq/Afghanistan (JCC-I/A) has established a cohesive “Joint Contracting Team” to support the Combined Joint Operational Area (CJOA) Iraq and CJOA Afghanistan.* The JCC-I/A mission is to “provide responsive operational contracting support to the Chiefs of Mission (Iraq and Afghanistan), Multi-National Force-Iraq (MNF-I) and Combined Forces Command-Afghanistan (CFC-A) to efficiently acquire vital supplies, services and construction in support of the Coalition Forces and the relief and reconstruction of Iraq and Afghanistan.” Though finally achieving the goal of centrally coordinating all contracting within the area of operations (AO) at the theater level, JCC-I/A has evolved by incrementally assimilating contracting organizations that were providing piecemeal support to Coalition Forces.

*Please note that MG Urias changed command with MG Darryl A. Scott, Feb. 2, 2006. See related story on Page 81.

Here, local nationals help a U.S. Soldier offload food and supplies at a hospital. (U.S. Army file photo.)

The Evolution

In the beginning, there was no unity of effort with regard to contracting throughout CJOA Iraq and Afghanistan. This was especially true in the early phase of pure contingency contracting. Under the Coalition Provisional Authority (CPA), DOD set up early-entry contingency contracting operations in Iraq. The first agency, the Iraq Program Management Office, provided contracting support for both reconstruction and Coalition Forces as early as January 2003. By the summer of 2003, there were numerous contracting agencies operating independently of each other with little interaction and coordination between the organizations. Among these were the Coalition Joint Task Force, 24 military contracting personnel supporting 120,000 U.S. forces; the CPA's Project and Contracting Office, focusing on Iraq's reconstruction contracting effort; the U.S. Army Corps of Engineers, working construction and civil engineering projects; the Defense Contract Management Agency, coordinating Logistics Civil Augmentation Program

support; and Special Operations contracting teams, working various missions throughout the country.

"Addressing existing and emerging contracting challenges, as assessed in the February-March 2004 time frame, could not be effectively managed without a dramatic shift in the manner in which contracting operations were organized and conducted," wrote LTC Jack L. Cunnane in his summer 2005 article, "The Evolution of Contracting in Iraq March 2003-March 2005," *Journal of Contract Management*.

Within 18 months, reconstruction contracting responsibilities transferred to the U.S. Department of State, Chief of Mission-Iraq. Then, in November 2004, U.S. Central Command (CENTCOM) *Fragmentary Order (FRAGO) 09-668, Contracting and Organizational Changes*, Nov. 12, 2004, created the JCC-I as a major subordinate command (MSC) of the MNF-I. The consolidation's focus in the contracting organization and reporting relationships was to create unity of effort in providing contracting support to

better leverage contracting resources and expertise for efficiency across the entire theater.

To facilitate contracting efficiency, Assistant Secretary of the Army for Acquisition, Logistics and Technology Claude M. Bolton Jr., having already been designated the DOD Executive Agent for contracting in Iraq, established the Commander JCC-I as the Head of Contracting Activity (HCA) for Iraq reconstruction and Coalition Forces contracting support.

JCC-I was established Jan. 29, 2005, and immediately set out to build the then nascent command and integrate itself as an MSC under MNF-I. In July 2005, CENTCOM issued *FRAGO 09-790 Contracting and Organizational Changes*, July 2, 2005, bringing contracting in the CJOA Afghanistan under JCC-I/A HCA authority. JCC-I/A has continued to make a tremendous impact throughout both theaters of operation by providing diverse contracting support to many customers. The success of



A U.S. Army CH-47 Chinook carries humanitarian relief supplies to Muzaffarabad, Pakistan, Jan. 4, 2006. The RCC in Pakistan, one of 15 in the JCC-I/A theater of operations, is providing humanitarian aid in direct support to the U.S. State Department by providing disaster relief supplies and services following the massive earthquake that struck Pakistan and parts of India and Afghanistan. (U.S. Air Force photo by 1LT Chad Leisenring, 30th Space Communications Squadron.)

JCC-I/A's diversity can be attributed to the two Principal Assistants Responsible for Contracting-Forces (PARC-F) and -Reconstruction (PARC-R).

The PARCs

Each PARC's fundamental responsibility is to provide operational contracting support to their respective customer base. However, each PARC's customer base is vastly different. PARC-F supports MNF-I, Multi-National Corps-Iraq, CFC-A and Combined Joint Task Force-76-Afghanistan: the Soldiers, Marines, Airmen and Sailors on the ground fighting the fight. PARC-F also supports the Office of Security Cooperation-Afghanistan, which is responsible for training and equipping the Afghan National Army and Afghan National Police. PARC-R provides contracting support to the U.S. Chief of Mission-Iraq as he provides for the relief and reconstruction of Iraq. PARC-R also provides contracting support to the Multi-National Security Transition

Command-Iraq (MNSTC-I) as it rebuilds Iraq's security forces.

PARC-R is segregated into five major sectors: Security and Justice, Facilities and Transportation, Public Works and Water Resources, Oil and Electricity. In addition to the five sectors, there are four Regional Contracting Offices (RCOs) located throughout Iraq — in Baghdad, Hillah, Kirkuk and Basra — to support local contracting requirements in each respective region. The Security and Justice sector directly supports MNSTC-I and specializes in contracting for life support services and training for Iraqi

army, police service, border enforcement, and fire and emergency services. The Facilities and Transportation sector is responsible for contracts in the construction and/or repair of hospitals, healthcare clinics, Iraqi government buildings, prisons, firefighting stations, border forts, courthouse and training facilities, and warehousing and distribution of reconstruction supplies. The Public Works and Water Resources, Oil and Electricity sectors are the primary contracting entities for rebuilding and/or repairing the infrastructure within their respective areas, including water supply and distribution and wastewater treatment; oil drilling, transportation and refining; and power generation facilities, substations and installation of transmission lines.

Just one sample of the myriad contracts that have been awarded for Iraqi reconstruction with the assistance of JCC-I/A's PARC-R is the successful IRR from Umm Qasr to Baghdad Railroad Central. JCC-I/A contracted with



The Iraq Republic Railroad (IRR) that runs from Umm Qasr to Baghdad is being used to move Coalition Forces supplies and equipment. A shorter way increases efficiency and reduces the risk of the supplies being intercepted. (Photo courtesy of IRR.)

IRR at a cost of \$210,000 per one-way trip. The first transport moved \$1.1 million worth of freight consisting of new pickup trucks, excavators, hospital beds and forklifts. The total freight shipping cost was \$13,800. To ship the same freight via highway would have cost \$74,000, a cost savings of \$60,200 just with the first shipment alone. The railway will increase efficiency and will play a large role in the Iraqis rebuilding their economy and nation.

PARC-F is equally credited with the success of the JCC-I/A. Throughout the evolution of JCC-I/A, PARC-F's primary mission has increased with continual persistence in improving customer support. PARC-F provides operational contracting support for rapid fulfillment of all warfighting requirements, including life support services, force protection, minor construction and combat support services.

The key to PARC-F's success has been centralized planning and decentralized execution of contracting support. In addition, through the centralized planning process, PARC-F has identified commodities and services where theater support contracts can provide more efficient support to the forces versus numerous individual purchases. Critical among these centralized efforts is an effort for installing six bottled

water plants around Iraq. The result of this effort will be a savings of \$8 per case of water, 20 percent reduction in convoy traffic and countless lives saved from the threat of improvised explosive devices and roadside bombs. There are 10 Regional Contracting Centers (RCCs) strategically located throughout Iraq, another four RCCs in Afghanistan with one RCC in Pakistan providing earthquake and disaster relief and humanitarian aid. RCCs are generally located in the regions of the countries with access to vendors who can supply or get access to required goods and services. It's from these more populated parts of the country that the RCCs support the warfighting units within their geographical area. PARC-F supports the troops with a diverse mix of commodities, services and minor construction.

JCC-I/A and HCA

Under MG Urias' leadership, JCC-I/A has evolved into the successful contracting command that it is today, providing contracting support across two AOs. In FY05, the command

accomplished more than 25,000 contractual actions valued at approximately \$8 billion. The JCC-I/A is dedicated to supporting the purpose of the FRAGOs that established them — efficiently acquire essential supplies and services for the warfighter in



The JCC-I/A has been instrumental in working with the Iraqi MoD to develop strategic business models to establish and enhance contracting capacity. The next step is to help the Iraqi people revitalize their economy through modernized factories and manufacturing capabilities. Here, a water bottling plant in Balad, Iraq, increases its production capacity. (Photo courtesy of the JCC-I/A.)

Iraq and Afghanistan and for the relief and reconstruction of Iraq and Afghanistan. The endstate for JCC-I/A, quoted from both FRAGOs, is twofold:

- Through unity of effort, achieve economies of scale that exemplify best business practices and serve as a model for commerce in CJOA Iraq and CJOA Afghanistan.
- Through synergy with economic activities in local private and public sectors, be a catalyst for economic growth and the resulting peace.

MG Urias' focus for establishing a self-reliant Iraq is illustrated through close coordination with the Iraqi Ministry of Defense (MoD). One of the key elements that are enabling JCC-I/A to reach this required endstate is the contracting advisors that they have embedded into the MoD. JCC-I/A advisors, along with coalition advisors, continue to assist MoD officials with building self-sufficient procurement systems and processes.

LT DANNY HOUGLAN is a Naval Supply Corps Officer serving as the Assistant Operations Officer for the JCC-I/A. He earned his B.S. degree in interdisciplinary studies from Norfolk State University.



Thanks to coordinated efforts between the JCC-I/A and the Iraqi Ministries of Defense and the Interior, the future of Iraq holds great economic promise for this beleaguered nation's youth. (U.S. Army photo by MAJ J.D. Long, JCC-Kirkuk.)

Obsolescence in Repair Parts Sustainment – Time for a New Paradigm

David G. Fieltsch and Greg Phillips

Because of underlying rapid technological advancements in the electronics industry and relatively low density of Army fielded equipment, obsolescence issues are of great concern to the Army's Communications and Electronics Life Cycle Management Command (CELCMC). An examination of the Single Channel Ground and Airborne Radio System (SINCGARS) acquisition serves to highlight the parts obsolescence problem and further provide a solution to fund obsolescence redesigns. The solution proposed has great potential for many applications for DOD weapon systems and is a solution that anticipates change rather than just reacts to it.

SGT Christopher Gonzalez, from 3rd Brigade, 3rd Infantry Division, loads radio frequencies into the communications system of his Bradley Fighting Vehicle (BFV) prior to a mission in Baqubah, Iraq, Aug. 12, 2005. (U.S. Army photo by SSG Suzanne Day.)

SINGARS is a mission-critical defense system providing commanders with a highly reliable, secure, easily maintained Combat Net Radio that has both voice and data handling capability in support of battle command operations. More than 250,000 SINGARS radios have been fielded to date, and SINGARS has faced its fair share of parts obsolescence problems over the years. These problems are expected to continue and accelerate as the system ages across the entire SINGARS Family of Radios. As a result, lengthy procurement lead times have occurred because of the time to redesign and fund obsolescence problems.

Historically, on items with active contracts and production lines, the mechanism most often used to incorporate obsolescence fixes into equipment is a change to the contract by incorporating an Engineering Change Proposal (ECP). This entails delaying production, defining the change, communicating it to the contractor and identifying funding to execute the change. Production is not restarted until the redesign is complete and negotiated into the contract. This results in lengthy delays in getting spares to our warfighters.

Often, ECPs consist of both recurring and nonrecurring efforts. The recurring effort can be integrated into the contractual unit prices and the non-recurring effort, paid in one lump sum. However, locating funding for the lump sum has always been an issue because those funds are never programmed or available at the critical time of need. Further complicating matters is using the Army Working Capital Fund (AWCF) during sustainment of a system to procure and repair spare parts. It is imperative to capture the nonrecurring costs in the price of an item to be able to recoup the investment when the part is "sold" to the field. The nonrecurring effort is a one-time expense and incorporating it into just the current order would astronomically inflate the actual item's cost.

The New Paradigm

To address SINGARS obsolescence issues, an acquisition strategy was

developed that put the risk on the contractor for configuration control and parts obsolescence management. A competitive solicitation for a 5-year Indefinite Delivery, Indefinite Quantity type contract was issued that required the contractor to incorporate the obsolescence costs into the contract unit prices. Competition would guarantee fair, reasonable and affordable prices, ensuring the government would have a best-case situation.

Because the contractor would still be required to meet scheduled deliveries, the time cost of previous obsolescence-induced changes would be solved. Also, the issue of AWCF pricing would be solved, as sales to Operation and Maintenance field accounts would already have the cost of obsolescence included in the unit prices. No more obsolescence price increases, no more searching for "lump sums of money" and no more delays in fielding spares to Soldiers on the front lines.



CELCMC's innovative approach to obsolescence will ensure that battlefield commanders don't pay the price when SINGARS spare parts are needed in the future. Here, Soldiers from 1st Battalion, 15th Infantry Division, Fort Benning, GA, provide perimeter defense from their BFVs outside Samarra, Iraq, May 29, 2005. (U.S. Air Force photo by SMSG Kim M. Allain.)



SINCGARS is a mission-critical radio system providing battlefield commanders with highly reliable and secure voice and data communications capability. To date, more than 250,000 SINCGARS radios have been fielded DOD-wide. Here, Soldiers from the 502nd Infantry Regiment, 101st Airborne Division, search for insurgents along the Euphrates River southwest of Baghdad, Iraq, Dec. 6, 2005. (U.S. Army photo by 2LT Paul Fisher.)

Scottish Poet Robert Burns is often quoted, “The best-laid schemes o’ mice an’ men gang aft agley” (often go astray). This was the case here as the uncertainty and unknowns involved with obsolescence resulted in the contractor’s proposal being unaffordable because of the contractor pricing in the obsolescence risk for the worst-case scenario. When the initial SINCGARS acquisition strategy did not result in an affordable option, the necessity to better support our warfighters became the mother of invention. Rather than just accepting the proposed fix as unaffordable and going back to the old way of doing business, Team Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) partnered with industry and developed an entirely new and innovative business solution that became the contractual clause titled “Internal Obsolescence Risk Reserve Fund.”

This contract clause clearly states that a Reserve Fund is established to proactively manage obsolescence-related efforts including, but not be limited to, the acquisition of lifetime or last-time component parts buys, the

temporary acquisition of long-lead material and the conduct of obsolescence redesigns determined to be necessary to provide continuing support to SINCGARS per an Obsolescence Management Plan. This unique contractual clause represents a life-cycle management approach, the culmination of many hours of intense negotiations, a true partnering relationship between the contractor and the government and a willingness to acknowledge and manage risk.

The innovative approach establishes a contractual dual-pricing structure, with main contract pricing consisting of a base production price loaded with an obsolescence add-on amount and alternate contract pricing consisting of the base production price alone. The clause also explains the Reserve Fund’s two trigger points, also known as lower (floor) and upper (ceiling) thresholds. When orders are initially issued, main contract pricing is used and the obsolescence add-on amount feeds directly into the Reserve Fund. All subsequent orders also contain this add-on until the fund ceiling is reached. Once the ceiling is reached,

alternate pricing (production price only) is in effect and stays that way until the Reserve Fund is depleted down to the floor. At that time, the process reverts to charging the higher main contract price if funds for obsolescence are still needed. The funds accumulated into the Reserve Fund are then used to pay for parts obsolescence as needed.

In addition to providing upfront funding for obsolescence issues, this approach also requires the contractor to proactively research and resolve obsolescence issues on parts even before the parts are ordered. This process substantially reduces production lead times and ensures the fastest troop support possible.

Another interesting Reserve Fund feature is found in the contractually required annual review of fund expenditures and achievements. If needed, depending on the magnitude of the obsolescence problem, the ceiling and the floor could each be adjusted. That is, it is a flexible approach designed to stay flexible. The fund will also be monitored so that as the contract approaches close out, the fund is drawn down and any remaining funding could be used to acquire forecasted



SPC Adam Alford, 946th Forward Surgical Team, U.S. Army Reserve, uses SINCGARS during a field training exercise. (U.S. Army photo by SSG John Marlow.)

obsolete parts that can then be provided as Government Furnished Property for the follow-on contract.

One final aspect of this clause is that the contractor is paid to maintain configuration control and, as such, is responsible for obsolescence mitigation plans. This should prevent many future obsolescence problems and at least mitigate all others. The bottom line is that the Reserve Fund allows for the flexibility to proactively plan for obsolescence fixes with funds already on contract.

This approach provides two tremendous advantages for the government and our warfighters:

- Reduces procurement lead time for getting obsolescence issues resolved and necessary spare parts delivered to our warfighters quickly since funding for obsolescence redesigns will already be on contract.
- Reduces the cost of obsolescence priced into the initial proposal and actually makes the acquisition affordable because obsolescence is paid for across the entire system rather than paying the entire obsolescence bill in any given order or component out of budget cycle.

The SINCGARS team's evolutionary approach to obsolescence obtains delivery of fixes as they become available rather than waiting until all administrative obstacles are satisfied. It is analogous to spiral development with each dollar in savings representing a dollar available elsewhere to support warfighters.

Keys to the New Paradigm

Necessity and creative thinking can be a powerful combination benefiting our warfighters. To use the SINCGARS example, several key elements must be present:



Tactical radio communications are absolutely essential for units on the move. Here, a Joint Marine, Navy and Army convoy prepares to leave Camp Al Taqaddum for an engineer site at Mustafa Rock Quarry, Iraq, March, 14, 2005. (U.S. Marine Corps photo by CPL Marsha N. Garcia.)

- A true government/contractor partnership must be established. A high level of mutual trust, along with an absence of a litigious environment, is paramount. The contractor must proactively manage its databases for obsolescence and mutually ensure that mission creep does not leak into this effort. For example, the Reserve Fund is not intended to provide for enhancements — such actions would violate funding statutes. Obviously, given the sums of funding involved, certain audit checks and balances must be established, but these must not color the environment.
- It is critical that both the government and contractor establish action-oriented, extremely well-focused multifunctional teams. The Reserve Fund mechanism requires greater surveillance and partner involvement. This increased upfront effort greatly mitigates that which would normally follow, actually decreasing the overall program efforts.
- The government/contractor team must recognize the complex contract administration that is needed and resulting volume of administrative

efforts as the contract term nears completion. The obsolescence team must essentially make best-value-type decisions as to when and how to make use of Reserve Fund dollars. The intent is to ensure that no obligated funds are left on contract so that the contractor receives an unintended windfall.

Clearly, this proposed paradigm shift may not work for every system. For example, it may not be applicable for equipment that may soon be replaced, for commercial applications or for low-density systems. However, for many systems suffering similar obsolescence problems, the innovative SINCGARS approach to obsolescence could be expanded for their use. Even for those systems where the SINCGARS Reserve Fund does not fit, the need to fully support our warfighters should give rise to the desire, willingness and creative atmosphere to develop other workable solutions.

DAVID G. FIELTSCH is the Chief of the Warfighter Information Network-Tactical/Tactical Radio Communications Systems Group in the CELCMC's Acquisition Center, Fort Monmouth, NJ. He holds a B.S. in mathematics and economics from the University of Pittsburgh and an M.S. in management from the Florida Institute of Technology. He is also Level III certified in contracting and is an Army Acquisition Corps (AAC) member.

GREG PHILLIPS is Chief of the Military Satellite Communications Tactical Division in the Communications Directorate of the Logistics and Readiness Center, CELCMC, Fort Monmouth. He holds a B.S. in mechanical engineering from Rutgers University and an M.B.A. from Monmouth University. Phillips is an AAC member who is Level III certified in systems planning, research, development and engineering.

Revolutionizing Logistics Support and Revitalizing the Army's Contingency Contracting Capabilities

• SGM Ethan A. Jones

With limited resources around every corner, the Army continues to redefine and reshape its forces to become more lethal, survivable, sustainable and adaptable on an extremely fluid battlefield. Today's Army is a modular, power-projection force that's designed to pull resources of any type from any part of the world — mission, enemy, terrain and weather, troops available and civilian (METT-TC)-dependent. As the Army continues restructuring its Future Force structure to deter, deny and defeat U.S. adversaries anywhere in the world, the contingency contracting workforce must now redefine itself to meet anticipated requirements, supporting both conventional and unconventional forces.

PVT Raef Hardin (right) and SPC Jade Harris (second from left) help crew chief SSG Brian Ogle (left) load Meals, Ready-to-Eat and bottled water onto a CH-47 Chinook helicopter at Ellington Field, TX, Sept. 27, 2005, as part of DOD's disaster relief support in the wake of Hurricane Rita. (U.S. Air Force photo by TSGT Cherie A. Thurlby.)

This reshaping requires an integrated acquisition, logistics and technology (AL&T) capability, including contracting. The Army Materiel Command Forward — now called the Army Field Support Brigade (AFSB) — will expand its mission and add AL&T capabilities to its existing logistics base. The AL&T core forward-projected capabilities include standardized and centralized AL&T planning, doctrine, concepts, solutions and processes in the areas of test and evaluation, Army Oil Analysis Program, brigade logistics support teams, Rapid Fielding Initiative (RFI), field assistance in science and technology (S&T), spiral developments, Logistic Assistance Program, total life-cycle management, Logistics Civilian Augmentation Program (LOGCAP) and the other AL&T functions.

This modularity concept is consistent with the transformation requirements established per HQDA's *Army Campaign Plan*, dated April 12, 2004. The AL&T Modular Support Concept increases Army strategic responsiveness and enhances operational and tactical agility across the full spectrum of operations from national homeland defense and disaster response to major combat operations by providing the Army Service Component Commanders and Theater Sustainment Command (TSC) commanders a single node for orchestrating critical AL&T capabilities.

The contingency contracting force will realign as part of the Army Field Support Command (AFSC) into modular contracting headquarters Principal Assistants Responsible for Contracting (PARCs), battalions and teams — all service components. The Force Development Update (FDU) for the contracting force structure aligns with the Army Modular Expeditionary Force package by providing streamlined contracting support. Mission contracting

planners command significant modular contracting force structure, allowing the theater contracting commander (PARC) to both plan and execute support for Army and Joint forces operating throughout his theater of operations. Mission commanders requiring contracting capabilities will be able to use Time-Phased Force Deployment List AL&T contracting teams and/or battalions — based on mission requirements — to augment deployed assets. Army planners can deploy additional contracting commanders/PARCs, as required to sustain multiple, simultaneous operations.

Having the capability to purchase supplies, equipment and services in and around the mission area is a vital and integrated aspect of logistics support. It reduces the logistical tail, thereby freeing up limited transportation assets to support other missions. From this standpoint, contingency contracting becomes a formidable force multiplier for combatant commanders by allowing the deployable commanders the operational flexibility to bring additional combat systems to fight and win decisively. A Brigade Combat Team (BCT) must have the capability to deploy and sustain itself for the first 30 days. As a rule, innovative and creative logistics and sustainment support is required, and contracting will be the force multiplier that makes things happen.

The FDU structure establishes a number of AL&T Procurement Noncommissioned Officer (NCO) positions. One of many challenges will be ensuring the Army has sufficient numbers of trained, experienced and certified AL&T Procurement NCOs to support its core contracting mission for all components. Although the Air Force and Marine Corps have well-defined and established career fields in contracting for their assigned NCOs, the Army is just now developing its own



AL&T Procurement NCOs and MOS 51C-CCOs have been heavily involved in logistics support throughout *Operations Enduring and Iraqi Freedom*. Here, 1st Armored Division Soldiers load supplies aboard a Black Hawk helicopter for transport to a remote location. (U.S. Army photo by SSG Tony Sailer.)

Military Occupational Specialty (MOS) in contracting for its E-6 to E-9 NCOs in projected MOS 51C-Contracting, all components. Currently, Procurement NCOs are in MOS 92A/Y, Quartermaster NCOs in skill levels 3/4/5, and in all components, with an Additional Skill Identifier of G1-Contract Agent, that allows them to perform 3- to 4-year tours in contracting, supporting both conventional and unconventional forces.

Currently, Procurement NCOs serving tours of duty in contracting must return to their basic branch to remain competitive for Army promotions. Procurement NCOs in contracting acquire highly perishable skills and training, and when Procurement NCOs return to their basic branches, the Army and contracting community lose valuable, trained assets. Continuous changes in the contracting environment, laws, regulations, policies and statutes require continuity and stability among all military contracting personnel.

Since *Operations Enduring and Iraqi Freedom*, Procurement NCOs have been one of the most deployed — and decorated — groups of Soldiers, receiving 12 bronze stars and one Combat Action Badge for their contributions and selfless service. Procurement NCOs supplement Area of Concentration 51C-Contingency Contracting Officers (CCOs) by reducing back-to-back CCO deployments and by planning and working complex contracting actions. NCOs can also become warranted CCOs and receive the same level of training as officers and emergency-essential DA civilian contract specialists in the 1102 series.

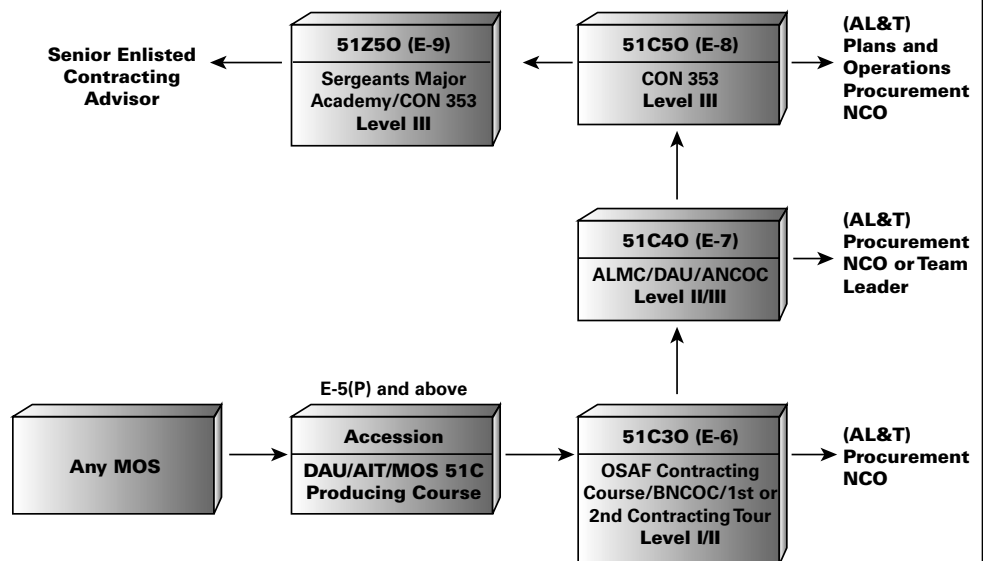
In the future, AL&T Procurement NCOs will be accessed in their eighth year of service in their original MOS, but no earlier than sergeant promotable (E-5(P)). Unlike the

Army's sister services, the purpose of delayed accession into the AL&T Procurement NCO series allows NCOs to gain the basic fundamentals of Soldiering and leadership, as well as operational and doctrinal experience — much like the Special Operations Forces (SOF) model. The chart below highlights the proposed career progression for MOS 51C NCOs.

Having the capability to purchase supplies, equipment and services in and around the mission area is a vital and integrated aspect of logistics support. It reduces the logistical tail, thereby freeing up limited transportation assets to support other missions.

AL&T Procurement Professional Development Model

The Advanced Individual Training (AIT) for newly accessed NCOs in the rank of sergeant promotable through sergeant first class (E-7) with less than 10 years of active service awarded MOS 51C must successfully complete the following Defense Acquisition University (DAU) courses in contracting within a set time frame:



Proposed Career Progression MOS 51C



Soldiers slingload a Humvee to a CH-47 Chinook helicopter during an operation near Bagram, Afghanistan. The Soldiers are assigned to the 25th Infantry Division, supporting the Joint Logistics Command during *Operation Enduring Freedom*. (U.S. Army photo by SFC Sandra Watkins-Keough.)

- CON 100 — Shaping Smart Business.
- CON 110 — Mission Support Planning.
- CON 111 — Mission Support Execution.
- CON 112 — Mission Performance Assessment.
- CON 234 — Contingency Contracting (elective course).
- CON 237 — Simplified Acquisition Procedures (elective course).

After the AL&T Procurement NCO has successfully served his/her first or second tour in contracting and is selected for further advancement, he/she will attend the U.S. Air Force Mission

Airmen Ready Contract Apprentice Course (MARCAC), Lackland Air Force Base, TX, which is the Army's Basic Noncommissioned Officer Course (BNCOC) equivalent. This 8-week course will provide the AL&T Procurement NCO with basic contracting technical skill sets and computer lab base training programs. Upon graduation from the MARCAC, the AL&T Procurement NCO will receive his/her certification for course completion and DAU Level I or II certification in contracting, providing all *Defense Acquisition Workforce Improvement Act (DAWIA)* prerequisites have

been accomplished. After advancing to the rank of E-7 and completing his/her third or fourth tour in contracting, the AL&T Procurement NCO will be selected to attend

the Army Logistic Management College (ALMC), DAU Advanced Contracting Course, Huntsville, AL, which is the Army's Advanced Noncommissioned Officer Course (ANCOC) equivalent. After successful completion of four weeks of advanced contracting, the AL&T Procurement NCO will receive a course completion certificate and a DAU Level II or III certification in contracting, if all other *DAWIA* prerequisites have been met. Once the AL&T Procurement NCO reaches the rank of master sergeant (E-8) or sergeant major (E-9), he/she will attend the 2-week CON 353-Advanced Business Solutions for Mission Support DAU Level III contracting certification training course.

The Army Chief of Staff's guidance is to use smaller, more tailored forces, including low-density skill sets that require unity of effort and continuity while meeting logistics challenges. Today, contracting supports the full battlefield spectrum for modularity, Joint, coalition and SOF. The AFSB will be the single node for AL&T projected forward capabilities and will maximize efficiencies while providing viable solutions and processes to the warfighter.

SGM ETHAN A. JONES is the Senior Enlisted Advisor to the Director, U.S. Army Contracting Agency, and the principal advisor to the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT) and the Military Deputy to the ASAALT on all related Contracting NCO issues. He has participated in numerous contingency contracting and logistics operations throughout the Middle East, Asia, Europe and the Balkans. He holds a bachelor's degree in public relations from Paine College and is pursuing a master's degree in acquisition management. Jones is Level III certified in contracting.



A 3rd Corps Support Command convoy moves supplies into Baghdad, Iraq, to support U.S. and Coalition Force operations. New modular logistics organizations such as AFSCs, AFSBs and TSCs will provide dedicated logistics and sustainment support to the Future Force. (U.S. Army photo.)

A Successful Alpha Contracting Experience

Ronald J. Rapka, Evonne Heyward, Brett Boyle and Scott Godin

What we are about to describe was based on an actual Alpha Contracting experience between the Team Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (Team C4ISR), at Fort Monmouth, NJ; the Signal Center (SIGCEN), Fort Gordon, GA; and General Dynamics, C4 Systems (GDC4S), Taunton, MA; which occurred over a 26-day period in September 2004. Team C4ISR members, primarily the Communications Electronics Life Cycle Management Command (CELCMC) Acquisition Center, Project Manager Tactical Radio Communications Systems (PM TRCS), CELCMC Legal together with SIGCEN and GDC4S, used Alpha Contracting to design, develop and provide Joint Network Node (JNN) training suites and training simulators. JNN is the bridge to future combat networks between Mobile Subscriber Equipment (MSE) radios and Warfighter Information Network-Tactical (WIN-T), the Army's communications network system for tomorrow. JNN is the most sophisticated, state-of-the-art technology communications equipment that is fielded today. The JNN training suites and simulation requirement came from a LTG Steven Boutelle — the Army Chief Information Officer and G-6— directive when he learned that, although unit training was provided for, there was no institutional training for JNN. Simply stated, unit training trains an entire unit of warfighters whereas institutional training trains replacements to the units. For the SIGCEN to be able to train troops on JNN equipment in January 2005, the training suites had to be procured and the contract had to be 100-percent definitized no later than Sept. 30, 2004.

TRCS and JNN will provide the tactical radio communications bridge to the Future Force. The Alpha Contracting process is putting state-of-the-art communications equipment in the hands of Soldiers today. (DOD photo.)

Alpha Contracting — Breaking Down the Walls

Although Alpha Contracting takes many forms, it amounts to an accelerated contractual process whereby two or more parties, such as the government and a contractor, work together simultaneously as a team to develop a proposal and negotiate a contract. Traditionally, the contracting process involves separate activities — which usually involves contracting, program management, legal, small business and auditors, just to name a few — of the government and the contractor working independently in developing their positions for the requirement.

After completing their respective tasks, the various entities provide their input

to the contracting officer who merges their information into one proposal or offer and then the negotiation process begins with the government and contractor on opposing sides. As issues are raised during negotiations, each side would confer with various subject matter experts of their respective organizations for comments and backup support. The process repeats itself over and over again until an agreement is reached and negotiations are concluded. The problem with this process is that it is time-consuming, a duplication of effort and can cause friction between the parties,

whereby negotiations may be stalled or collapse.

Alpha Contracting can only be successful if it has support from top leadership from both the government and contractor.

Alpha Contracting breaks down the walls between the organizations and makes each side's proposal or offer transparent. This process speeds up the cycle time for a new acquisition and dramatically reduces duplicative efforts. The organizations do not wait for a complete proposal or offer to be developed, but share information as it becomes available. For example, if a subcontractor submits a proposal to the prime contractor, the prime will share the

subcontractor's information with the government upon receipt, even if the prime has not yet completed its own proposal. An audit and technical evaluation can take place on the subcontract effort, thereby allowing both parties to start negotiations early in the process. This may result in a negotiated subcontractor effort being incorporated into the prime contractor's proposal making that action already completed even before the government receives the prime's complete proposal.

Alpha Contracting may be a more intense effort for the individuals participating than normal contracting procedures, but if all parties are committed to the process, it will dramatically speed up award of a new sole-source requirement and can create a collegial atmosphere of sharing information.

Top Management Support

Alpha Contracting can only be successful if it has support from top leadership from both the government and contractor. In our successful Alpha Contracting experience, we received top management support from Boutelle; MG Michael R. Mazzucchi,



CPL David Segrest (left), radio operator, and SGT Tracey Sourbeck, heavy equipment repairman, Explosive Hazards and Awareness Team, 200th Engineer Battalion, Alabama Army National Guard, take up a security position just outside Camp Victory, Iraq, in May 2005. (U.S. Army photo by SGT Michael Carden.)

Commanding General (CG), CELCMC and Program Executive Officer Command, Control and Communications Tactical; BG Janet Hicks, CG Fort Gordon and SIGCEN; Edward Elgart, Director CELCMC Acquisition Center; and Mark Fried, President, GDC4S Communications Networks Division. In addition, senior management from each organization made allowances for their limited resources to be diverted from other

important activities to make the Alpha Contracting process a top priority.

In our case, Robert Golden, PM TRCS; COL Michael Cordes, Director of Training, SIGCEN; John Martin, Vice President, GDC4S; Heath Fisk, Manager of Contracts, GDC4S Communication Network Division Contracts; and Gary Estler, Director, Systems Support, GDC4S Program Management, relayed to their respective workforces that this requirement was a top priority. Without leadership and top management support, combined with their commitment to provide the appropriate resources to get the job done, our Alpha Contracting experience could have been a disaster.

Trust

Alpha Contracting will not be successful if the government and contractor do not trust each other. Each side must be open and honest relative to their respective positions. Keep in mind that each side is developing real-time positions and it is critical to the processes' success that communications are constant and open. If one side believes that the other side is holding



SPC Dustin Bonina, Co. A, 181st Infantry Regiment, 29th Infantry Division, maintains radio contact with his unit headquarters while conducting an outer perimeter security patrol of the Guantanamo Bay detention facility in Cuba. (U.S. Army photo by SGT Jolene Staker.)

back pertinent information, the Alpha Contracting process will falter. The government and contractor have to foster a climate of trust or Alpha Contracting will fail. In our situation, candid discussions started from day one and carried through negotiations to award and even post-award. Open communications on both sides were the norm.

Commitment and Focus

Although the amount of work involved in Alpha Contracting is the same as it is with the normal procurement process, the effort is a lot more intense. All required procedures must be accomplished, but the time it takes to complete the entire contracting process is reduced dramatically. Both sides must be focused on what has to get accomplished and when. For example, in our Alpha Contracting experience, the normal cycle time allotted was 120 working days from receipt of a qualified acquisition requirements package. We completed the entire Alpha process in 26 calendar days and just 18 calendar days from the request for a proposal. During one weekend alone, our team averaged more than 30 hours in overtime per person to make the award happen quickly. If all parties involved are not willing to make a full commitment to the process, it will not work.

Computer Resources

Alpha Contracting can benefit tremendously from having computer tools that assist in developing and displaying the information. We conducted most of our negotiations in a large conference room that used a computer networked with several big screens that surrounded the room giving everyone visibility into what was being developed. Because this was being done in real time, everyone had the opportunity to contribute their respective points to the negotiations and see the changes implemented instantly. For this acquisition, we implemented a color-coded scheme that allowed everyone to know whose position it was and what day that position was developed. This allowed us to view an entire document that was being developed before our eyes while at the same time recognize which organization contributed the corresponding information. We found it dramatically sped up the process, was an excellent method to keep track of each organization's input and allowed everyone to share the same real-time information.

Alpha Contracting is a great process to reduce cycle time for a sole source acquisition. It will only work if it has top leadership support, if each side trusts the other and if the people doing the work are 100-percent committed to the project. The process will be aided tremendously if computer resources are used that allow everyone to know each side's position and what issues have been resolved. In our case, if an agreement could not be reached within a few weeks, the funds would have expired and we would not have a contract. Not only would both sides have failed to reach an agreement but

we would have also let the warfighters we support down. We were committed to not letting that happen. Both sides knew what was at stake and, by working as a team, we achieved unilateral success.

RONALD J. RAPKA previously served as Chief, PM WIN-T/TRCS Group in the CELCMC's Acquisition Center, Fort Monmouth. He was recently promoted to Acquisition Manager, Combat Ammunition Systems, PEO Ammunition, Picatinny Arsenal, NJ. He holds a B.S. in accounting from Seton Hall University and an M.B.A. from Monmouth University. He is Level III certified in contracting, purchasing and auditing; Level II certified in program management; and is an Army Acquisition Corps member. Rapka is also a Certified Public Accountant.

EVONNE HEYWARD serves as a Contracting Officer/Lead Contract Specialist for PM WIN-T/TRCS Group in the CELCMC's Acquisition Center, Fort Monmouth. She holds a B.A. in business administration from New Jersey City University, an M.S.A. in administration from Central Michigan University and is Level III certified in contracting.

BRETT BOYLE previously served as a Contract Specialist in the CELCMC's Acquisition Center, Fort Monmouth, and is currently employed as a Contract Specialist with BAE Systems, Wayne, NJ. He holds a B.B.A. from the George Washington University, an M.B.A. from Monmouth University and a Graduate Diploma in Applied Computing from the University of Limerick, Ireland. He is Level II certified in contracting and Level I certified in program management.

SCOTT GODIN is a Contract Manager at GDC4S in Taunton, where he has worked for 15 years. He holds a B.S. in economics from the University of Massachusetts.



Radio communications are critical to operational success. The Alpha Contracting process ensured that Soldiers like SSG Curtis Chekel with the 5th Infantry Brigade, 25th Infantry Division, have the equipment and training they need to be successful in combat. (U.S. Army photo by SSG Mike Buytas.)

Robots Extracting Casualties Reduce Risk to Medics

Karen Fleming-Michael

When Soldiers are wounded and exposed to enemy fire, the first priority is getting them to safety. An Army unit at Fort Detrick, MD, is exploring how robots can extract casualties to help reduce the risk to the medics and Soldiers who might otherwise be required to extract wounded Soldiers.

COL John Lammie (right), 550th Area Support Medical Co., 3rd Infantry Division, confers with an Iraqi medic about dispensing medications during a clinical health outreach program in Subak Sur, Iraq, Dec. 26, 2005. In the near future, robots will assist medical personnel with battlefield casualty evacuation and treatment, further reducing their risk to hostile enemy fire. (U.S. Army photo by SPC Charles W. Gill, 55th Signal Co. (Combat Camera).)

Gary Gilbert, Fort Detrick Telemedicine and Advanced Technology Research Center (TATRC), first started looking at the robot option when he combined his experience as a ground ambulance company commander in Germany with his doctoral training in artificial intelligence and robotics.

“If you look at the data on medics awarded the Medal of Honor, most of those killed in action were in the process of rescuing or caring for wounded Soldiers under fire,” he said. “The same is true when one Soldier helps another injured buddy. It seemed to me that using robots could help reduce those losses.”

His idea of robots performing casualty extractions makes more sense today than ever before. “With the increased threat of weapons of mass destruction, chemical and biological weapons, booby-trapped IEDs [improvised explosive devices] and urban combat,

medics are ever more likely to be exposed to risks,” Gilbert said. “This increased exposure might not be necessary if robots could be used in some of those dangerous situations.”

Looking to the Future

The Army has mandated that one-third of its vehicles be unmanned by 2015, and Gilbert believes robotic extraction platforms fit this bill. “If the medics don’t do their share [to move toward unmanned vehicles], then more of that third falls on the Army combat and other combat support elements,” he said.

Robot program prototypes were put through their paces Aug. 29, 2005, in a field near TATRC, including the following:

- Robotic Evacuation Vehicle evacuates patients from where the medic stabilizes the Soldier to a treatment site.
- Battlefield Extraction-Assist Robot

(BEAR) moves patients from the point of injury to the medic. Both this robot and the evacuation vehicle allow medics to use remote controls to get Soldiers out of harm’s way. However, this technique requires the wounded Soldier to roll onto a sled before medics or a larger robot can drag him back to safety.



Daniel A. Theobald, Vecna President, demonstrates a BEAR casualty extraction simulation. (U.S. Army photo by Lori DeBernardis.)



CPT Chad Umbel, 6 feet tall and 240 pounds, from the Fort Detrick Fire and Emergency Services, was picked up effortlessly by the Robotic Emergency Medical and Danger Detection vehicle, developed at St. Francis University and demonstrated recently at Fort Detrick's TATRC. (U.S. Army photo by Chuck Dasey.)

- Battlefield Evacuation and Recovery Humanoid Robot safely picks up and extracts an injured Soldier on the battlefield, eliminating the requirement for Soldiers to roll onto a sled.
- Robotic Emergency Medicine and Danger Detection Robotic Vehicle is being designed to respond to civilian natural disasters and acts of terrorism in rural areas where medical resources are limited. The vehicle uses items such as an unmanned aerial vehicle (UAV), a casualty extraction litter payload system, robot scouts, a hazardous gas and radiation detection system, and a remote casualty location device.

Another approach uses UAVs for biosurveillance, medical response command and control, and imaging. A final prototype uses robot controller devices mounted on an M4 rifle or a glove hand-signal robot controller. However, there are challenges with robotic evacuation because, at the heart of it, robots are machines, not humans.

Maintaining the Human Touch

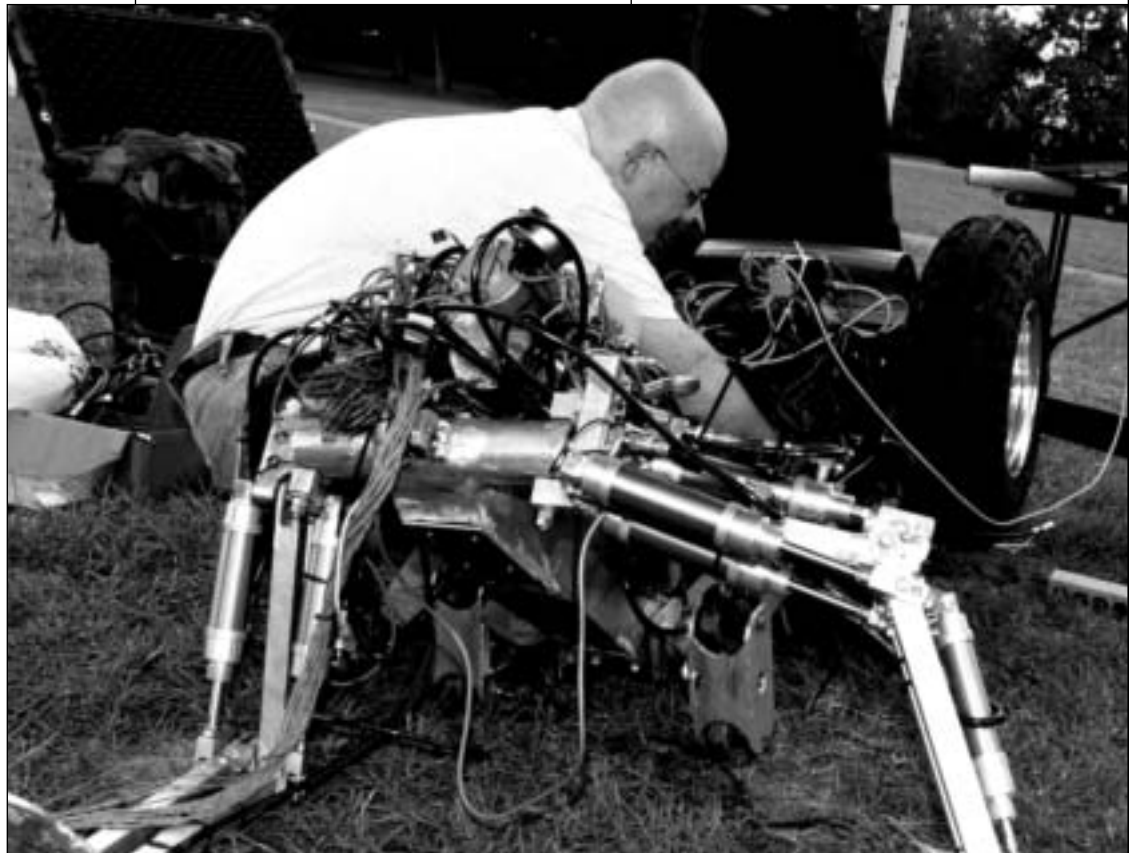
Robots don't deal with the unknown very well," Gilbert remarked. "As sophisticated as their programs are, they still don't deal with plans that fail when confronted with unforeseen problems. Right now,

you could not be sure that robots put out on a battlefield with human Soldiers might not accidentally run over or bash into their human buddies."

Replacing a medic with a machine invariably leads to the question of a robot's ability to comfort a wounded Soldier. "We've got to maintain the psychology and the warmth of the human touch for

these patients if we are going to use robots," Gilbert said. "We have installed a telemedicine screen on the ceiling of the [evacuation vehicle's] patient compartment, so when patients are being transported, they can actually see and talk to a human medical provider and that provider can give some level of support and care, even if they're not physically present. For now, however, we will continue to have human attendants on board, even 'unmanned vehicles' whenever patients are being transported."

Regardless of the challenges, Gilbert is determined to push forward. "I hope that before I retire I see that concept adopted by an Army acquisition program and some of these capabilities make it into the field," he said. "The ultimate success would be to see these robots actually save Soldiers' lives while also preventing unnecessary losses of our brave medics."



The BEAR arrived at Fort Detrick in need of assembly and care from its Vecna robotics designers. Robotic vehicles at the concept stage still require tinkering. (U.S. Army photo by Doug Valentine.)

Field Medics to Get Improved Sterilizer

Sterilizing medical instruments in the field can be tricky. It is so tricky that forward surgical teams (FSTs) — the first stops for Soldiers who need surgery — don't do it. Because FSTs are mobile, they can't accommodate the weight, size or power requirements of current field sterilizers.

"FSTs should have sterilization capability," said LTC Thomas Winthrop, Chief of Central Material Service, which does all the sterilization work for the Walter Reed Army Medical Center. "I would think if they were going to add anything, they would add a sterilizer."

Phygen, a Minnesota-based company, is developing a new plasma sterilizer at the U.S. Army Medical Materiel Development Activity (USAMMDA) at Fort Detrick, MD that may be able to provide sterilizers to FSTs in coming years. Plasma is a highly ionized gas, like the gas in a fluorescent-light tube. The new sterilizer uses plasma to energize a hydrogen peroxide vapor and kill microorganisms. "It has multiple killing techniques," Arnold said. "It ionizes the oxygen found in normal air and the hydrogen peroxide to kill bugs." And you have to kill lots of microorganisms to sterilize something to Food and Drug Administration standards. "If you had a million bacteria, you could have one left for it to be considered sterile."

Of steam, gas, chemicals and plasma, steam is Winthrop's favorite sterilization method. He used "Big Bertha" steam sterilizers in the field and saw their value. "There's no one answer for sterilizing most things but for the field, steam is really the only answer.

Steam penetrates, the other stuff doesn't." Arnold agreed that steam sterilizers have earned their bragging rights, and said the new technology will supplement steam, not replace it.



The "Big Bertha" steam sterilizer has been around since the latter part of the Vietnam War but FSTs can't use them because they're too heavy and need too much power. A new plasma sterilizer is being developed for FSTs. (U.S. Army photo by LTC Thomas Winthrop.)

Arnold would like the new plasma sterilizer to replace the chemical glutaraldehyde that FSTs currently use. Because glutaraldehyde is used to glue cells on slides, it sticks to instruments and dulls them over repeated cleanings. "That's why instruments get grungy when you clean with glutaraldehyde," he said.

The new sterilizer has other benefits useful for FSTs. It takes from 20 to 58 minutes to sterilize whatever is in its chamber and, because it operates at low temperature, users don't have to wait for instruments to cool before use. And Arnold said the new sterilizer would not present any environmental concerns. The hydrogen peroxide vapor breaks down into water

vapor and oxygen, and the plasma turns back into air when the electricity is turned off.

The sterilizer's weight will depend on how large it is, but it will be substantially lighter than conventional ones because it won't need high-pressure boilers and pressure chambers. The technology is also scalable, so it can have a small or large diameter. The new sterilizer will use less power, too. "You won't have to bring along as many generators. You don't burn as much fuel," Arnold said.

The plasma sterilizer will need electrical equipment to create the high voltages used to create the plasma and will have a vacuum pump. It will also need a basic computer to remain reliable. "Anything on a computer is going to be a problem in the field, no matter what," Winthrop said, adding that most modern equipment has computers so getting around them isn't likely.

Phygen expects to have a sample of the new sterilizer within the next two years. Arnold said the Army will help the company work through some of the military-unique requirements. "Most manufacturers have no idea how bad the environment is out there," he said.

KAREN FLEMING-MICHAEL is a Public Affairs Officer with the U.S. Army Medical Research and Materiel Command. She has a B.A. in English literature from the University of Maryland and an M.S. in public administration from Auburn University. She has worked as an editor and public affairs specialist for 16 years.

Oxygen Carriers Coursing Along in Clinical Trials

Karen Fleming-Michael

It's a matter of basic physiology — humans need blood to survive. Without enough of it, their hearts don't pump as well, and cells, tissues and organs die because they're not getting the oxygen they need.

Medics from 1st Battalion, 26th Infantry Regiment, 1st Infantry Division, rush an Iraqi patient into a medical evacuation Black Hawk helicopter near Samara, Iraq. Gunshot victims usually bleed heavily. HBOCs can help prevent excessive blood loss and stabilize patients enough to transport them to the nearest combat surgical hospital. (U.S. Army photo by PVT Brandi Marshall.)

When warfighters are bleeding severely on the battlefield, getting blood to them is tricky because blood requires refrigeration and has an extremely short shelf life. With this in mind, researchers have spent decades developing fluids called hemoglobin-based oxygen carriers (HBOCs) that do the blood's job of carrying oxygen to our tissues and organs.

"No oxygen equals cell death, tissue death," said COL Robert Vandre, U.S. Army Combat Casualty Care Research Program. "Once you get below a certain level of red cells in the blood, even if you can put in volume with intravenous fluids, you're not going to have enough oxygen and everything starts shutting down. The patient starts having inflammation problems and going into shock. Then everything falls apart."

To prevent that from happening, medical professionals' first choice for replacing lost blood will always be fresh, whole blood.

"The nice things about red cells, they not only carry oxygen, they also help in clotting blood," Vandre explained. "If you look at a blood clot, it's red. That's because it's made up of red cells that act like little sandbags. Platelets, thrombin and fibrinogen are the glue that hold all the red cells together."

HBOCs

"When red cells or whole blood just aren't available, an HBOC serves as a bridge until real blood is available," explained Dr. Michael Dubick, a senior research pharmacologist who manages resuscitation research at the U.S. Army Institute of Surgical Research. "An HBOC, though an oxygen carrier, is not a blood replacement. HBOCs don't do

all the things that blood does and they don't offer the clotting benefits present in platelets," Dubick continued. "But they buy you time until you can actually get a blood transfusion."

"Anyone can receive an HBOC because everyone has hemoglobin," Vandre remarked. "The fluid doesn't have to be typed and cross matched like blood and doesn't require a full-blown blood donation program like the kind found in a hospital."

"HBOCs may also help when wounded warfighters face long evacuation times," Dubick suggested. "In Afghanistan, at times evacuation times were long. We've heard reports that they were from 12 to 36 hours. I think there was an anecdote of a helicopter being shot down at 14,000 feet, and it took time to get the people evacuated because they were still under

fire. If you have longer evacuation times, perhaps the regular fluid the medics were carrying wouldn't be good enough. You don't have blood, but you do want to give them something like blood as soon as possible."

The Army invented the first HBOC at the since-shuttered Letterman Army Institute of Research. "They first tried taking the hemoglobin out of the blood and used it to deliver oxygen, but straight hemoglobin is a bad idea," Vandre stated. "It's so small that it leaked out of the blood vessels quickly. Not only did it not do the oxygen-carrying job, it leached out and made the skin turn color."

"Once they linked hemoglobin molecules in big clumps, researchers moved past the leaking, but first-generation HBOCs had other problems. They raised the recipient's blood pressure, failing in clinical trials in Europe,

where nearly three times as many patients in the treatment group died compared to the control group," Dubick recounted.

"No product has yet fully met the military's ideal of having a 2-year shelf life, needing no refrigeration and having no limit on the number of units that can be given. However, today's second-generation HBOCs in clinical trials are faring much better than their predecessors," Vandre pointed out.

"The grape-juice-colored fluids are packaged in a bag similar to red blood cells so they don't weigh too much. There's little chance of allergic reactions because everyone has hemoglobin, which makes blood red. They do seem to cause the skin to turn yellow as the liver processes the HBOC, but that's a temporary side effect," explained Dubick.

One HBOC, called Poly-Heme, is already in clinical trials nationwide at trauma centers. In July 2005, Brooke Army Medical Center (BAMC) began participating in the trial after getting permission from the Secretary of the Army. "The Army is participating in this trial because we need an HBOC in the pre-hospital arena on the battlefield, and we need to be involved in the

development of the product so when the product is delivered, we know and understand and are the experts on this product," said COL Toney Baskin, a trauma surgeon and principal investigator for the trial at BAMC, Fort Sam Houston, TX.

"Getting permission from the Army was one hurdle for the trial. Getting community consent was another. A trauma patient doesn't know in advance that he's going to be a trauma patient," Vandre said. "And the ones that need red cells or HBOCs are the ones that are really badly hurt. You can't get informed consent from them to use an investigational new drug ... and sometimes you

can't get immediate consent from the next of kin, so you have to get consent of the community."

To gain community consent, officials at BAMC explained the trial to the military community and some of the outlying areas that Brooke services. "I think 87 percent of the people who attended said that they agreed with the study and approved the study," Dubick said. "On a personal basis, whether they would want to have the product themselves is another question." Organizers distributed bracelets for people to wear if they did not want to receive the product.

"The BMAC portion of the trial is still ongoing, with a goal of enrolling 20 patients who are 18 or older, not pregnant and who have a systolic blood pressure (the number on top) less than 90," remarked Baskin, who serves as

The Army is participating in this trial because we need an HBOC in the pre-hospital arena on the battlefield, and we need to be involved in the development of the product so when the product is delivered, we know and understand and are the experts on this product.



SPC Jennifer Neil, an Army medic with the 155th Brigade Combat Team, tends a patient who is suffering from dehydration at a civilian hospital in Iskandaryiah, Iraq, Nov. 26, 2005. (U.S. Marine Corps photo by LCPL Michael J. O'Brien.)

When red cells or whole blood just aren't available, an HBOC serves as a bridge until real blood is available. (Photo courtesy of Dr. Michael Dubick, U.S. Army Institute of Surgical Research.)



up,” Vandre explained. “If they’re still not doing well because they lost too many red cells, then you’d give them this — if red cells weren’t available. Such a small amount can make such a big difference.”

Currently, Vandre’s program is evaluating 16 resuscitation products to find the best candidates to take to clinical trial. If microbubbles win, they could enter clinical trials by 2008. Re-

gardless of which product wins, the experts seem to agree that oxygen can make the difference between life and death in trauma cases.

“I have been in situations where patients have been losing blood, and blood was not available,” Baskin recounted. “Had there been an HBOC available, perhaps lives could have been saved.”

KAREN FLEMING-MICHAEL is a Public Affairs Officer with the U.S. Army Medical Research and Materiel Command. She has a B.A. in English literature from the University of Maryland and an M.S. in public administration from Auburn University. She has worked as an editor and public affairs specialist for 16 years.



Chief of Trauma and Critical Care, Trauma Division, U.S. Army Institute of Surgical Research and BAMC.

“HBOCs on the battlefield would provide that bridge of life to get the wounded Soldier off that mountain back to the combat surgical hospital alive where hemorrhage control could be provided and blood volume restored with his or her vital organs still intact and functioning,” Baskin continued.

Microbubbles

Another potential oxygen carrier still in early developmental stages is microbubbles. Instead of using hemoglobin, the microbubbles are fluorocarbons, specifically decafluoropentane, a cousin of Freon, the automobile air conditioning fluid. The solution is liquid at room

temperature, but turns into bubbles when placed in the body.

HBOCs on the battlefield would provide that bridge of life to get the wounded Soldier off that mountain back to the combat surgical hospital alive where hemorrhage control could be provided and blood volume restored with his or her vital organs still intact and functioning.

“When the bubbles go to the lungs, they ... will actually suck in oxygen from your lungs and when they get out to the tissues, they’ll give off the oxygen,” Vandre remarked. “They act much like an HBOC.

“Studies using the microbubbles in a laboratory setting show that three tablespoons carry as much oxygen as an average person’s blood. Packaged as a liquid in a tiny vial, microbubbles appear to be very safe,” said Vandre. “They are used in such a low volume that a medic could carry them easily.

“If somebody was losing a lot of blood, the first thing to do is try to stop the bleeding, then give Hextend (a resuscitation fluid) to keep the volume



Vaccine for Ricin Toxin Developed at Detrick Lab

Karen Fleming-Michael

Jack, of beanstalk fame, can attest to the fact that a few little beans can cause a lot of problems. Ricin, a toxin made from castor beans, makes Jack's problems look trivial and has no fairytale ending. "Inhaling the toxin causes severe breathing problems as the lungs fill with fluids because the toxin attacks cells in the lung," said Dr. Leonard Smith, Division of Integrated Toxicology, U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID).

Soldiers on patrol are particularly vulnerable to ricin exposure. A ricin vaccine, currently being developed and tested, will help reduce the risk of poisoning in the future. Here, SGT Melvin Clark, 2nd Battalion, 1st Infantry Regiment, 172nd Stryker Brigade Combat Team, patrols the streets of Mosul, Iraq, Nov. 3, 2005. (U.S. Air Force photo by SSGT James L. Harper Jr., 1st Squadron Combat Camera.)



Ingesting ricin causes vomiting and diarrhea that may become bloody and result in dehydration, according to the Centers for Disease Control (CDC) Web site. The toxin also causes hallucinations, seizures and blood in the urine. Since 1989, Smith and other toxin experts at USAMRIID have worked on finding a vaccine to combat ricin exposure. Whether it comes through the air or deliberate contamination of the food or water supply, no antidote exists for people who have been exposed to ricin.

“It’s a heck of a lot easier to protect someone with a vaccine before a ricin exposure rather than to treat them with a drug afterward,” Smith said. “Once ricin gets in the cells and has done the damage, it’s going to be very difficult, if not impossible, to treat someone who has been exposed to a large dose. The damage has been done

by the time people know they are affected. When people start to have symptoms, it may be impossible to save them with any kind of therapy.”

Ricin has had its fair share of the media spotlight in recent years. Press reports said the toxin turned up in an envelope in the mailroom that serves



MAJ Andrew Magnet, 3rd Brigade, 3rd Infantry Division surgeon (left), and MAJ John Godino, 2nd Battalion, 34th Armor Brigade gastroenterologist, discuss the delivery of medical supplies with Baqubah General Hospital's head administrator and lead surgeon. (U.S. Army photo by SSG Suzanne M. Day.)



Ricin, a toxin that causes hallucinations, lungs to fill with fluids, etc., can be used as an aerosol or to deliberately contaminate food and water supplies. Here, Master-at-Arms 2nd Class Adam Ortega inspects his bottled water supply on the Al Basrah Oil Terminal off the Iraqi coast. Ortega is assigned to Mobile Security Detachment-25. (U.S. Navy photo by PH1 Aaron Ansarov, Fleet Combat Camera.)

Sen. Bill Frist’s office and a postal handling facility in Greenville, SC. It was also at the center of a plot in London where suspected al-Qaeda members were trying to make it. Listed as a category B bioterrorism agent by the CDC, ricin is a threat to both service members and the public.

“It can be obtained quite readily as a by-product of castor beans,” said Smith, who has worked for USAMRIID for 24 years. “After you extract what you need from the beans, like castor oil, there’s quite a bit of ricin left behind. We have no medical solutions to defend against ricin intoxication, and so we are vulnerable.”

According to the CDC, ricin is also a stable substance that’s not affected much by very hot or cold temperatures. Because of ricin’s sinister traits, researchers at USAMRIID have been heartened by recent results they’ve had

with their latest attempt at a vaccine.

Work on a ricin vaccine began in 1989, and the quality attributes of two vaccine candidates the institute developed early on didn’t meet U.S. Food and Drug Administration (FDA) expectations. The third, a recombinant vaccine, capitalized on lessons learned from the earlier attempts.

Ricin is composed of two protein subunits, the A and B chains. When the B chain binds the toxin to a cell’s surface, it permits the A chain to enter the cell. Once it’s inside, the A chain stops new protein synthesis and causes cell death. In earlier attempts to develop a ricin vaccine, researchers thought that

isolating the entire ricin A chain could

produce immunity. But they found that the chain wasn’t stable, a key element for getting a vaccine approved for use. By using molecular modeling and protein engineering, researchers — including Drs. Mark Olson, John Carra, Virginia Roxas-Duncan, Robert Wanemacher, Charles Millard and Smith — designed the new vaccine. The team started with a computer-aided analysis of the toxin structure, using a 3-D model provided by colleagues at the University of Texas-Austin.

Listed as a category B bioterrorism agent by the CDC, ricin is a threat to both service members and the public. It can be obtained quite readily as a by-product of castor beans. We have no medical solutions to defend against ricin intoxication, and so we are vulnerable.

“We compared ricin with other proteins of the same family,” Olson said.

“We tried to figure out where the protein molecules are diverging within the family to see what changes were made by nature so we could make the changes we needed to make.” To improve the vaccine’s stability, Olson and his team modeled changes in the structure of the ricin A chain molecule. Once they predicted which genetic sequences required alterations, they handed them off to Smith and others at USAMRIID for protein engineering.

“We went straight from the computer to molecular biology,” Smith said. “We had to clone and purify the proteins, and test them in animals for toxicity and protection.” Four years later, the vaccine called RTA 1-33/44-198 is one the FDA should be pleased with, Smith said.

“Unlike earlier versions, this recombinant vaccine has no biological activity

except for the immunity it elicits, which inactivates the toxin. It’s produced and purified from *E. coli* and is highly stable and safe,” he said.

In July 2005, researchers tested the vaccine on eight monkeys that received three shots of the vaccine over an eight-week period, then challenged them with an aerosol version of ricin. Final results of the study will be published in scientific literature later this year, but in the meantime, Smith is pleased with the results. “The bottom line is the vaccine works,” he said.

Getting the vaccine into a clinical trial is the next hurdle. Currently, the USAMRIID vaccine is being considered for funding along with two other vaccines, said Andrea Atkinson, Vaccine Manager with the Joint Vaccine Acquisition Program, which manages biological defense vaccines through advanced development and FDA licensure.



Ricin is a toxin made from the beans of the castor plant. Since 1989, toxin experts at USAMRIID have worked on finding a vaccine to combat ricin exposure. (Photo courtesy of Dr. Leonard Smith.)

“We are looking at schedules, who can be licensed fastest and which one meets our requirements,” Atkinson remarked, adding that the finalist for funding has not yet been selected. Once a funding stream opens up for a vaccine like ricin, many pharmaceutical companies suddenly want to put their canoe in the water,

which is good news. “That’s fantastic for the Soldier because you know there’s always going to be something available. There’s always a next-generation candidate out there,” she said. “It’s also risk reduction from our perspective. If we were to experience a failure with a candidate, then there’s something else coming down the pipeline to mitigate that risk.”

Meanwhile the USAMRIID team is developing an animal model that can be used under the FDA’s animal rule to show the vaccine protects its recipients. “You can’t challenge humans so it was necessary to develop a surrogate model to show the human is protected by the vaccination, especially from these products that aren’t normally found in the environment,” Smith said.

While funding decisions are being deliberated, Smith and his team remain busy in their Biosafety Level 2 lab looking at other funding opportunities for clinical trials and laying the foundation for them. The Defense Threat Reduction Agency has approved funding for the continued technology base development of the vaccine for FY06.

“We’ll keep going. There’s no question about that. My job is to try to partner with whoever we can to get resources to have a lot of vaccine made and get that clinical trial going,” Smith concluded.

KAREN FLEMING-MICHAEL is a Public Affairs Officer with the U.S. Army Medical Research and Materiel Command. She has a B.A. in English literature from the University of Maryland and an M.S. in public administration from Auburn University. She has worked as an editor and public affairs specialist for 16 years.

Researchers Making Strides Against Botulism

Karen Fleming-Michael

Though often associated with home canning gone bad or as a short-term wrinkle therapy, botulinum toxin is also a serious biological threat. “We know it can be delivered by aerosol or in the food supply, and it can be obtained easily because it has a simple fermentation process,” said Dr. Leonard Smith, Division of Integrated Toxicology at the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID).

Clinical trials will begin this year to test potential botulism vaccines to inoculate our troops against targeted toxins. Here, 3rd Armored Cavalry Regiment Soldiers patrol the streets of Tal Afar, Iraq, in the aftermath of a suicide bomber attack in October 2005. (U.S. Navy photo by PO1 Alan D. Monyelle.)

For decades, researchers at USAMRIID have led the way in finding, discovering and developing vaccines, treatments and diagnostic devices for the toxin that can kill or paralyze its victims. The full effect of the poison's power was demonstrated in November 2004 when media reports said a Florida doctor used a research formulation of the toxin as a substitute for the cosmetic product, Botox, that sent him and three others to hospitals where they ended up on respirators.

When the botulinum toxin acts, Smith said, clinical signs and symptoms of botulism first occur in the head region and progressively work their way south.

"First the cranial nerves are hit. Your eyelids get droopy, you can't swallow and then you can't breathe," he said. "You end up suffocating, so that's why people end up on respirators."

There are at least seven distinct toxin forms and they're designated types A through G. Though the forms are

structurally similar, they're immunologically distinct, which means antibodies for one type will not protect against another type, Smith remarked. He, along with most of the people working on vaccines to prevent botulism at USAMRIID, received a toxoid vaccine that's presumably effective against five of the seven (A through E) serotypes.

The pentavalent toxoid vaccine was never licensed by the Food and Drug Administration (FDA). In fact, Smith persuaded some co-workers not to take the vaccine because they planned to work at the institute for only a few years.

"There is a growing list of clinical indications — such as spasticity and movement disorders, headache and pain, autonomic diseases, gastrointestinal and genitourinary maladies, and even cerebral palsy — that have been effectively treated using botulinum toxin," he continued. "Vaccination against the toxin would make those treatments ineffective, so I don't want them to run the risk that they'll need

those treatments later in life and won't get help from them."

Beginning in the early 1990s, USAMRIID scientists started work on recombinant vaccine versions and have made one for each of the seven serotypes. The candidates for serotypes A and B transitioned to the Joint Vaccine Acquisition Program (JVAP) for advanced development in 1999 and have now been examined in an initial safety trial. USAMRIID continues to develop recombinant vaccines against types C, D, E, F and G toxins with support from the Defense Threat Reduction Agency and the National Institute of Allergy and Infectious Diseases (NIAID).

The safety trial, also called a Phase 1 trial, for the AB vaccine is being conducted by DVC LLC, JVAP's prime systems contractor responsible for developing and licensing the bivalent vaccine with the FDA. The Phase 1 trial's objective is to evaluate the safety of the vaccine in a small population of volunteers and to choose one or two



Although U.S. medical sources report that botulism toxins have never been used in warfare scenarios or bioterrorism events, the potential is there. Vaccines are being developed to protect Soldiers who may be exposed to the toxins in the future. (U.S. Army photo by SPC Chris Foster.)

doses to examine in the Phase 2 clinical trial. The clinical trial, based at the University of Kentucky, is being managed by Covalent Group, a clinical research organization based in Wayne, PA. To date, 44 volunteers have received vaccinations.

“The objective of the Phase 2 trial, which starts in 2006, is to select the vaccination schedule that ensures a fast and durable immune response because those things are obviously important to Soldiers,” said Kathy Berst, the botulism vaccine manager for JVAP. “If they’re going to deploy, they need a vaccine that will protect them as soon as possible.”

Smith and his team, in collaboration with Dr. James Marks of the University of California in San Francisco, are also working on treatments that use human monoclonal antibodies to lessen the toxin’s effects, so if a person

is exposed to the botulinum toxin, they might not have an extended stay on a ventilator. The Centers for Disease Control and Prevention currently has a licensed antitoxin for serotypes A, B and E.

“The antitoxin neutralizes and clears the toxin from the circulatory system, but there’s nothing to help the damaged nerve cells, so recovery can take months,” Smith emphasized. Given a choice between treating botulism with an antitoxin or preventing it entirely, USAMRIID researcher Dr. Mark Poli prefers a vaccine. “Therapeutics are great, but they assume you’re going to be sick. A vaccine means you never get sick, and that’s the best of all worlds,” he explained.

Having a device that can tell if a Soldier has been exposed to a biological agent, like botulism, is what Poli has

been working on with a United Kingdom-based company called Akubio. “If you can put a detector out in the field that says a bot exposure has occurred before Soldiers start coming down with bot in the medical tents, lives can be saved,” he said. “With bot, there’s a window of opportunity for treatment ... primarily before symptoms show up. Once the symptoms show up, it is much more difficult to treat and save the exposed Soldier.”

The device is still early in its development and uses acoustic sensing to detect a broad range of toxins, bacteria and viruses. “It actually listens for molecular interactions,” Poli explained. Akubio employs an acoustic approach to detect agents in what can be a very simple device. The system uses a quartz crystal that has an electrical current running through it so it

vibrates millions of times each second.

The crystal is electronically sampled to detect resonating sound waves. An antibody or a piece of DNA is attached to the crystal, and when a solution containing a biological agent such as a toxin, virus or bacteria is run over the vibrating crystal, the agent will attach to the antibody on the crystal.

Changes in resonance are immediately detected and indicate the presence of an agent. "As the energy is acoustic, you can hear it if you have the right listening device. This device is very smart and can detect more than one signal at once," Poli remarked. "We'll know what is present because the antibodies we put on the crystal are specific for it (agent)."

For example, put an antibody for Ebola on the crystal, and if the user hears resonance at the right frequency, it has to be Ebola. The approach, now

in beta stage development, is termed and trademarked as *resonant acoustic profiling*. "Today, you can see the binding event by looking at the change in the resonant properties of the crystal," Poli continued. "Next year we expect to use additional properties to validate what we have found in each case."

"We could potentially have a single chip that covers the top five bio-terror agents and have a general alarm chip that says there's something there," said Matt Cooper, chief scientist at Akubio. "This approach could be

extended to an ID chip with multiple sensors 'A to Z' with attached antibodies or DNA corresponding to toxins and pathogens '1-26.'"

This year, NIAID gave Akubio a 4-year grant for \$3 million for further work on the technology. As the firm continues refining prototypes in

USAMRIID continues to develop recombinant vaccines against types C, D, E, F and G toxins with support from the Defense Threat Reduction Agency and the National Institute of Allergy and Infectious Diseases.

Cambridge, England, USAMRIID will test their effectiveness in Frederick, MD. Akubio plans to broaden its research program during the grant period by adding further sounds that can be detected by its device giving even greater real-time insights to the infectious pathogens.

"The ultimate goal is to develop a hand-held detector that can run more than 1,000 samples on a rechargeable battery and doesn't need complicated software or computers," Poli reflected.

"We hope we get to the point where we have a functioning instrument and we know how to develop the chips, look at the signals and develop the assays, at which point we can show the Army we have something useful," Poli theorized. "There's a lot of work that goes between 'Here's a machine that can generate a signal,' and 'Here's a machine that can work in a real world at the concentrations that we need it to work and in the matrices that we need it to work in.'"

"Botulism," Smith added, "continues to be a concern at USAMRIID.

Though the toxin has never been used in a warfare scenario or in a bioterrorism event, the Japanese cult that released sarin gas in the Tokyo subway in 1995 admitted to failed attempts in trying to use botulism as an aerosol. The intent was there," Smith concluded. The medical community is working hard on possible solutions.

KAREN FLEMING-MICHAEL is a Public Affairs Officer with the U.S. Army Medical Research and Materiel Command. She has a B.A. in English literature from the University of Maryland and an M.S. in public administration from Auburn University. She has worked as an editor and public affairs specialist for 16 years.



An acoustic device that uses sound to detect a broad range of toxins, bacteria and viruses is being developed by Akubio, a United Kingdom-based company. (Photo courtesy of Akubio.)



Putting Soldiers and Tactical Vehicle Safety First – New Partnership Results in Product Solutions

COL S.R. Kidd, Joseph M. Keusch and Terry Gonda

The Tactical Vehicle (TV) Safety IPT's primary goal is to tackle TV fleet safety initiatives. Here, PFC Jason Jenkins, Provisional Reconstruction Team Farah, International Security Assistance Force, keeps a watchful eye out for insurgent activity in Kinesk, Farah Province, Afghanistan. (DOD photo.)

A model Life Cycle Management Command (LCMC) Integrated Process Team (IPT) for Tactical Vehicle Safety has shown that a highly focused and properly staffed team can be extremely effective in accomplishing significant results. In April 2005, a new IPT consisting of the following members was formed:

- Project Manager Tactical Vehicles (PM TV).
- U.S. Army Tank-automotive and Armaments Command (TACOM) Safety Office.
- Combat Readiness Center.
- U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC).
- Aberdeen Test Center.
- U.S. Army Test and Evaluation Command (ATEC).
- TACOM Acquisition Center.
- Army Research Laboratory Human Resources Engineering Directorate.
- Rapid Equipping Force (REF).

Dedicated members of the PM TV Safety IPT have met daily since April, attacking some of the most serious problems affecting the Soldiers operating the actual TV fleet during *Operations*

Enduring and Iraqi Freedom (OEF/OIF). The result is several quick-response procurements targeted at Soldier safety while operating the M1114 Up-Armored Humvee (UAH). These safety initiatives include a first-responder's tool, a gunner's restraint system, an improved seat restraint belt and a fire suppression system for the crew and cargo compartments.

Tactical vehicle safety has grown to be a serious concern over the last two years as data reveal a steady increase in injuries and fatalities because of improvised explosive devices (IEDs) and rollovers, which are the result of avoidance maneuvers as well as a lack of using existing on-board safety restraints. While in many cases training, tactics, techniques or operational procedures may be contributing to the

issue, it became clear to many, including Army Chief of Staff GEN Peter J. Schoomaker, that materiel solutions had to be developed to enhance Soldier safety. The Safety IPT uses a collaborative process model to speed deployment of safety improvements to the area of responsibility (AOR). The IPT assesses initial requirements from the AOR and then develops a set of preliminary technical solution requirements. The team then determines what possible solutions exist in industry and/or other research centers and labs. Once a satisfactory configuration is found, it enters an accelerated test program at ATEC. Upon completion of accelerated tests for performance and human factors, the IPT works with the REF to get hardware to the field in limited quantities for quick assessment prior to a major procurement.



solutions. The PM TV at the time was COL Robert Groller. He was chiefly responsible for IPT formation and implementation.

Meanwhile, TARDEC set out to develop a coordinated support strategy. TARDEC's Tony Comito and Ken Ciarelli initially were appointed the temporary leads for TARDEC materiel and simulation solutions and began alerting TARDEC to the IPT's needs. As the

Vehicle rollovers as a result of avoidance maneuvers, coupled with misuse or non-use of existing on-board restraint systems, have caused numerous injuries and fatalities throughout *OEF/OIF*. The new gunner's restraint harness should help keep the gunner from being ejected from the vehicle in the event of a rollover or avoidance maneuver. (U.S. Air Force photo by TSGT Russell E. Cooley IV, 1st Combat Camera Squadron.)

In a parallel effort, the TACOM Acquisition Center prepares a request for proposal for an objective solution that builds on the experience gained from designing the quick-response materiel solution and successful test certification, combined with assessments of the quick-reaction solution from the AOR.

One solution that has completed the quick-response process is the first-responder's tool used to open the UAH doors after a rollover incident. This tool enables first responders to open the UAH lock from the outside. More than 13,000 were manufactured and deployed in support of *OEF/OIF*. Another quick-response solution currently being assessed is the gunner's restraint system, designed to restrain the gunner inside the UAH during rollover or collision-avoidance maneuvers. As installation and evaluations proceed in the AOR, the IPT keeps in close contact with the Soldiers using the new equipment via an assessment tool provided by PM TV and being returned by ATEC teams currently operating in the AOR.

The Safety IPT was developed after MG Brian I. Geehan, the Chief of

Transportation, and BG Patrick J. O'Reilly, Program Executive Officer Combat Support and Combat Service Support (PEO CS&CSS), began discussions focused on improving Soldier safety for TV systems. The Transportation School took the lead for training impacts, while the PEO took the lead for developing materiel



The gunner's restraint system is a quick-response solution that is designed to keep the gunner inside the vehicle in the event of a rollover or collision-avoidance event. (U.S. Army photo courtesy of PM TV.)

IPT process matured, Carl Johnson assumed the position as the TARDEC reach-back member and began working with new, as well as long-standing, safety-related projects.

As TARDEC's numerous activities came to light, PM TV Assistant Project Manager for Safety Don Starkey noticed a difference. "Until this IPT, each organization was working separately and didn't know what the other was doing. We would put out market surveys and largely ignore the RDECs [research development and engineering centers], thinking they were working long-term science projects. This entire collaboration has proven to many of us that the RDECs can respond quickly in support of the PM community."

Groller agreed stating, "Dr. McClelland said TARDEC would come up with an anchor point for the gunner's restraint and they did it in a week. TARDEC came through in a crunch."

The IPT's combined efforts are currently focused on several simultaneous improvements:

- A replacement safety restraint for the Humvee that is easier to use than the current three-point belt (only 30-percent utilization currently).
- A fire suppression system for M1114 Humvees.
- A finite element analysis to evaluate and improve the protection level of the Gunners Protection Kit during rollover.
- Mounting hardware for the gunner restraint solution. The gunner restraint system solution prevents Soldiers from separating from the vehicle during extreme maneuvers. The kit requires minimal effort to install.

Dr. Richard McClelland, TARDEC Director, is exceptionally proud of his organization's efforts and is delighted by the overall level of cooperation he has witnessed. "The Tactical Vehicle Safety effort is the best collaboration and the most pure team effort I've ever seen here. It is intensively managed with daily meetings of all the right people and is resulting in fielding items directly to the troops in Iraq."

According to Starkey, completeness in the IPT's composition has been the secret to streamlining. "Every time we get hardware to evaluate, the Operational Test Center supplies Soldiers to



PM TV and TARDEC are leveraging current Army technologies to tailor a mounted fire suppression system for the M1114 Humvee. (U.S. Army photo courtesy of PM TV.)

help evaluate technologies so we make sure we're developing usable products. The Safety Office provides daily input to make sure that, in the end, this will be a viable solution. R&D [research and development] and the testers are right there planning every step, while contracting and the REF help us streamline acquisition. Everyone continually understands the progress and can weigh-in daily at 0800 in the PM TV Conference Room."

Starkey has high praise for this IPT and admits it hasn't been easy, but that enormous progress has been made over these few months. "Initially in the effort, there were disagreements on how to proceed. For instance, we had a

debate over five-point versus three-point restraints. By bringing the entire team together, everyone participated in fleshing out the facts. We converted wants into requirements, developed solutions based on an agreed schedule and came to a successful resolution together. Now, all are on board and procurement can see what's coming down the pike."

COL S.R. KIDD is the PM TV, PEO CS&CSS, and has worked daily with the IPT since July 2005. He has a B.A. in business administration from the University of Kentucky, an M.S. in systems management from the Florida Institute of Technology and attended the Senior Service College Fellowship at the University of Texas-Austin. Kidd is Level III certified in program management.

JOSEPH M. KEUSCH is the PM TV Engineering Division Chief. He has a B.S. in electrical engineering and an M.B.A. from Wayne State University. He has worked at the Detroit Arsenal for 16 years at both TARDEC and PM TV.

TERRY GONDA is a senior research engineer with Research, Development and Engineering Command, TARDEC, and is currently on special assignment leading a Lean Six Sigma project to develop the future-state map for working technology insertion within the TACOM LCMC. She has a B.S. in computer science from Oakland University with specialized training in infrared technology and modeling. She has been the Army's lead for vehicle thermal signature modeling for the last 20 years, serving as chair of a NATO research panel on synthetic imaging and camouflage and managing the development of a commercially successful dual-use thermal modeling tool in cooperation with the Ford Motor Co., the Navy and the Air Force.



The new seat restraints offer ease of ingress and egress and fit 95 percent of males wearing Interceptor Body Armor and combat gear. (U.S. Army photo courtesy of PM TV.)



The Hybrid Electric Humvee — Providing Portable Power to the Force

Ashley John

Sitting in the nucleus of the Brigade Combat Team's tactical operations center (TOC) synchronizing and coordinating the efforts of the staff during the operation at hand, the Soldier realizes that this isn't just a normal command center. For the first time, this operations center is powered by a Hybrid Humvee.

The Tank Automotive Research, Development and Engineering Center (TARDEC), working alongside DRS Technologies, has designed and developed a highly efficient mobile power source demonstrator — the XM1124 Hybrid Electric (HE) Humvee. The HE Humvee is an advanced series hybrid electric vehicle that houses an engine/generator as the prime power

source, a high-voltage battery pack for short-term load leveling and brake event energy storage, and has the ability to export power to other platforms or equipment. The vehicle demonstrator displays tactical mobility and, in some cases, surpasses the standard Humvee. With additional characteristics that reduce fuel consumption, provide for export power and meet some

standard Humvee requirements, the HE Humvee has payoffs that can be attained on current and future military vehicles.

Two HE Humvees have recently undergone the first vehicle Military Utility Assessment (MUA) phase, where Soldiers had the opportunity to perform field assessments on the vehicle's



Soldiers and Marines conduct Joint route reconnaissance along Alternate Service Road Boston between Camp AlTaqaddum and Camp Al Fallujah in Iraq. The troops were searching for improvised explosive devices along the heavily traveled convoy route. The HE Humvee will allow extended operations and provide auxiliary export power for external platforms and communications equipment. (DOD photo by LCPL Brian A. Jaques, U.S. Marine Corps.)



SPC Jeffrey Hamme (left) and SSG Michelangelo Merksamer, Headquarters Co., 1st Battalion, 506th Infantry, 4th Regimental Combat Team, explained several key HE Humvee features to visitors at the October 2005 Association of the United States Army Annual Meeting in Washington, DC. The two Soldiers participated in the MUA prototype vehicle test in September 2005 at Fort Campbell, KY. (U.S. Army photo by Gary Sheftick.)

capabilities. During the first assessment at Fort Campbell, KY, Soldiers drove the vehicle for six miles on battery power, convoyed in the HE diesel mode and used the vehicle's electrical system to power a battalion TOC.

The vehicle's Auxiliary Power Distribution System (APDS) provided auxiliary power to the 1st Battalion, 506th Infantry Regiment TOC for more than 100 hours, showing no signs of apparent power quality issues. The system powered Multi-Band Intra-Team radios, Blue Force Tracking, computer projector, laptop computers, map plotter and printer, coffee pot and the TOC lighting. For the assessment's duration, Soldiers had the opportunity to evaluate the HE Humvee in the key areas of:

- Mobility in hybrid mode
- Silent mobility in all-electric mode
- Portable battery recharging
- Silent watch

"Soldiers have liked the silent watch capability," said MAJ John Williamson from the Soldier Battle Lab, Fort Benning, GA. "It allows the Humvee to sit in a battle position at night and operate battery chargers and other

devices without the need to periodically run the engine to charge the battery."

Soldier Battle Lab is conducting the experimentation efforts for the MUA, and several additional capability experiments were performed by the lab during the Soldier Training Exercises. The Soldiers examined infrared camera images of the HE Humvee's heat signature in power-export mode and compared them to the heat signature of a 10-kilowatt (kW) Tactical Quiet Generator (TQG). Evaluations were also made of the vehicle's audible signature in power mode versus the 10-kW TQG audible signature. MUA results are pending the completion of the entire set of assessments and Soldier feedback.

SSG Michelangelo Merksamer, Headquarters Co., 1st Battalion, 506th Infantry, 4th Regimental Combat Team, explained, "It's a prototype and has faults. These assessments have been designed to

work out the vehicle's flaws. It has some application down the road once you work things out."

Further HE Humvee assessments began in late November 2005 at Fort Benning. Two vehicles will be included in an Air Assault Expeditionary Force MUA that will demonstrate powering another TOC command post (CP), which will be located inside a building. By tapping into the building power mains, the assessment will demonstrate a CP exportable power scenario, convoying in hybrid mode, silent watch and silent mobility, while also being able to recharge batteries for the warfighter.

During the assessments, one HE Humvee will be configured with a single APDS, capable of delivering 15 kW of alternating current (AC) power. A second HE Humvee will be configured with two APDSs capable of 15 kW each, for a total of 30 kW of non-synchronized AC power. The APDS-equipped vehicles will provide onboard mobile battery charging capabilities, while replacing portable generators and providing power to battalion TOCs.

The HE Humvee is configured as a highly efficient Series-Hybrid that combines a small, lightweight 2.2 liter diesel engine, an advanced lead acid



The HE Humvee demonstrator traverses a creek during the MUA at Fort Campbell. (Photo courtesy of the Soldier Battle Lab, Fort Benning, GA.)



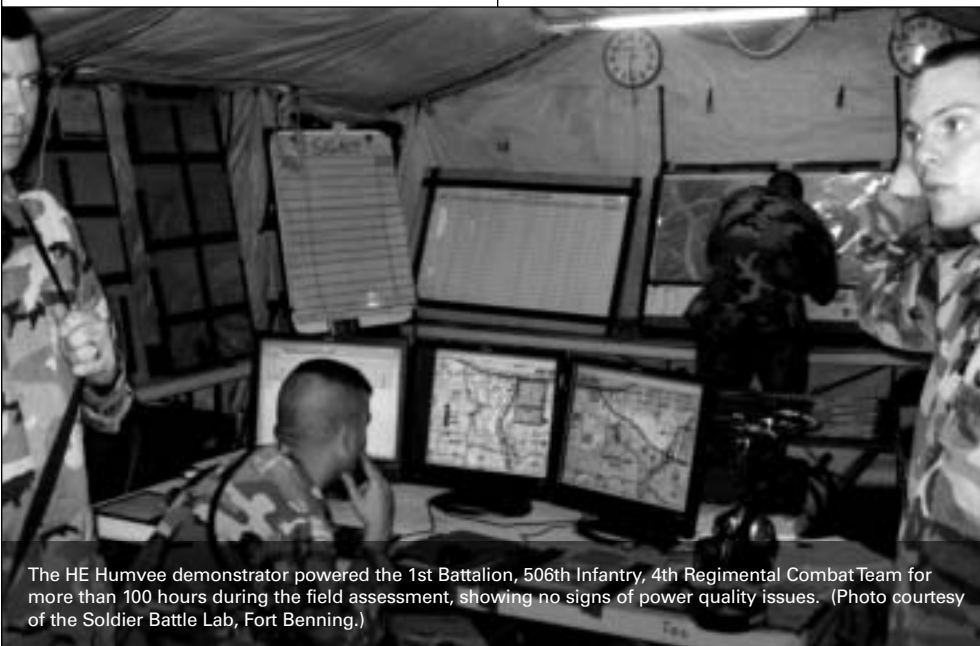
Configured with a single APDS, the HE Humvee is capable of delivering 15 kW of AC power. (Photo courtesy of the Soldier Battle Lab, Fort Benning.)

battery system and a brushless direct current (DC) generator, all of which provide sustaining electric power for the two-wheel drive motors. By using the vehicle's onboard 75-kW generator, storage batteries, energy management

system and the application of an APDS, the HE Humvee serves as an uninterrupted and efficient mobile power source. Additional DC power is available to the vehicle occupants while operating on terrain or while the

vehicle is stationary, giving the Soldier new options for mission planning and other planning-on-the-move operations.

Army benefits from HE power are endless. By applying this type of power source to military vehicles, the Army will have onboard power-generating capabilities and will highlight the capacities to recover braking energy, improve fuel economy, reduce emissions, provide silent mobility for increased survivability and improve Soldier mobility and performance.



The HE Humvee demonstrator powered the 1st Battalion, 506th Infantry, 4th Regimental Combat Team for more than 100 hours during the field assessment, showing no signs of power quality issues. (Photo courtesy of the Soldier Battle Lab, Fort Benning.)

ASHLEY JOHN is a Booz Allen Hamilton consultant working in support of the TARDEC Communications Team and is the Editor of the *TARDEC Quality Report*. She has a B.A. in business marketing from Michigan State University.

TARDEC Innovation Defies Intense Iraq Heat

Ashley John

This is my third Tuesday here. I have been stationed at Camp Anaconda, Iraq, for three weeks — it has been dry and stifling hot, 120 degrees Fahrenheit is a good day. We received add-on armor [AoA] kits for our Humvees a few days ago. Riding through the streets in an armored vehicle made me feel safe, but slowly the heat inside the Humvee became unbearable. It started sluggish, making me feel sweaty just like after a good game of basketball. But as the intensity grew, it became agonizing. I can remember sweating more, and my hands became clammy — it was almost hard to breathe. I lost focus for a second and tried to pull it together, the temperature was just too hot. My mission lasted for six hours and the heat wore me down from sheer mental and physical exhaustion.

A Soldier from 2nd Battalion, 256th Brigade Combat Team, prepares his Blue ForceTracker before leaving Camp Victory, Iraq, on patrol. (DOD photo by PH1 Brien Aho.)



Heat is a potential silent killer for our Soldiers. Excessive heat can cause premature fatigue, which can directly lead to Soldier mental process breakdowns. Overheating is especially prevalent in armored environments, increasing the need to cool Soldiers' core body temperatures whenever feasible.

Cooling the hot Humvee became an elevated priority for the Army's Tank Automotive Research, Development and Engineering Center (TARDEC), because of the realization that heat issues have become as serious as enemy fire for Soldiers in theater. Providing solutions to the intense heat stress felt by Soldiers is a rapid U.S. Tank-automotive and Armaments Command (TACOM) Life Cycle Management Command (LCMC) initiative that TARDEC, in collaboration with

the Natick Soldier Center (NSC), U.S. Army Research Institute of Environmental Medicine (USARIEM) and Program Executive Office for Combat Support and Combat Service Support (PEO CS&CSS), have transitioned to the "Cool the Force" program.

"This program has demonstrated mission capability enhancements that Micro Climatic Cooling [MCC] can provide to the Soldier," remarked Arthur H. Adlam Jr., TARDEC Associate Director. "The MCC enhances Soldier survivability and performance while operating in elevated temperature conditions for extended time periods."

During the summer of 2004 with the on-surge of armored vehicles — mainly Humvees — Soldiers were ex-

posed to relentless temperatures in excess of 130 degrees Fahrenheit. TARDEC, working alongside NSC and Foster-Miller Inc., developed a rapid solution to a question posed by PEO CS&CSS: "How can the Army enable Soldiers in [AoA] Humvees to perform longer missions, while alleviating the heat stress brought on by the armored tactical vehicle?"

The existing Red Dot air conditioning units did not provide sufficient cooling, especially when the gunner's turret ring was open. A response was

The MCC enhances Soldier survivability and performance while operating in elevated temperature conditions for extended time periods.



The water-filled vests fit under a Soldier's normal body armor and are connected via hoses to the vehicle's MCC subsystem. The chilled water is circulated through the garment. (U.S. Army photo courtesy of TARDEC.)

formulated to show that a Soldier can't properly operate and complete a mission safely with extreme heat conditions. Therefore, a solution needed to be devised that would cool a Soldier's body temperature for extended-duration missions.

Through the leveraging of existing Army systems, the team provided a rapid solution for warfighters. A cooling garment was already being used by the Air Warrior program, which had the ability to cool a Soldier's body temperature without interfering with daily operations. This garment would serve as a supplemental device to the industry-mounted Red Dot air conditioning units that have become standard in AoA military vehicles.

Each Humvee cooling kit consists of four Foster-NSC developed water-filled vests. The vests are designed to fit under each Soldier's normal body armor and are

Soldier feedback from the initial shipment of cooling vests showed that the liquid cooling vests did, in fact, provide the Soldier with sufficient cooling to increase mission duration and reduce the risks of heat-related medical problems.

connected via hoses to the vehicles' MCC subsystem, which was developed by Foster-Miller. The fungicide-treated water is chilled and circulated through the garment. A hands-free release system allows the Soldiers to quickly detach from hoses for emergency egress. The vest can continue to be worn outside the vehicle. This system can be installed in approximately one hour with a standard mechanics tool set by two Soldiers.

Soldier feedback from the initial shipment of cooling vests showed that they did, in fact, provide the Soldier with sufficient cooling to increase mis-

sion duration and reduce the risks of heat-related medical problems. "Since we have had the vests, they have become increasingly popular with the platoon — they argue over who gets to wear them," said 1LT(P) David J. Dixon Jr., 18th Airborne Corps. "They wanted me to ask for more."

In January 2005, Foster-Miller received a contract to procure 500 liquid cooling kits. The shipment of 500 liquid cooling vest kits for armored Humvees were sent to Camp Arifjan,



The collaboratively developed liquid vests serve as a supplemental device to the industry Red Dot air conditioning units that have become standard in AoA military vehicles. (U.S. Army photo courtesy of TARDEC.)

Kuwait, during the summer of 2005. In addition, PEO CS&CSS has requested that TARDEC investigate potential cooling units for the Family of Medium Tactical Vehicles and other military tactical vehicles.

“As a ground vehicle systems integration leader, TARDEC has leveraged existing Army technologies and incorporated them onto vehicle platforms that are currently being operated in desert conditions,” explained Dr. Richard McClelland, TARDEC Director. “This is a direct response to feedback from Soldiers in the field.”

The Humvee cooling kits can be expanded to fit other military and commercial vehicles, and are also being applied to ambulances to treat Soldiers needing medical emergency treatment for heat stress and stroke. Further operational assessments of the cooling kits are being made to gather Soldier performance evaluations on military vehicles.

The continual positive reception of the liquid cooling vests has been extremely motivational and rewarding for all project engineers. “First of all, thank you for all your support. The cooling vests worked very well for us, and I believe they will serve the Soldiers well in the future,” wrote MAJ Brit S. Britton, Commander, 644th Transportation Co.

Addressing harsh environmental threats to Soldiers was brought to the forefront of Army research because of the joint efforts initiated by TARDEC and NSC. At the onset of the PEO request, TARDEC had been tasked to find out whether there was an actual Soldier-identified need for supplemental cooling systems for armored vehicles, with the first focus on the Humvee Armor Survivability Kit (ASK). Using data from tests on ASK-equipped Humvees performed at Aberdeen Proving Ground, MD, and TARDEC, independent analyses were performed by the U.S. Army Research Laboratory Human Research and Engineering Directorate TACOM and USARIEM.

The analysis assessed the effects of heat on crew and vehicle functionalities. Both of these organizations concluded that there is a definite supplemental cooling requirement needed for Soldiers who perform missions longer than 90 minutes in hot-dry climatic zones, and for missions lasting no more than 60 minutes for hot-humid climatic zones.

Enhancing the mission and safety of the Soldier has been the end result of the collaborative efforts of all involved. Use of the cooling vests has increased mission duration and improved mental activity for warfighters. The cooling system alleviates Soldier hydration needs and serves as a heat stress treatment, minimizing the patient treatments for heat stress and heat stroke.

Enhancing the mission and safety of the Soldier has been the end result of the collaborative efforts of all involved. Use of the cooling vests has increased mission duration and improved mental activity for warfighters.

This LCMC collaborative solution addresses Soldiers’ current needs and benefits both the Current and Future Forces. Together, the Army and industry quickly resolved a need that will foster long-term requirements that are expandable to other

tactical and commercial vehicles. These systems are Soldier friendly and easy to install, leading to good health, greater safety and increased survivability. A Soldier now has the ability to beat the heat in Iraq by wearing one of the liquid-filled cooling vests while an occupant of a military vehicle. Operation “Cool the Force” is underway, and the hot Humvee is finally cooling off.

Editor’s Note: TARDEC, NSC and USARIEM were selected for the Collaboration Team of the Year Award at the 2005 Army Acquisition Corps Annual Awards Ceremony for the “Cool the Force” Vehicle Mounted Personal Cooling Program.

ASHLEY JOHN is a Booz Allen Hamilton consultant working in support of the TARDEC Communications Team and is the Editor of the *TARDEC Quarterly Report*. She has a B.A. in business marketing from Michigan State University.




A hands-free release system allows the Soldier to quickly detach from the hoses for emergency egress. The vest can be worn outside of the vehicle for short periods of time. (U.S. Army photo courtesy of TARDEC.)

Proposed Automotive Test Track Considered Crucial for High-Speed Combat Driving

Michael Cast

Roadside bombs and other attacks in Afghanistan and Iraq underscore the need for military vehicles that can maneuver rapidly, often on unpaved roads, while carrying the weight of added armor, weapons, ammunition and equipment. This change in operations poses a potentially serious problem for the U.S. Army because many of its utility vehicles were originally designed to travel at significantly slower speeds and drastically lighter payloads than today's missions demand — and with no armor protection.

None of the existing automotive test tracks at the Army's Aberdeen Test Center (ATC) can adequately support sustained high-speed automotive testing. ATC envisions an Automotive Technology Evaluation Facility (ATEF) that will give it enhanced capabilities for high-speed testing and maneuvering. (U.S. Army file photo courtesy of ATC.)



The Army Test and Evaluation Command (ATEC) and its technical staff in the Developmental Test Command (DTC) and DTC's Aberdeen Test Center (ATC) are seeking to address that problem by constructing an Automotive Technology Evaluation Facility (ATEF) at Aberdeen Proving Ground (APG), MD. The planned facility would be used to test military vehicles at sustained speeds of 70 miles per hour or faster, a capability ATC currently lacks, despite operating a variety of test tracks at the proving ground, said ATC's Randy Babcock, one of many people striving to make the ATEF a reality.

"None of the currently existing courses at APG can support sustained high-speed testing," Babcock explained. "The ATEF is a capability desperately needed so DTC can evaluate test vehicles in ways in which they are employed by Soldiers in the field. Testing would then be able to identify possible safety and reliability issues to allow safe and effective use of vehicles in theater."

According to Army sources, U.S. Soldiers in the combat zone do 90 percent of their driving on roads — both paved and unpaved — and at maximum possible speeds. They put a great deal of mileage on their vehicles, often from

500 to 2,000 miles per mission. Insurgent attacks have also made it necessary to drive vehicles with armor protection that they were not originally designed to carry. The weight of added armor on convoy vehicles negatively impacts both reliability and performance characteristics. "The ATEF would enable testing that reflects these realities," Babcock continued. "Additionally, ATC engineers see this facility as essential to the Tactical Vehicle Reset Program, the Army's program for reconditioning tactical military vehicles that have undergone heavy operational use in Afghanistan and Iraq."



The Stryker interim armored vehicle is put through its paces during road trial testing at ATC. (Photo courtesy of ATC.)

high-speed track is a bidirectional, two-lane paved roadway with short-radius circular turnarounds at each end to return traffic to the straight section of the course. Traffic at each end of the course must slow to 25 mph to negotiate the turns before getting back up to the desired test speed. Once they get back up to

northwest section. The track would be 4.5 miles long and have curves with at least a 1,600-foot turning radius to enable safe turns with a minimum of banking. The course would also have 75-foot runoff shoulder areas on the edge of the track to allow vehicle drivers to safely stop or control vehicles in the event of a mechanical failure. The ATEF is designed to permit safe testing at high speeds for vehicles the Army currently uses and to provide safe sustained high-speed testing of future military vehicles such as those being developed for the Army's Future Combat Systems.

"The facility's proximity to Phillips Army Airfield, in an area selected for minimum environmental impact, would not pose an aviation safety problem or interfere with the airfield's operations," Babcock said. "There are a lot of guidelines and practices you need to follow whenever you build something close to an airfield, and we have coordinated the location of the track to maximize test use while minimizing the effect of our operations on the airfield. Traffic control systems

"ATC has tested numerous vehicles with armor kits in the past two years at Aberdeen facilities, but we haven't been able to do all the testing we wanted to perform because of the inability to perform sustained high-speed operations and because of accelerated timetables for getting these systems fielded," remarked ATC's Todd Morris, also involved in the project. "ATEF will give us that capability. Right now, our only

speed, you only have a minute at maximum speed before they have to slow down to turn around at the other end. ATEF is designed to keep that speed up throughout."

The facility as currently planned would consist of a tri-oval test track with a 57-foot-wide roadbed containing two paved and two gravel lanes that loop around Phillips Army Airfield in APG's



An M2A2 Bradley Fighting Vehicle kicks up a cloud of dust as it leaves Forward Operating Base MacKenzie in Iraq. The DTC's ATC is seeking to build an ATEF to enhance the test capabilities at ATC for both tracked and wheeled vehicles. (U.S. Air Force photo by SSGT Shane Cuomo.)

will be in place around the track to assure safe operation around the airfield and on the test track.”

The ATEF project has a history that goes back nearly two decades and includes numerous studies. To complete a site feasibility study, an independent firm examined 10 other DOD installations across the United States and four private-industry sites in Arizona, California, Nevada and Ohio. ATC has been designated as DOD’s Automotive Center of Excellence, and has developed expertise valued throughout the DA. For this and various other reasons, ranging from lack of adequate size to a lack of security, the study indicated that APG would be the best location for the facility.

“Although the current war is taking place in the desert, the temperate climate in Maryland is absolutely necessary for realistically testing Army vehicles that might be used anywhere in the world in the future,” explained ATC’s J.P. Moore, a mission support contractor closely involved with the project. “The environment at APG replicates 80 percent of the world’s climatic conditions. Other places don’t have that. APG is the Army’s only temperate-climate Major Range and Test Facility Base.”

An initial study ruled out several areas of the proving ground because of their use as active ranges or because they were within areas containing roads or buildings. The airfield area stood out as the most logical location for the ATEF because it is in an area of APG where the track would have the least impact on wetlands.

The proposed course for the ATEF was altered more than once to lessen the environmental impact, reducing it to about 17.5 acres of wetland impact.



The proof-of-concept Joint Tactical Electrical Vehicle built for the U.S. Marine Corps is put through its paces on the 60 percent slope at ATC’s Munson Test Area. (Photo courtesy of ATC.)

To mitigate that impact, the Army is planning to create or enhance wetlands in other locations. The U.S. Army Corps of Engineers (USACE), which is close to completing a 10-percent design of the ATEF, is including wetland mitigation measures in the design.

“USACE projected two years ago that ATEF would be a multimillion dollar project, a sum ATEC and DTC will have difficulty funding without congressional support,” said Todd Morris, another ATC employee closely involved with the ATEF project. “Although the ATEF is scheduled for construction funding in 2011, DTC Commander BG Michael Combest sees the facility as crucial to the war effort underway, now that high-speed driving is the norm in the combat zone. To build a facility that will directly support Soldiers, Combest is pushing for funding and construction three years ahead of the current schedule.”

“The track has been conceptualized; it has been laid down in a rough position around Phillips for the last five to eight years,” Babcock continued. “In

the last eight or nine months we’ve been working hard to address the aviation safety issues, minimize impact to the wetlands and to go out and talk to every [APG] tenant that has operations adjoining the ATEF track to alleviate people’s concerns. We actually bumped the track here and there to be outside the explosive safety arc around the new National Ground Intelligence Center facility.”

The road ahead for the ATEF may be bumpy because of the cost of construction, but its proponents at DTC and ATC believe very strongly that this added test capability will ultimately pay off in a big way for the safety of U.S. Soldiers. Its location near ATC’s diverse test tracks would greatly facilitate other types of vehicle testing as well.

MICHAEL CAST is DTC’s Public Affairs Officer. He is a former Army photo-journalist and Keith L. Ware Award winner. He has a B.A. in journalism from Arizona State University.

Army Science Board — Providing a Half Century of Scientific Advice and Guidance

LTC Scott S. Haraburda

For more than 50 years, the Army Science Board (ASB) has served as the Army's senior scientific advisory board. When it was chartered as a Federal Advisory Committee under the *Federal Advisory Committee Act* in 1977, the ASB replaced the Army Scientific Advisory Panel (ASAP). Both the ASAP and the ASB grew out of the need for Army-specific guidance on scientific research and development (R&D) and the Army's desire to maintain its strong technical advantage over other nations.

Secretary of the Army Dr. Francis J. Harvey (center), a former ASB member, awards the Decoration for Distinguished Civilian Service to departing ASB Chair Dr. James Tegnalia (left) as ASB Executive Secretary LTC Scott Haraburda (right) reads the citation, Feb. 24, 2005. (Photo courtesy of ASB Photo Archives.)

From the founding of the Army through the early 1900s, the Army did not have an effective R&D program — production and procurement were emphasized and R&D during this era was limited to product improvement. Prior to World War II, the Army's R&D was controlled through the G-4 as a function of the supply arms and services. In October 1943, Secretary of War Henry Stimson indicated that he wanted scientific help in the war effort, resulting in the R&D branch's reorganization and its elevation to division level in May 1944. This elevation eliminated obstacles related to recruiting and retaining enough qualified scientific people, and provided them the clout to effectively perform their duties.

Following World War II, despite GEN Dwight D. Eisenhower's warnings that using scientific and technological resources solely for procurement purposes limited the usefulness of those resources, and other indications that separating R&D from procurement and production would benefit the military, concerns remained that senior Army leaders lacked the vision to effectively guide the direction of R&D

programs. However, funding and personnel limitations continued to direct R&D toward the necessary areas of procurement and production. A few years later, Dr. Donald Loughridge, the Army's Senior Scientific Advisor, was concerned that the Army lacked an effective basic research program, resulting in its inability to attract desirable entry-level scientists to its laboratories. By April 1950, Secretary of the Army Gordon Gray was also concerned with the Army's R&D program and its ability to support warfighters in future wars. He did not believe that the United States could fight a war based solely upon Soldiers, especially with the fall of China to communism.



Dr. Harold Agnew, eighth chair of the ASAP, helped develop the first atomic weapons and is seen here on Tinian Island in 1945 carrying the plutonium core for the Fat Man bomb used on Nagasaki. (Photo courtesy of Los Alamos National Laboratory.)

The Role of Scientific Advisors

Shortly thereafter, Gray's replacement, Secretary of the Army Frank Pace, evaluated the existing Army R&D program, which was then engaged in supporting the conflict in Korea. In January 1951, the evaluators recommended that a research advisory board be established to assist the Secretary of the Army in R&D matters. Based on this report, GEN Joseph Collins, Army Chief of Staff, recommended establishing an Army Scientific Advisory Committee as this research advisory board. By March, Pace approved establishing this board in principle and in November he took the first steps to obtain this scientific advice. Without formally establishing a committee, the Secretary appointed 10 outstanding scientists and industrialists as his scientific advisers. These pioneer advisers were:

- **Dr. Detlev Bronk**, National Academy of Sciences President, 1950 to 1962, and Johns Hopkins University President, 1949 to 1953. He was credited with formulating the modern theory of biophysics.

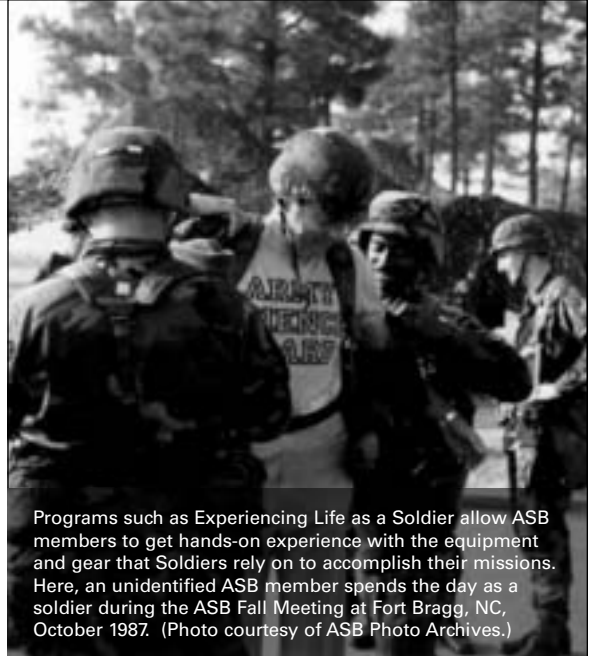


As daughter Carolyn and President Dwight D. Eisenhower look on, Dr. James R. Killian Jr. is sworn in as the presidential science advisor in 1957. Killian served as the first ASAP chair from 1951 to 1956. (Photo courtesy of NASA.)

- **Crawford Greenewalt**, DuPont President, 1948 to 1962. He was instrumental in transforming the theoretical work into a production system capable of manufacturing sufficient plutonium for the Manhattan Project.
- **Robert Haslam**, consultant and board of directors member of W.R. Grace & Co. and retired Standard Oil Co. Vice President. Previously, he was a professor of chemical engineering at the Massachusetts Institute of Technology (MIT).
- **Dr. Frederick Hovde**, Purdue University President, 1946 to 1971. During World War II, he was Chief of Division 3, Rocket Ordnance Research, National Defense Research Committee.
- **Kaufman Keller**, Chrysler Chairman of the Board, 1950 to 1956; Chrysler President, 1935 to 1950.
- **Dr. James R. Killian Jr.**, MIT President, 1948 to 1959; MIT Corp.

Chairman, 1959 to 1971. Following his service on this board, he became the presidential science advisor to President Dwight D. Eisenhower from 1957 to 1959.

- **Dr. Charles Lauritsen**, Danish-born physicist and professor of electrical and radio engineering at the California Institute of Technology, 1911 to 1962. During World War II, his nuclear physics research was instrumental in the Manhattan Project.
- **Dr. Murrough O'Brien**, University of California's College of Engineering Dean, 1943 to 1959. Previously, he was the university's Mechanical Engineering Department Chair, 1937 to 1943.
- **Dr. William Shockley**, Bell Telephone Laboratories Research Physicist, 1945 to 1954. During World War II, he was the Anti-Submarine Warfare Operations Research Group Research Director. He received the Nobel Prize in physics in 1956 for his role in developing the transistor.
- **William Webster**, New England Electric System Executive Vice President and Director. Following World War II, he was Deputy to the Secretary of Defense on Atomic Energy



Programs such as Experiencing Life as a Soldier allow ASB members to get hands-on experience with the equipment and gear that Soldiers rely on to accomplish their missions. Here, an unidentified ASB member spends the day as a soldier during the ASB Fall Meeting at Fort Bragg, NC, October 1987. (Photo courtesy of ASB Photo Archives.)

and the Chairman of the Military Liaison Committee to the Atomic Energy Commission. In 1950, he was the DOD R&D Board Chairman.

Following the Korean War, the Advisory Committee on Army Organization analyzed the Army's organization with respect to its ability to support the Nation in times of war and peace. This committee praised the scientific advisory group's creation, indicating it was a significant step in bringing the best scientific ability and experience to the Army. In 1954, the House Committee on Government Operations issued a report stating that the Army's scientific advisory group was not being used effectively. Army Secretary Robert TenBroek Stevens, Pace's successor, concurred with these recommendations and established plans to formalize the ASAP with a permanent charter, enlarge its membership and give it more latitude in its efforts.

The ASAP — then with 25 members — held its first meeting Nov. 16-17, 1954. During the meeting, the panel heard briefings on various areas involving the Army's R&D efforts. By 1958, the



ASAP members socialize with GEN Omar N. Bradley (left, in wheelchair) and BG William Burdeshaw (right, in fatigue uniform) at an ASB event at Fort Bliss, TX, April 1977. (Photo courtesy of ASB Photo Archives.)



Army Acquisition Executive and Assistant Secretary of the Army for Acquisition, Logistics and Technology Claude M. Bolton Jr. presents a Certificate of Appreciation for Patriotic Civilian Service to departing ASB member Dr. John Blair (right) as ASB Chair Dr. Frank Akers Jr. (left) and LTC Scott Haraburda (at podium) look on, Feb. 24, 2005. (Photo courtesy of ASB Photo Archives.)

panel grew to 70 members and divided itself into eight different subpanels:

- Air Mobility.
- Chemical, Biological and Radiological Warfare.
- Communications and Electronics
- Firepower.
- Environmental Research.
- Human Factors.
- Surface Mobility.
- Research Organization and Planning.

Over the past 50 years, 590 people — including 50 women — have served as ASB members, resulting in more than 3,700 years of uncompensated, voluntary service to the Army. The ASB's distinguished members also include two astronauts, three Olympians (one with a silver medal in the long jump), one U.S. Ambassador to France and a member of the first expedition team to ascend Mount Minya Konka in Eastern Tibet, China.

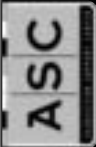
ASB and ASAP personnel have accepted many of the significant challenges the Army has had during the

past half century. Even though these are some of the country's busiest people, these 590 board members have willingly rearranged their complex schedules on short notice to use their own time to solve these significant challenges. They have placed the needs of their country first, and the Army has been fortunate to have, and is grateful for, their generous service. With good fortune, the ASB will continue supporting our Nation long into the future.



ASB members visit various Army facilities to see firsthand what products the Army uses. Tours such as this November 1978 tour of Fort Bliss help ASB members better understand the role that R&D plays in providing Soldiers the very best technology and equipment. (Photo courtesy of ASB Photo Archives.)

LTC SCOTT S. HARABURDA is the Deputy Site Project Manager for the Newport Chemical Agent Disposal Facility in Indiana. He has a B.S. in chemistry from Central Michigan University and both an M.S. and a Ph.D. in chemical engineering from Michigan State University. He is a registered Professional Engineer from the State of Indiana. As an Army Reserve lieutenant colonel, he was selected to command the 464th Chemical Brigade. As an Army Acquisition Corps member, he holds certifications in program management; contracting; systems planning, research, development and engineering; test and evaluation; and information technology.



From the Acquisition Support Center Director

The U.S. Army Acquisition Support Center (ASC), along with other organizations, continues to aggressively support the Army's Transformation Plan. Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT) Claude M. Bolton Jr., and Military Deputy (MILDEP) to the ASAALT LTG Joseph L. Yakovac, have tasked ASC to lead Army Acquisition Corps (AAC) transformation. The AAC's overall Campaign Plan goals are to transform Army acquisition by aligning and horizontally integrating AAC transformation with the Army's overall transformation initiatives with new and better business practices, training and professional development opportunities across the entire AL&T Workforce.



AAC Transformation Initiatives

The AAC's transformation strategic objectives are supported by several critical initiatives designed to meet the MILDEP's vision and intent for the AAC. This link — <http://asc.army.mil/transformation/default.cfm> — will take you to the Transformation Campaign Plan Web page and the latest information, policies, initiatives, briefings, program developments and newsletters. Current AAC initiatives include:

Initiative #8 — The *Civilian Operational Experience Program* (COEP) strategy is to reach the civilian AL&T Workforce at all levels and acquisition career fields, informing the workforce of Army operations, educating them on the warfighter's mission and providing guidance on planning this experience within their respective career fields. Additional strategic alliances with Army Career Program Intern Coordinators will be forged to incorporate the operational experience requirements in the U.S. Army Intern Program training requirement plans. Please contact Kelly Terry at kelly.terry@us.army.mil or (732) 532-1406 for more COEP information.

Initiative #9 — The *ACC Board Selection Process* initiative is a recommendation to the Secretary of the Army requesting a change to the Central Select List (CSL) slating approval process for all AAC officers and civilians being

assigned to CSL billets from the Chief of Staff of the Army to the ASAALT/Army Acquisition Executive. Please contact MAJ Andrea Williams at andrea.williams@us.army.mil or (703) 805-1248/DSN 655-1248 for the latest AAC board selection process information.

Initiative #19 — The *Executive Leadership Program* (ELP) is designed to build intellectual capital and foster continuous learning opportunities for General Officers and Senior Executive Service personnel through team-learning events, individual learning sessions and opportunities for increased integration with warfighters. For information on the ELP, please contact Thomasine Coleman at thomasine.coleman@us.army.mil or (703) 805-1229/DSN 655-1229.

Initiative #33 — The *Expanded Competitive Development Group* (CDG) *Program* seeks to design and plan a full life-cycle CDG Program to include a diversity of experience in developmental positions, similar to their military counterparts, that creates one leadership career track that travels to staff and line positions and may incorporate Civilian Rotational Development Assignment Program (C-RDAP) initiatives on a regional basis. C-RDAP is purposely designed not to be Washington, DC-centric. Senior civilian and military leaders make conscious decisions to use the CDG Program as a screening process for identifying and grooming high-potential future civilian AAC leaders and to implement a primary development to that end. Therefore, the life-cycle approach is warranted. This initiative will include leadership assessment of the proposed CDG Program. For more information about the CDG Program, please contact Ancel Hodges at ancel.hodges@us.army.mil or (703) 805-1234/DSN 655-1234.

Initiative #49 — Develop a *Lean Six Sigma AAC Business Practice Policy Strategy* that is specifically designed for Six Sigma training events, focusing on the two pillars of Lean True North — continuous improvement and respect for people. For more information, contact MAJ James Bamberg at james.bamberg@us.army.mil or (703) 805-2732/DSN 655-2732.

Two other critical AL&T Workforce initiatives are the Supervisor Outreach Program and the C-RDAP.

Supervisor Outreach Program

The Supervisor Outreach Program is designed to rejuvenate the roles of workforce leaders and supervisors by refocusing rating supervisors' support to career management of their acquisition personnel. To help leaders and supervisors

make this change, the Regional Customer Support Offices' (RCSO) mission has shifted its focal point from assisting workforce members to supporting their rating supervisors. Based on this revised approach, ASC is in the process of executing this program to leverage supervisors as change agents for AAC transformation. This empowers supervisors to manage their workforce making them expert, relevant and ready for current and future AAC missions and assignments. The Supervisor Outreach Program establishes a strategic partnership between the RCSOs and AL&T Workforce supervisors.

The Acquisition Career Managers (ACMs) will directly support rating supervisors, ensuring they have the necessary tools and information to manage their acquisition workforce. The program also leverages the power, influence, experience, expertise and community contacts of Acquisition Career Management Advocates to build stronger links with ACMs and AL&T Workforce supervisors. As leaders and change agents, supervisors have a clear-cut responsibility to provide career counseling to mentor their employees and help them develop to their fullest potential — personally and professionally. It's a supervisor's duty as a career counselor to motivate and encourage his/her workforce to take advantage of all educational, training and experiential opportunities to increase productivity and aid the development of each individual's acquisition career progression. In the near future, ACMs from the RCSOs will be notifying acquisition organizational points of contact to schedule meetings with rating supervisors in accomplishing an objective assessment of the strengths and developmental needs of their respective staffs. The *supervisor* is the key to program success. Type this link into your Internet browser to take you to the Supervisor Outreach Program's Quick Reference Guide for Acquisition Career Management: asc.army.mil/pubs/so/default.cfm.

Civilian Rotational Development Assignment Program

C-RDAP is designed to enhance professional development. The AAC has always encouraged workforce members to broaden their respective experience and actively manage their careers. For most, this meant moving functionally, organizationally or geographically. Many were unwilling or unable to make this sacrifice due to family, financial or other considerations. C-RDAP now makes it possible to make a move without leaving the "comfort zone" of their current position of record. C-RDAP is structured to allow individuals to gain experience in another career field,

organization or another commodity in their local commuting area. The ASC now offers the opportunity to develop required acquisition/leadership skills and concurrently gain career-enhancing experience.

The C-RDAP process will begin with a memorandum, signed by the local ASC Regional Director (RD), and then forwarded to all organizations soliciting potential developmental assignments. Simultaneously, the RD will send a general announcement to those seeking to participate in the C-RDAP opportunity. Interested individuals must submit an application package that includes a current résumé, Acquisition Career Record Brief, Senior Rater Potential Evaluation and Individual Development Plan. The candidate's needs, career-enhancing goals and objectives must be clearly identified. A local panel review process will match requirements as closely as possible to a developmental assignment. C-RDAP will initially be announced in select areas sometime in early 2006. More information will be forthcoming on the ASC home page at <http://asc.army.mil/programs/rda/default.cfm>. C-RDAP points of contact are Eileen Reichler at eileen.reichler@us.army.mil or (703) 805-9430/DSN 655-9430 or LaVerne Kidd at laverne.kidd@us.army.mil or (256) 955-2266/DSN 645-2266.



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



Practical Project Management — Leading Your Project

COL John D. Burke

Practical Project Management is the first in a series of short articles to improve Army project and product managers' (PMs') effectiveness.

Purpose of a PM? Lead Change

Why does the Army charter PMs? Simply put, we want PMs to be the leaders of the “M” in Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF). The most discernable change is where the program moves from one state to another like water from solid to liquid. Examples are the transition from System Design and Development to full-rate production (FRP), bringing a new product area into the force, championing an initiative, converting to Soldier-focused logistics or, eventually, program dissolution. While we define a PM's tenure based on major milestone decisions, these should be seen as a guidepost, like final exams in coursework. The substance is leading a program through a life-cycle phase.

Alternatively, a PM is necessary when the moving parts in a program area are of sufficient volume and complexity. Examples are Acquisition Category I or basket programs in FRP with considerable warfighting effects, undergoing selective life extension program or upgrades such as the AH-64A to AH-64D Apache or the UH-60A, L and M Black Hawk helicopters. Finally, if a program isn't undergoing a metamorphosis, then the PM's mission is preparing to move from active program management to commodity or contract management. Here, the PM may be implementing steady-state processes such as Lean Six Sigma, setting up administrative contracting or Reset.

Writing the Project Office Operations Order

PMs should ask themselves prior to the change of charter ceremony, “What is it the Army wants me to change?” I recommend writing a 3-5 year personal operations order where the mission statement is the change statement and the essential and

implied tasks are your program objectives. No Table of Organization and Equipment commander wants to be accused of “punching his or her command ticket,” and equally disparaging is for a PM thought to be “riding his or her program.”

The program operations order must be written in context of the other stakeholders' responsibilities such as the *Army Campaign Plan*, Program Executive Office (PEO) and Life Cycle Management Command, the U.S. Army Training and Doctrine Command (TRADOC) Systems Manager who oversees DOTMLPF, Program Objective Memorandum and Battlefield Operating System modernization plans. I encourage maximum consideration of all program constituents such as the Office of the Secretary of Defense or HQDA staffs, Director of Operational Test and Evaluation, Army Materiel Command, TRADOC and Army Test and Evaluation Command.

Your tenure as a PM requires the mission and execution plan to be understood and communicated throughout the PM office and the affiliated communities. A 3-5 year horizon commits you to the long run and

creates depth of purpose within your team. My individual *Officer Evaluation Support Form* was 90 percent the same for three years, using my personal mission statement to communicate intent and expectations.

For example, the Unmanned Aerial Vehicle Systems (UAVS) Project Office mission statement is: “Expand the UAVS capabilities for the Army and

Joint Forces to support the global war on terrorism, and effectively and efficiently use the resources made available for UAVS programs.” This statement assigns an urgent priority to those forces deployed or deploying to *Operations Enduring and Iraqi Freedom*, the evolving systems being developed for the Army's Modular Force and sets PM standards at the highest output and lowest cost. We also set the project office to support PM Future Combat Systems Brigade Combat Team on Unmanned Aircraft Systems.

Leadership by Principles

The axiom “Leadership begins at the top” is executed by leading through your direct reports. PMs will develop and sustain long-lasting effects by inculcating projectwide principles through intermediate leadership. Examples of key



Strong leadership, solid planning and effective communication are as essential to office-based program success as they are to field operations. PM decisions should be made and executed with the authority of a field order. Here, Soldiers from the Texas Army National Guard practice counterinsurgency tactics near Bagram, Afghanistan. (U.S. Army photo by SPC Harold Fields.)

principles reflecting my values included universal integrity on any aspect of the programs, reliance on professional expertise and advice from the project office's military and civilian members, operating financially "in the black," and building high-performing and inclusive teams internal and external to the project office.

The command climate on an individual level is where all project team members, including prime and support contractors, are expected and empowered to fully use their intellect, education and experience. While fostering creativity, this environment enables project office members to challenge contentions and premises through a vertical and horizontal dialectic.

Day-to-Day Leadership

I chose to rate the deputy project manager, each of the product managers (LTC) and division chiefs (NH-IVs) so these seven individuals were equal in access and authority with the project manager. Naturally, the Deputy PM was the most senior civilian in the project office with requisite expertise on civilian matters. There are many variations on how to set up the relationship of the PM and the intermediate leaders depending on the program phase, tempo and individual capabilities.

Through this small unit leadership of the PM and seven direct reports, issues in products and business, engineering and logistics were of equal importance between function and output. We established a check-and-balance relationship. While the product managers were responsible for cost, schedule and performance, the division chiefs had equal responsibility for quality, resource allocation, professional development and projectwide integration in their functional areas.

The PM must understand the tempo and force of decision making. When a decision is made, it should be treated as an order with appropriate commitment and gravity. The leader sets the stage with how decisions are made and, once understood, uses that template to process projectwide decisions. One central theme in my decision discussions is using fact-based analysis from subject matter experts' bearing on the problem. My expectations for the product and functional leads in a decision brief required them to discuss as experts in their areas and consideration of the associated implications in other products or functions.

A few other leadership traits of successful PMs include being visible inside and outside the project office. My personal favorite was walking through the whole project office once or twice a week when in town to see each individual. A second trait is what makes you laugh. For me it was humor in the

absurd, especially exaggeration and hyperbole. Third is in what areas do you take a distinctly personal interest? An area you devote a disproportionate time will permeate the project office and associated activities. Mine was the science and technologies within the Army and throughout DOD attributed to UAVs because these are the seed corn of countless good ideas, distracters and program constituent interests.

The Army assigns commensurate authority and responsibility to its product and project managers to accomplish Army-wide goals. The PM is the leader of this change mission who needs to describe, communicate and commit through intent and process the means to execute the mission. The PM has to develop a 3-D view of the internal and external factors, including personal and organizational dynamics, to achieve substantive progress for the program.

The next article in this series will be "Program Perspective — Internal and External View of a Project." To comment on this article, e-mail a Letter to the Editor at LetterToEditor@asc.belvoir.army.mil.

COL John D. Burke is the Director, Unmanned Systems Integration, Army G-3/-5/-7, HQDA. He previously served as the Army's Unmanned Aircraft Systems Project Manager, PEO Aviation.

News Briefs

Troops Could Have New Picatinny-Developed Smart Artillery Munition by March

Raymond Sicignano

U.S. military troops in Iraq and Afghanistan could have a significantly more accurate howitzer-fired munition by March 2006, following successful demonstration of the Army's first fully autonomous guided projectile, Excalibur, at Yuma Proving Ground (YPG), AZ, in September 2005.

Officials from the Army Project Manager (PM) for Combat Ammunition Systems, Picatinny Arsenal, NJ, say the 155mm guided Excalibur round, known as the XM982, is more accurate than any currently available. A special team

headquartered in Picatinny is managing the development effort for the 165 Excalibur rounds that have been contracted for \$23 million. The YPG demonstration brought the program a step closer toward fulfilling an urgent request to put Excalibur in Soldiers' hands sometime this year.

The projectile's accuracy is better than 10 meters, a figure that represents a huge improvement over existing munitions. Excalibur will be used in Army and Marine Corps howitzers, including the M109A6 Paladin, the M777 Lightweight 155 Howitzer and the Future Combat Systems (FCS) Non-Line-of-Sight (NLOS) Cannon.

"Excalibur will reduce collateral damage, increase friendly troops' survivability and accomplish the mission more efficiently," said COL Ole Knudson, the PM who oversees Army combat ammunition development programs. Knudsen called the YPG demonstration a tremendous success. "Excalibur has been proven at the system level to meet its precision and lethality objectives," he said.

The demonstration consisted of firing an Excalibur projectile from a Paladin 155mm self-propelled howitzer at a target 15 kilometers away. Eyewitnesses said the munition detonated successfully within seven meters of the target. The round was set to activate in "height-of-burst" mode using an enhanced portable inductive artillery fuze setter.

During flight, the projectile "de-rolled" successfully, deployed canards, acquired Global Positioning System signals, calculated the navigation solution and maneuvered itself to the target, which it then destroyed.

The Program Executive Office for Ammunition manages the program with the support of the U.S. Army Armament Research, Development and Engineering Center (ARDEC). A cooperative effort between the United States and Sweden,

An M109A6 Paladin 155mm Self-Propelled Howitzer fires the new Excalibur projectile during a demonstration. Coupled with the howitzer's onboard automated fire-control system, Excalibur's enhanced accuracy will make it the munition of choice for the Paladin, M777 Lightweight Howitzer and FCS NLOS weapons platforms. (U.S. Army photo.)

Raytheon Missile Systems and BAE/Bofors Defence Systems formed a contractor team that is designing the munition. Subcontractors include General Dynamics, Honeywell, KDI Precision Products, Interstate Electronics Corp. and EaglePicher Technologies.

Raymond Sicignano is the ARDEC Project Officer for the XM982 Excalibur Precision Guided Projectile.

ALTESS News

ALTESS Customer Support Center

Joseph G. Plott

Acquisition personnel in the program executive and program management offices are continuously under pressure to make quality decisions within stringent budget and schedule constraints. These employees are the acquisition community's tip of the spear for warfighter support. The critical decisions made are fueled by the information from the acquisition database system maintained by the Program Manager Acquisition, Logistics and Technology Enterprise Systems and Services (PM ALTESS) and viewed through numerous end-user applications such as Acquisition Information Management, Web Ammunition, Virtual InSight, Web Army RDA Budget Update Computer System, Smart Charts, Probability of Success, Acquisition Program Baseline, Chief Information Office and Modern Army Recordkeeping System.

Over the years, PM ALTESS has worked to develop, host and merge dozens of acquisition systems into a single database. As PM ALTESS has grown to approximately 87,000 users with its various applications, so has our requirement to provide the acquisition community with timely, high-quality data and support services. Our systems' growth and our desire to provide world-class customer service have enabled us to completely reorganize and redesign our help desk people, processes and infrastructure to create our new "Customer Support Center."

How We Are Reorganizing

As PM ALTESS developed new applications, help desk personnel were placed to support each of those products. PM

ALTESS is streamlining and consolidating these individual help desks into one Customer Support Center. All inquiries and support requests will route to one location — the PM ALTESS Customer Support Center at **CustomerSupportCenter@altess.army.mil**, 1-800-981-3234, or <https://portal.altess.army.mil>. The PM ALTESS Customer Support Center will be your one-stop shop for assistance.

What You Can Expect

The PM ALTESS Customer Support Center will be able to process your requests with an immediate answer or promptly elevate it to our expert teams, as well as track requests from start to finish, obtain Web-based status reports and provide an improved Frequently Asked Questions database — all with a personal touch.

What's the bottom line for you, the customer? Timely, accurate and comprehensive answers so you can continue with your critical mission.

Joseph G. Plott is the team leader for the Customer Support Center at PM ALTESS, Radford, VA.

Worth Reading

Not a Good Day to Die

Sean Naylor
Berkley Books, 2005



Reviewed by Scott Curthoys, a retired U.S. Army military intelligence and foreign area officer, who now is a counterintelligence analyst contractor for a federal agency.

Almost like a right of passage, the United States must absorb a bloody nose in the first major battle of every war before sizing up the enemy and going to work.

It was only after battles such as Kasserine Pass in World War II and the forlorn stand by Task Force Smith during the Korean War that our military leadership began to apply to the battlefield what had previously been an academic

consideration of war. This was the case in March 2002 when the United States went into the Shahikot Valley of Afghanistan in the first significant face-to-face combat with the enemy in the global war on terrorism (GWOT).

Operation Anaconda was designed to block the escape routes through the mountains for Taliban and al-Qaeda forces occupying villages in the valley. The idea was to pin the enemy in place so that Afghan forces (with American guidance) could sweep into the valley and secure the villages. As the American forces landed and moved toward their blocking positions, it quickly became evident that the enemy had the key terrain and was not in the valley.

In his book, *Not a Good Day to Die*, Sean Naylor does an exceptional job of alternately chronicling the failure of U.S. leaders to assemble a coherent and properly equipped force with the exceptional bravery and fortitude of individual Soldiers and their units. *Not a Good Day to Die* is not a memoir, told from the point of view of either a general or individual soldier. Nor is it an analytical account written by a professor of history. Instead, Naylor approaches the story as the outstanding journalist he is by observing, recording the first draft of history in a beat-up notebook, interviewing participants and then reporting the facts in a colorful and engaging style.

Naylor admits that this was “not an easy book to report.” It is also not an easy book to read. It requires patience and more than a little understanding of the military and its particular language. Naylor didn't write the book as much as assemble it — much like a chef assembling a dish, ingredient by ingredient. For some readers, the first part of the book will be tedious as Naylor attempts to set the scene by introducing a large cast of characters.

But like the recipe for a good dish, each ingredient in Naylor's book has a purpose. Clearly emerging from this “stew” of characters is the realization that there was little unity of command in *Operation Anaconda*. This lack of a unified command structure stemmed from the parallel efforts of conventional troops and special operations forces in the Shahikot Valley. MG Franklin Hagenbeck, Commanding General, 10th Mountain Division (Light), was the nominal commander of all forces involved in *Operation Anaconda* except those from Joint Special Operations Command (JSOC). What Hagenbeck led was a force cobbled together from the 101st Airborne Division (Air Assault) and his own 10th Mountain Division. Meanwhile, the JSOC presence included a bewildering array of task forces and teams, including allies, which were connected to Hagenbeck's effort only through the personal liaison of a few individuals.

The author's descriptions of the operational environment — the steep mountains, rocky terrain and the cold weather — serve to highlight the exceptional efforts made by the special operations reconnaissance teams and the troops that were airlifted into the valley. Among the several heroes in the book were the special operators that occupied overwatch positions above the valley in the days before *Operation Anaconda*. They were the first to realize that the enemy was not in the valley but was in fact on the high ground surrounding the objectives. It seems, however, that this realization came too late for planners to change the operation — a failure in flexibility.

The plan for *Operation Anaconda* was also based on faulty conclusions regarding the enemy's strength and its will to fight. In fact, as the intelligence and operations staffs wargamed the operation, they assumed that the enemy would flee into the mountains.

In addition to the faulty assumptions concerning the enemy, Naylor clearly articulates other flaws in the plan. Most significant was the lack of a strong fire support element to support Hagenbeck's troops on the ground. In a decision attributed to the highest levels of leadership at U.S. Central Command (CENTCOM), ostensibly for political reasons, artillery was not deployed in support of *Operation Anaconda*. Instead, troops on the ground had to rely on Apache helicopters and organic mortars for close air and fire support. While these proved effective, they were simply not enough. However, Naylor's account of the Apache's battle capabilities and the dedication and skill of the mortar troops is inspiring.

In its concept, *Operation Anaconda* was intended as a microcosm of joint operations, a beautiful dance of ground forces, special operators and air power. What the planning process produced was an operation built on a series of compromises that lacked the key elements for success. With the clarity of hindsight, however, the reader can discern why this came about. Higher headquarters, CENTCOM in particular, was becoming preoccupied by the approaching invasion of Iraq.

Having been present at rehearsals for the operation and for some of the actual combat, Naylor's reporting of the battles — written with a journalist's penchant for fact and a storyteller's flair for color — is riveting. His account of the action on Takur Ghar and Hell's Halfpipe will rank among the best combat stories ever written. *Not a Good Day to Die* is a must read for all Soldiers, Marines, Airmen and anyone who wants a glimpse into what the fight will be like in the GWOT.

Contracting Community Highlights



In *Army AL&T Magazine's* "Contracting Community Highlights" section, each feature article is intended to provide in-depth information relative to a contracting organization, mission or process. This issue's feature article, "Donation Drive for Hurricane Katrina Victims," highlights the humanitarian efforts of the Army Contracting Agency-Information Technology, E-Commerce and Commercial Contracting Center (ITEC4), in spearheading a donation drive to assist evacuated residents of the Gulfport, MS, Armed Forces Retirement Home. A supplemental article from ITEC4 provides descriptions of multiple contracts awarded in support of Hurricane Katrina rescue and relief efforts.

In addition to the feature, we provide news from a number of our contracting organizations, including success stories and awards provided to individuals for exemplary work performance and various contracting achievements. This issue, our regular "DAR Council Corner" presents a *Federal Acquisition Regulation (FAR)* proposed rule to simplify government property regulations.

We appreciate support from the field in providing material for publication, and we hope you find the submissions informative and interesting.

Tina Ballard

Deputy Assistant Secretary of the Army
(Policy and Procurement)

Donation Drive for Hurricane Katrina Victims

The Army Contracting Agency-Information Technology, E-Commerce and Commercial Contracting Center (ACA-ITEC4), wanting to help those impacted by Hurricane Katrina, spearheaded a donation drive to assist evacuated residents

of the Gulfport, MS, Armed Forces Retirement Home. More than 400 military retirees, spouses and widows/widowers of military retirees spent 14 hours on a caravan of buses, forced to flee their Gulf-front campus for the safety of their sister location in Northwest Washington, DC.

The Armed Forces Retirement Home has a distinguished reputation for providing affordable and comfortable retirement living to America's heroes.

The facilities provide a continuum of care, including outpatient dental and medical services, hospital and long-term nursing care, three meals a day, private rooms and recreational facilities. The Armed Forces Retirement Home provides retired enlisted men and women a caring and secure home in their twilight years.

Hurricane Katrina decimated the Gulfport campus, leaving the veterans homeless. The Gulfport veterans rode out the hurricane in their eleven-story high-rise home with windows breaking, glass flying and water entering the building's lower levels. As the storm subsided, it became clear that no one could remain on the Gulfport campus without running water or electricity. The Gulfport campus structures suffered substantial damage, which will cost millions of dollars and up to two years to repair. It is unknown if or when the Gulfport evacuees will be able to return to their once-beautiful home.

The Gulfport evacuees arrived in Washington with only those personal items they could salvage from their damaged

rooms. The Washington campus sent out a call for assistance and published a "wish list" of needed items. During a three-week period, ITEC4 personnel donated and collected

essential items. On Sept. 8 and Sept. 22, 2005, three SUVs were loaded with donations headed for Washington in hopes of making the displaced veterans more comfortable.

The veterans were elated to receive gifts including a microwave, postage stamps, clock radios, end tables, lamps, light bulbs,

socks, shower curtains, shower mats, towels, pens, stationery, personal toiletry items, flashlights, ironing boards, a television, periodicals, individual crafted gift baskets, five walkers, a tripod cane, jackets, shoes, underclothes, slacks, shirts, housecoats, slippers, robes, pajamas and many other items. It was rewarding to see these seniors smile and joke again after such a harrowing experience.



From left to right: Bob Rutherford (Gulfport), Angela Harris (ITEC4), Jackie Robinson-Burnette (ITEC4), Robin Baldwin (ITEC4), John Wilson, Don Welch (Gulfport), Emilce Hessler (ITEC4), Bill Spencer (Gulfport), Mimi Rivkin (Washington Volunteer Coordinator), Jessica Williams (ITEC4), Edward Coe Sr. (Gulfport) and Tanya Edwards. (Photo by Brenton Barefoot, Contract Specialist, ACA-ITEC4, Acquisition Support Branch.)

News From the Field

JCC-I/A Change of Command Ceremony. The Joint Contracting Command-Iraq/Afghanistan (JCC-I/A) conducted its first change of command ceremony Feb. 2, 2006. Outgoing commander MG John M. Urias has led the JCC-I/A since its inception Jan. 29, 2005. Urias is departing Iraq for Huntsville, AL, where he plans to retire from active duty and join civilian industry. MG Darryl A. Scott, the recently departed Defense Contract Management Agency Director, is the new commanding general (CG). JCC-I/A is responsible for contracting efforts in Iraq and Afghanistan, supporting both Coalition Forces and reconstruction requirements. More recently, the command has taken on a new role assisting in the mentoring of contracting personnel in the Iraqi and Afghan Ministries of Defense and the Interior. To facilitate the process, they have embedded U.S. military acquisition professionals in each of these ministries. JCC-I/A has had an extremely successful first year and the command is



From left to right: ITEC4's Brenton Barefoot, Angela Harris and Emilce Hessler pose for a picture with Sallie Blythe, who was misplaced from the Gulfport Armed Forces Retirement Home after Hurricane Katrina. (Photo by Robin Baldwin, Division Chief, ACA-ITEC4, Acquisition Support Branch.)



MG Darryl A. Scott (left) stands ready as Multi-National Force-Iraq CG GEN George W. Casey Jr. accepts the command flag from MG John M. Urias during the JCC-I/A Change of Command Ceremony in Baghdad, Iraq. (U.S. Army photo by LTC Gordon Rawlinson, JCC-I/A, J3 Operations Officer.)

looking forward to building upon those successes with their new CG.

President Bush Visits Fort Bragg, NC. President George W. Bush visited Fort Bragg, June 28, 2005, and addressed the Nation before 700 Soldiers, Airmen and families at the Ritz-Epps Physical Fitness Center. President Bush discussed the progress of the war in Iraq and the global war on terrorism. The Army Contracting Agency-Southern Region (ACA-SR), Fort Bragg Directorate of Contracting (DOC) provided exceptional support for this presidential visit and ensured that numerous critical and time-sensitive actions were completed. MG Virgil Packett II, XVIII Airborne Corps Acting Commander, later recognized DOC employees Denese Kushinsky, Lonnie Robinson, Darlene Urquhart, Deborah Word, Dal Boyd and Sharon Carter for their outstanding professionalism, attention to detail and teamwork in successfully executing the event.

Javits-Wagner-O'Day (JWOD) Champion Selected. Recognizing her exceptional efforts in administering several NISH (formerly National Industries for the Severely Handicapped) contracts, the NISH South Region Office selected Fort Bragg DOC Contract Specialist Dale Boyd as a JWOD Champion. In honor of her selection as a JWOD Champion, NISH National published an article highlighting Boyd's efforts pertaining to the JWOD program in the September 2005 issue of *The Workplace* magazine.

Lucinda Nance Recognized for Work on CARE. Lucinda Nance, the Level 4 Agency/Organization Program Coordinator for Fort Bragg's purchase card program, was presented with a certificate and gift for her work with the DOD Committee for the Next Generation of CARE (Customer Automated Reporting Environment) at the Seventh Annual General Services Administration Conference in Boston, MA, Aug. 30-Sept. 1, 2005. Nance was selected to represent the Army and ACA-SR

on this committee because of her vast knowledge and experience with CARE. Access On-Line, the next generation of CARE, is scheduled to be implemented at Fort Bragg this year.

ACA-SR Facilitates Small Business Procurement Conference. The ACA-SR Fort Campbell, KY, DOC helped facilitate a Small Business Procurement Conference Aug. 9, 2005. The conference was presented in cooperation with the Fort Campbell community, Murray State University Small Business Development Center, the Tennessee Valley Authority, the U.S. Small Business Administration, the Kentucky Procurement Assistance Program, the Kentucky Cabinet for Economic Development, DOD and the U.S. Defense Logistics Agency. Approximately 200 vendors and government agencies were represented. Congressman Ed Whitfield provided opening comments. Fort Campbell Garrison Commander COL Larry Ruggley emphasized the business community's importance to the installation. Steve Sullivan, ACA-SR HQ, the luncheon's keynote speaker, provided an ACA overview and key requirements for conducting business with the government. The Directorate of Public Works and U.S. Army Corps of Engineers presented a special forum to discuss modularity and its impact to Fort Campbell.

Throughout the day, panels of representatives from various agencies explained how purchases of commodities, services and construction are made and how vendors can find government business opportunities. A panel of prime government contractors also discussed potential subcontracting opportunities.

ACA-ITEC4 Contracting Officer Wins Logistics Specialty Award. Gloria McGee, ACA-Information Technology, E-Commerce and Commercial Contracting Center (ITEC4) Contracting Officer, received the 2005 Logistics Specialty Award for Contract Management from U.S. Coast Guard (USCG) RADM Dale G. Gabel, Oct. 26, 2005. McGee established 26 multivendor blanket purchase agreements for DOD and the USCG to purchase the evolving passive radio frequency identification (RFID) to enable supply chain visibility and management for the warfighter. As a direct result of her accomplishments, Product Manager Joint-Automatic Identification Technology was able to implement the DOD RFID policy to provide commanders and logisticians with in-transit visibility and accountability for the movement of supplies in CONUS and in worldwide areas of responsibility in support of the warfighter.

Wartime Aircraft Replacement Contract Awarded. Program Manager (PM) Apache was notified June 2, 2005, that FY05 Supplemental funds had been approved for the acquisition of 13 aircraft to replace those lost through attrition. An

integrated product team was formed immediately, including personnel from U.S. Army Aviation and Missile Command (AMCOM) Acquisition, PM Apache, Defense Contract Audit Agency Mesa, Defense Contract Management Agency Mesa and Boeing Mesa. AMCOM contracting representatives included Contracting Officer Becky Shockley and Contract Specialist James Bailey. The Request for Proposal was issued June 10, 2005, and award was made Sept. 23, 2005.

ACH Production Contracts Awarded. The Natick, MA, Contracting Division has completed the Advanced Combat Helmet (ACH) program's contracting phase, awarding three Indefinite Delivery, Indefinite Quantity contracts for a combined initial delivery of 360,000 helmets. The ACH combines lighter-weight materials with improved ballistic protection and will replace the familiar Personnel Armor System, Ground Troops helmet as the standard Army combat head protection. The ACH will be compatible with all Soldier individual techniques and individual equipment, as well as be durable enough to withstand foreseeable use and misuse in diverse military operational environments. This program, with a potential value of more than \$200 million, will provide up to 880,000 helmets throughout the 5-year performance period. Through extensive negotiations, the Natick Contracting Division was able to achieve a unit price reduction of up to 32 percent from the original General Services Administration schedule pricing. This equates to more than \$17.5 million in cost savings for this contract alone. The successful offerors include Specialty Defense, Dunmore, PA; Mine Safety Appliances, Murrysville, PA; and Gentex Corp., Carbon-dale, PA. Three concurrent production contracts will ensure an adequate industrial base for this critical Soldier support equipment item.

DAR Council Corner

FAR Proposed Rule Simplifies Government Property Regulations

The *Federal Acquisition Regulation (FAR)* proposed rule 2004-025 to significantly revise *FAR* Part 45, which addresses contractor requirements for managing government property, was published Sept. 19, 2005. Public comments were due Nov. 19, 2005.

This proposed rule simplifies procedures, clarifies language and eliminates obsolete requirements related to contractors managing and disposing of government property. Various *FAR* parts are

amended to implement a policy that fosters efficiency, flexibility, innovation and creativity, while continuing to protect the government's interest in the public's property. The proposed rule specifically impacts contracting officers, property administrators and contractors responsible for managing government property.

The new language reflects a life-cycle, performance-based approach to property management and permits the adoption of more typically commercial business practices. The proposed rule requires contracting officers (KOs), property administrators and other personnel involved in awarding or administering contracts with government property to be aware of industry-leading practices and standards for managing that property.

Other associated impacts include:

- Stricter policy for determining whether to provide property to contractors.
- Possible KO revocation of the government's assumption of risk when the property administrator determines that the contractor's property management practices are inadequate and/or present an undue risk to the government.
- An outcome-based framework for managing property in contractor possession.
- Contractor identification of the standard or practice proposed for managing government property.

To review the proposed rule, see the *Federal Register* for Sept. 19, 2005, Pages 54878-54889.

Defense Federal Acquisition Regulation Supplement (DFARS) **— *Government Property Reports***

In *DFARS 2005-D015*, DOD is proposing to amend the *DFARS* to revise DOD-contractor reporting requirements for government property. DOD contractors maintain DOD's official property records for property in their possession per the terms of their contracts. However, DOD contractors are currently only required to report summary-level totals for each of the various types of government property. The proposed rule requires DOD contractors to report more detailed information that DOD needs to improve the accountability and control of DOD property in contractor possession. The rule also adds requirements for DOD contractors to maintain records in DOD real-property inventory systems for all real property provided under DOD contracts. Keep watch for publication of this proposed rule.

This information is provided by Army DAR Policy Member Barbara Binney, (703) 604-7113.

United States Postal Service
Statement of Ownership, Management, and Circulation

1. Publication Title: Army AL&T Magazine

2. Publication Number: 0 8 8 2 - 9 8 9 7

3. Filing Date: Oct. 17, 2006

4. Issue Frequency: Monthly

5. Annual Subscription Price: \$21.00 domestic; \$28.00 foreign

6. Complete Mailing Address of known Office of Publication (Do not print street, city, county, state, and ZIP+4):
 DEPARTMENT OF THE ARMY, ARMY AL&T, 980 BELVOIR RD SUITE 101
 FORT BELVOIR, VA 22060

7. Complete Mailing Address of Headquarters or General Business Office of Publisher (Do not print street, city, county, state, and ZIP+4):
 DEPARTMENT OF THE ARMY, ARMY AL&T, 980 BELVOIR RD SUITE 101
 FORT BELVOIR, VA 22060

8. Complete Mailing Address of Publisher (Do not print street, city, county, state, and ZIP+4):
 ACQUISITION SUPPORT CENTER, 980 BELVOIR RD SUITE 101
 FORT BELVOIR, VA 22060

9. Full Name and Complete Mailing Address of Publisher, Editor, or Managing Editor (Do not leave blank):
 MICHAEL L. RODDIN, EDITOR-IN-CHIEF, DEPARTMENT OF THE ARMY, ARMY AL&T, 980 BELVOIR RD SUITE 101
 FORT BELVOIR, VA 22060

10. Owner (Do not leave blank. If the publication is owned by a corporation, give the name and address of the corporation immediately followed by the names and addresses of all stockholders owning or holding 1 percent or more of the total amount of stock. If not owned by a corporation, give the names and addresses of the individual owners. If owned by a partnership or other unincorporated firm, give its name and address as well as those of each individual owner. If the publication is published by a foreign corporation, give its name and address.)

11. Full Name and Complete Mailing Address of Office of Publication (Do not leave blank):
 OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY FOR ACQUISITION LOGISTICS AND TECHNOLOGY
 WASHINGTON, DC 20315-6102

12. Known Circulation, Subscriptions, and Other Security-Related Circulation (Do not print street, city, county, state, and ZIP+4):
 Full Name: N/A
 Complete Mailing Address: N/A

13. See Statement of Ownership, Management, and Circulation for instructions on how to complete this section.

14. See Statement of Ownership, Management, and Circulation for instructions on how to complete this section.

15. See Statement of Ownership, Management, and Circulation for instructions on how to complete this section.

PS Form 3526, October 1999 (See instructions on reverse)

16. Publication Title: Army AL&T Magazine

17. Issue Date for Circulation Data Below: Oct. 17, 2006

18. Extent and Nature of Circulation

18. Extent and Nature of Circulation		Average No. Copies Each Week During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a. Total Number of Copies (Net press run)		34,714	40,000
b. Paid and Unpaid Distribution (Sum of 19, 20, 21, 22, 23, and 24)		349	249
c. Total Paid and Unpaid Distribution (Sum of 19, 20, 21, 22, 23, and 24)		349	249
d. Total Paid and Unpaid Distribution (Sum of 19, 20, 21, 22, 23, and 24)		34,365	39,751
e. Total Paid and Unpaid Distribution (Sum of 19, 20, 21, 22, 23, and 24)		34,365	39,751
f. Total Paid and Unpaid Distribution (Sum of 19, 20, 21, 22, 23, and 24)		34,714	40,000
g. Total Paid and Unpaid Distribution (Sum of 19, 20, 21, 22, 23, and 24)		7	8

19. Publication of Statement of Ownership: Publication required; Publication not required

20. Signature and Title of Editor, Publisher, Business Manager, or Owner: MICHAEL L. RODDIN, EDITOR-IN-CHIEF

21. Date: 17 OCT 06

22. Instructions to Publishers

- Complete and file one copy of this form with your publication annually on or before October 1. Keep a copy of the completed form for your records.
- In cases where the distributor or security holder is a trustee, include in items 10 and 11 the name of the person or corporation to whom the trustee is acting. Also include the names and addresses of individuals who own or hold 1 percent or more of the total amount of bonds, mortgages, or other securities of the publishing corporation. In item 11, if none, check the "N/A" and check space if more space is required.
- We urge you to furnish all circulation information called for in item 15. Free circulation must be shown in items 15b, c, and d.
- Item 15b, Copies not Distributed, must include (1) reprints originally issued on Form 3526, and returned to the publisher; (2) estimated returns from news agents; and (3) copies for office use, libraries, schools, and all other sources not distributed.
- If the publication has Periodicals authorization as a general or requester publication, this Statement of Ownership, Management, and Circulation must be submitted. It must be printed in every issue in October or if the publication is not published during October, the first issue printed after October.
- Item 16, Indicate the date of the issue in which this Statement of Ownership will be published.
- Item 17 must be signed.

Failure to file or publish a statement of ownership may lead to suspension of Periodicals authorization.

PS Form 3526, October 1999 (Rev. 05/02)

Enabling Smart Business Decisions

Office of the Undersecretary of Defense for Acquisition, Technology & Logistics (OUSD (AT&L)) Annual Business Managers' Conference

May 9-10, 2006

The Business Managers' Conference is an annual meeting for senior DOD acquisition and comptroller executives, program executive officers, project managers, systems commands, business managers and service headquarters program and business staff. It provides a forum for wide-ranging discussions and presentations on current acquisition and business initiatives. OUSD (AT&L) sponsors the conference in cooperation with the Business, Cost Estimating and Financial Management Functional Advisor.

Keynote Speaker: Ken Krieg, OUSD (AT&L)

Host: Defense Acquisition University, Fort Belvoir, VA

Registration Opens: On or about March 29, 2006

For more information, contact Joni Forman at joni.forman@dau.mil, (703) 805-5308 or bmc@dau.mil.

Information on previous Business Managers' Conferences may be found at <http://www.dau.mil/conferences/Conferences.asp>.



Army AL&T Magazine Subscriber Distribution Changes

Much like the Army in general, the U.S. Army Acquisition Support Center (ASC) has been challenged to continue to find cost and production efficiencies. We have, therefore, examined our magazine production costs and determined there are several ways to reduce overall printing and postage expenditures to maximize sound cost-avoidance strategies and streamline production processes. One such effort involves transitioning *Army AL&T Magazine* from bimonthly to quarterly publication. Another magazine-related cost-saving effort involves eliminating our individual subscriber database and moving to unit- and organization-only distribution via the Army Publishing Directorate (APD).

Quarterly Publication

Army AL&T Magazine will now be published January-March, April-June, July-September and October-December. We will be revising our Writers Guidelines soon, but in the meantime a tentative deadline schedule for article submission is as follows:

Issue	Author's Deadline
January-March	1 November
April-June	1 February
July-September	1 May
October-December	1 August

Subscriptions and Distribution

Effective immediately, all Army acquisition commands, units or organizations wishing to receive *Army AL&T Magazine* will need to set up an account with APD and submit a *DA Form 12-R*. For your reference, *Army AL&T Magazine's* Identification Number (IDN) is 050035 and the PIN is 077928.

Each unit should order no more than 1 magazine per 10 assigned personnel. The directive governing the *DA Form 12-R* is *DA PAM 25-33*. Both of these can be downloaded or browsed from APD's Web site at <http://www.apd.army.mil>. Your unit's publications noncommissioned officer or your installation's Directorate of Information Management can help you through this process. You can then fax the *DA Form 12-R* to (314) 592-0920 or DSN 892-0920, ATTN: Account Processing. For more detailed information, call an APD Account Processing Team member at (314) 592-0910 or DSN 892-0910.

Individuals who still wish to have personal magazine copies may order paid subscriptions of *Army AL&T Magazine* through the Government Printing Office. The annual subscription rate is \$21. To order, go to <http://bookstore.gpo.gov>, type *Army AL&T Magazine* into the search engine, scroll down until you see the magazine listed and follow the ordering instructions.

We ask that you bear with us through this transformation period. Our intent is to continue to provide Army Acquisition Corps professionals — and the Army at large — with salient educational articles, news and career information in the acquisition, logistics and technology (AL&T) arena. We believe these changes will provide the same level of quality subject matter in a more timely fashion to all of our readers. We will be publishing more content as well as time-sensitive news and information on the ASC Web site at <http://asc.army.mil/pubs/alt/default.cfm>. Visit the ASC Web site frequently for the latest AL&T news and information. As always, we welcome any and all feedback. Please e-mail your comments or questions to us at LetterToEditor@asc.belvoir.army.mil.

ARMY ACQUISITION, LOGISTICS & TECHNOLOGY
ISSN 0892-8657

DEPARTMENT OF THE ARMY
ARMY AL&T
9900 BELVOIR RD SUITE 101
FT BELVOIR, VA 22060-5567

<http://asc.army.mil>

In This Issue

- **Interview With GEN Benjamin S. Griffin, U.S. Army Materiel Command**
- **Interview With MG John M. Urias, Joint Contracting Command-Iraq/Afghanistan**
- **Army Medical Research**

* See Inside Back Cover for Important Production and Distribution Changes



ASC ACQUISITION SUPPORT CENTER

PREPARING FOR THE FUTURE