

# ARMY AL&T

April - June 2009



## Spotlight on DASA(DE&C) Programs



UNITED STATES ARMY  
**USAASC**  
ACQUISITION SUPPORT CENTER

## From the Army Acquisition Executive

# International Cooperation



International security cooperation has an important role in fostering and promoting cooperation to meet global challenges. Strong alliances among nations promote shared values, strategic solidarity, and successful military and security operations worldwide. International cooperation significantly improves interoperability for coalition warfare, leverages limited program resources, and obtains the most advanced, state-of-the-art technologies for weapon systems and equipment from the global technology and industrial base. The benefits of cooperation among friendly nations are significant.

These benefits are first *operational* — to increase military effectiveness through interoperability with allies and coalition partners; second *economic* — to reduce weapons acquisition costs by sharing costs or avoiding duplication of development efforts with our allies and friends; third *technical* — to access the best defense technology and help minimize the capabilities gap with allies and coalition partners; fourth *political* — to strengthen alliances and relationships with friendly countries; and fifth *industrial* — to bolster domestic and allied defense industrial bases.

Since the end of the Cold War, the U.S. has recognized that international cooperation offers new and broader opportunities for promoting our interests and increasing efficiencies. As emphasized in the *Department of Defense 5000* series policies for defense acquisition systems, the leveraging of domestic resources through cost-sharing and economies of scale afforded by international cooperative research, development, production, and logistics support programs should be fully considered during preparation of the technology development strategy and subsequent acquisition strategy. International security cooperation is an integral part of the Army acquisition community.

With programs that exceed \$31 billion in sales and cooperative efforts in more than 140 countries, our organization — through the office of the Deputy Assistant Secretary of the Army for Defense Exports and Cooperation — oversees all matters involving security assistance, export policies, and direct commercial sales of Army defense items, including international cooperative research, development, and acquisition agreements. Our goal is to build partnerships, enhance interoperability among our armed forces, and facilitate lasting relationships to protect vital interests of the United States while promoting security, stability, and trust throughout the world.

This issue of *Army AL&T Magazine* focuses on the many agencies that work together to enhance international security cooperation, reduce risk in weapon systems development and acquisition, improve interoperability of fielded systems, foster educational and training opportunities, and expand international activities. Please keep in mind that effective alliances require constant and constructive dialogue to remain vital and relevant.

It is well recognized that the largest and best known international program is the Foreign Military Sales program with government-to-government purchases of weapons and other defense articles, defense services, and military training. This program is designed to promote the sales of domestic-produced defense items, and the Army is at the forefront of these efforts. In this issue, you will read about the sale of Excalibur munitions to Canada for operations support in Afghanistan, as well as Javelin's multinational use coupled with a forum where users meet to discuss issues and product updates. You will also gain insight into the development of the Army's international strategy for key programs, such as the Future Combat Systems (Brigade Combat Team) and the Joint Light Tactical Vehicle.

Over the past 4 years, the North Atlantic Treaty Organization and U.S. bilateral alliances with Australia, Japan, Korea, and other nations have worked tirelessly to maintain their vitality and relevance in the face of new threats to our international security environment. System interoperability is often singled out as paramount to meeting global challenges.

This issue illustrates that international security cooperation remains one of our most important instruments of defense and foreign policy. Our global missions benefit greatly from these efforts. Indeed, our priority missions, such as current operations in Afghanistan and Iraq, can only be accomplished successfully with the help of friends and allies.

It is my sincere hope that, as you read this issue, you will gain added insight and appreciation for the work done in the international community and an increased knowledge that will help you identify future international opportunities to assist in your work.

**Dean G. Popps**  
Army Acquisition Executive



# ARMY AL&T

April - June 2009

# ACQUISITION, LOGISTICS & TECHNOLOGY

PB 70-09-02

**DEAN G. POPPS**

Acting Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT) and Army Acquisition Executive

**EDITORIAL BOARD**

- LTJ JACK C. STULTZ**  
Chief, U.S. Army Reserve/Commanding General (CG), U.S. Army Reserve Command
- LTJ N. ROSS THOMPSON III**  
Director, Army Acquisition Corps and Director, Acquisition Career Management
- LTJ STEPHEN M. SPEAKES**  
Deputy Chief of Staff (DCS), G-8
- LTJ JEFFREY A. SORENSON**  
Chief Information Officer, G-6
- LTJ JAMES H. PILLSBURY**  
Deputy CG, U.S. Army Materiel Command
- MG GEORGE W. WEIGHTMAN**  
CG, U.S. Army Medical Research and Materiel Command
- DR. JAMES R. HOUSTON**  
Director of Research and Development, U.S. Army Corps of Engineers
- WIMPY PYBUS**  
Deputy Assistant Secretary (DAS) for Acquisition Policy and Logistics, Office of the ASAALT (OASAALT)
- KARL F. SCHNEIDER**  
Assistant DCS, G-1
- DR. THOMAS H. KILLION**  
DAS for Research and Technology, OASAALT
- THOMAS E. MULLINS**  
DAS for Plans, Programs, and Resources, OASAALT
- MARK D. ROCKE**  
DAS for Strategic Communications and Business Transformation, OASAALT
- EDWARD M. HARRINGTON**  
DAS for Procurement, OASAALT
- CRAIG A. SPISAK**  
Director, U.S. Army Acquisition Support Center
- BEN ENNIS**  
Executive Secretary, Editorial Board

**EDITORIAL STAFF**

- CYNTHIA D. HERMES**  
Editor-in-Chief
- ROBERT E. COULTAS**  
Departments Editor
- KELLYN D. RITTER**  
Editor
- JACLYN PITTS**  
Editor
- CHRISTINA SNEED**  
Layout and Graphic Design

**To contact the Editorial Office:**  
Call (703) 805-1034/1038 or DSN 655-1034/1038  
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: [USAASCWEB-Ar@conus.army.mil](mailto:USAASCWEB-Ar@conus.army.mil) or [USAASCWEBArmyALTMagazineLettertoEditor@conus.army.mil](mailto:USAASCWEBArmyALTMagazineLettertoEditor@conus.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. Articles may be reprinted if credit is given to Army AL&T Magazine and the author.

## Cover Story



**Army International Programs: A Win-Win for the U.S. and Our Allies**

Keith Webster, Christopher J. Mewett, and David Diamond

Page 2

## Features



**Foreign Military Sales (FMS) Program Helps Iraq Transition to Security Self-Reliance**

BG Michael J. Terry

Page 6

**Setting Acquisition, Logistics, and Technology Conditions for Afghanistan**

Ben Ennis

Page 42



- International Considerations for Army Acquisition** ..... 11  
David Dopp, LTC Wolfgang Petermann, and LTC Ben Garza, USMC
- Precision Acquisitions — Sharing the Lessons of Excalibur** ..... 16  
LTC Joseph S. Minus Jr. and Lu Ting
- Javelin Weapon System: International Participation — Past, Present, and Future** ..... 20  
John “Kyle” Perkins
- FCS Multinational Network Interoperability Experimentation — Tactical Coalition Interoperability Concepts and Solutions** ..... 24  
MAJ Troy Crosby, Charlene Deakyn, Gerardo Di Dio, and Scott Schnorrenberg
- U.S. Army Research, Development, and Engineering Command’s Armament Research, Development, and Engineering Center (RDECOM-ARDEC) — Leveraging Foreign Technologies** ..... 28  
Lu Ting
- Army Foreign Comparative Testing (FCT) Program** ..... 34  
Karen M. Wilson
- An International Acquisition Career Path** ..... 38  
D.T. Tripp and Roy Wood
- The 26th Army Science Conference: Transformational Army Science and Technology (S&T) — Harnessing Disruptive S&T for the Soldier** ..... 54  
Dr. John A. Parmentola and Irena D. Szkrybalo
- Using Multibody Dynamics Models to Determine Ballasting of Stryker Vehicles to Support Physical Testing** ..... 58  
Dorothy Foley and Lane D. Salins

## Departments

- Career Development Update** ..... 60
- Contracting Community Highlights** ..... 68

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

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

By order of the Secretary of the Army  
**GEORGE W. CASEY JR.**  
General  
United States Army  
Chief of Staff

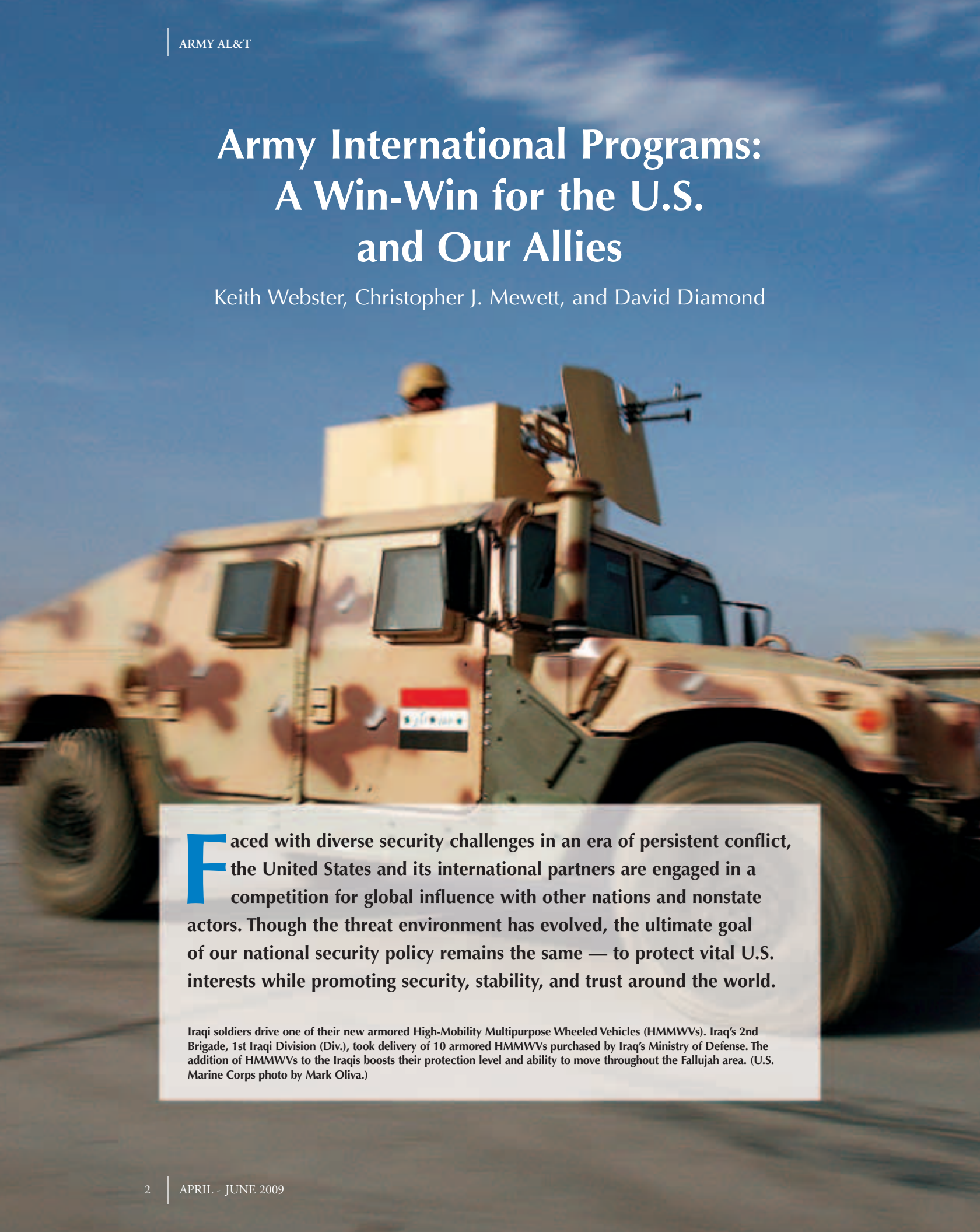
Official:  
*Joyce E. Morrow*  
**JOYCE E. MORROW**  
Administrative Assistant to the Secretary of the Army  
0906902

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.

# Army International Programs: A Win-Win for the U.S. and Our Allies

Keith Webster, Christopher J. Mewett, and David Diamond



**F**aced with diverse security challenges in an era of persistent conflict, the United States and its international partners are engaged in a competition for global influence with other nations and nonstate actors. Though the threat environment has evolved, the ultimate goal of our national security policy remains the same — to protect vital U.S. interests while promoting security, stability, and trust around the world.

Iraqi soldiers drive one of their new armored High-Mobility Multipurpose Wheeled Vehicles (HMMWVs). Iraq's 2nd Brigade, 1st Iraqi Division (Div.), took delivery of 10 armored HMMWVs purchased by Iraq's Ministry of Defense. The addition of HMMWVs to the Iraqis boosts their protection level and ability to move throughout the Fallujah area. (U.S. Marine Corps photo by Mark Oliva.)

Activities that shape the complex security environment have become an integral part of the campaign continuum. Such shaping efforts include a range of international programs that develop allied and friendly military capabilities for self-defense and coalition operations, improve information exchange, and provide U.S. forces with peacetime and contingency access and infrastructure. The Army sets security cooperation objectives — enhancing U.S. and partner interoperability, building partner capacity, and expanding relationships with partners old and new — to ensure that our forces are prepared to operate globally and in concert with our friends and allies, while allowing partner countries to meet many security challenges independently.

International engagement and interoperability requirements will have greater influence in the development and acquisition of new weapon systems and materiel for U.S. Soldiers. Traditional Army acquisitions focused on finding domestic technologies and solutions that typically met our needs. While domestic solutions will continue to dominate our acquisition strategies, international security cooperation and associated solutions will play an increasingly larger role in our efforts to rapidly field solutions for the Current Force while finding cost-effective solutions to grow our Future Force. Engagement with foreign research centers and governments can help Army laboratories and acquisition authorities identify gaps in technology and systems and address those gaps in a timely, cost-effective manner. Furthermore, we will leverage international investments in our systems to develop the next-generation solutions, and we will leverage international sales to fill our production gaps while reducing our per-unit costs.



Keith Webster, DASA(DE&C) and SNR(A), and BG Hakan Espmark, his Swedish counterpart, jointly sign the minutes from the 2008 U.S.-Sweden SNR(A) Meeting. (Photo by David Garner.)

The Army's security assistance and armaments cooperation programs are the responsibility of the Office of the Deputy Assistant Secretary of the Army for Defense Exports and Cooperation (DASA(DE&C)). That organization also develops foreign disclosure policy for Army weapon systems and directs the service's review of export license cases. The DASA for Research and Technology (R&T), U.S. Army Corps of Engineers, U.S. Army Training and Doctrine Command (TRADOC), and U.S. Army Materiel Command (AMC) and its components — specifically the U.S. Army Research, Development, and Engineering Command (RDECOM) and U.S. Army Security Assistance Command (USASAC) — also play important parts in facilitating the Army's security cooperation programs.

### Foreign Military Sales (FMS)

Perhaps the most visible way the Army engages with its international partners is through the security assistance program, or FMS. Foreign partners solicit the purchase of U.S. systems to improve their own warfighting capabilities and enhance interoperability with U.S. and coalition forces. DASA(DE&C) oversees the policy and resources for the FMS program, acting as the liaison between foreign

governments and U.S. contractors to facilitate the rapid transfer of defense equipment to allies and partner nations. USASAC manages the execution of the security assistance mission, calling on all AMC life cycle management commands and TRADOC, as well as other DOD agencies and U.S. industry, for support. USASAC is responsible for managing FMS cases from development to execution, financial management, accounting, and closure. The sale of equipment to an overseas customer often entails the same "total package" of materiel, spare parts, training, publications, technical documentation, maintenance support, and other services AMC would provide a procuring U.S. Army unit.

The Canadian government's purchase of Excalibur munitions to support forces operating in Afghanistan was a prominent success for the security assistance program. When Canada submitted a letter of request for Excalibur, the system had not completed initial operational test and evaluation or Army safety certification. Critical program information was not yet identified, the security classification guide and program protection plan — documents that govern the classification level and releasability of sensitive data — did not yet exist, and

no exportable version of the system had been developed. These conditions constituted a considerable barrier to meeting the Canadian government's request. However, close collaboration between DASA(DE&C) and the Excalibur program manager resulted in a workable solution.

Canadian personnel were allowed to participate in the limited user test and fire a number of training rounds within the United States. In theater, rounds were provided to Canadian forces from U.S. Army ammunition supply points. Canadian forces returned unexpended rounds to the United States for reimbursement or exchange for an exportable variant, effectively facilitating coalition operations while appropriately and securely bypassing foreign disclosure roadblocks. Through the Excalibur exchange, the U.S. Army was able to increase the capability and operational effectiveness of coalition forces, enhance interoperability with American units in a vital theater of conflict, and deepen our relationship with a key international partner.

### Armaments Cooperation

Armaments cooperation is another important component of the Army's international partnering activities. Cooperative research and technology development:

- Mitigates risk by providing access to multiple prototypes.
- Reduces developmental costs by sharing costs.
- Ensures that the best technologies are brought to the design stage.

Most of the Army's international cooperative research, development, and acquisition agreements, which help leverage foreign technologies in support of Future Force requirements,

are initiated by RDECOM's laboratories and research centers. RDECOM manages the nine Army international technology centers, arrayed across five continents, that facilitate Army access to foreign technologies and materiel solutions.

The exploration of promising technologies is supported — and partially funded — by DASA(R&T), which prioritizes focus areas for international science and technology cooperation efforts. DASA(DE&C) negotiates with foreign partners on behalf of the individual Army labs, centers, and program executive offices (PEOs), helping to ensure unity of effort and obtain cost and contractor work-share arrangements that are advantageous to both the Army and the domestic industrial base.

The U.S.-Australian Joint Light Tactical Vehicle (JLTV) program is one example of successful armaments cooperation. The efforts of both the United States and Australia have been vital to the development, fabrication, and testing of a robust fleet of JLTV prototypes. The Australian government funded the design of the vehicle's steering system

and weapons mount, as well as the fabrication and testing of nine otherwise unfunded prototypes. The JLTV program also took advantage of Australia's tropical environment for testing and ballistics assessments.

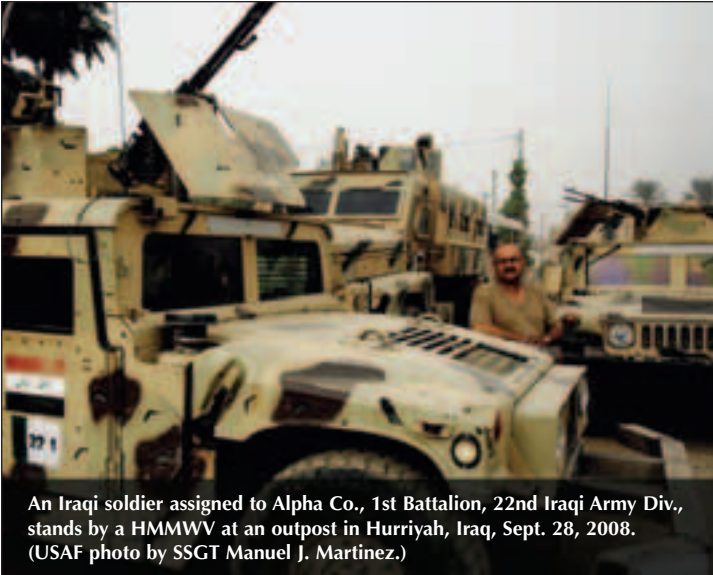
This collaboration dramatically lowered technical and program risk for U.S. acquisition authorities by making competitive prototyping possible and broadening the scope of testing. The U.S.-Australian coordination also paved the way for cost savings by identifying potential design flaws.

### Direct Commercial Sales (DCS)

The facilitation of U.S. weapon system transfer via DCS — a third crucial element of DASA(DE&C)'s international portfolio — allows U.S. contractors to market their products to overseas customers. Additional production from DCS creates economies of scale, lowers acquisition costs, and maintains a production line that allows product improvements without high startup costs. Co-production agreements with foreign parties also allow U.S. firms to compete for production contracts abroad that may not otherwise be accessible.



An Iraqi soldier assigned to 8th Division Iraqi Army scans his area of responsibility from the gun turret of his HMMWV in Afak, Iraq, Nov. 30, 2008, during a cordon and knock operation. (U.S. Air Force (USAF) photo by SrA Eric Harris.)



An Iraqi soldier assigned to Alpha Co., 1st Battalion, 22nd Iraqi Army Div., stands by a HMMWV at an outpost in Hurriyah, Iraq, Sept. 28, 2008. (USAF photo by SSGT Manuel J. Martinez.)

DASA(DE&C) develops export policies for Army weapon systems, determining what level of technical disclosure is appropriate to foreign end users. It also presents the service's perspective during the export license review process, which is conducted by the U.S. Department of State.

In some instances, the work of Army activities is essential to the successful export of U.S.-made products through DCS. In 2007, PEO Combat Support and Combat Service Support (CS&CSS) identified numerous export compliance obstacles to the hiring of indigenous labor by the U.S. Central Command. The stringent export restrictions mandated by the *International Traffic in Arms Regulations (ITAR)*, which govern the export of defense articles, disclosure of related technical data, and provision of defense services to foreign parties, were circumscribing the Army's ability to maintain its fleet of noncombat vehicles, equipment, and watercraft.

Through an administrative process known as a commodity jurisdiction, the State Department licensing authorities determine whether an article intended for export falls under the jurisdiction of the U.S. Munitions

commodity jurisdiction process. After reviewing those requests, the State Department's Directorate of Defense Trade Controls issued a ruling that removed the equipment from *ITAR* control and eased the administrative burdens placed on both the PEO and the equipment manufacturers. This streamlined export of the requested items and facilitated employment of indigenous personnel to operate and maintain the noncombat vehicles and equipment.

For each of the foregoing examples, front-end coordination and planning was essential to realizing the strategic benefits of the U.S. Army's international activities. Early communication streamlined an inherently complicated process, and systematic preparation identified foreign disclosure and export control roadblocks at an early stage. A comprehensive, forward-looking plan for international engagement will always yield a clearer understanding of the effect a security cooperation program will have on U.S. development costs and the production potential of our industrial base.

As the cost and complexity of military systems increase, it is incumbent on the acquisition apparatus to increase

List and, thus, is *ITAR*-controlled. If it is not, the item can be exported as a dual-use item under the more permissive *Export Administration Regulations*.

At the direction of DASA(DE&C), numerous items managed by PEO CS&CSS were subjected to the

the sophistication of its approach. With foresight and effective strategic planning, the U.S. Army can ensure that defense exports and international cooperative programs continue to help protect the U.S. industrial base, equip foreign partners in overseas contingency operations, leverage foreign technologies to meet U.S. requirements, and achieve the best value for the acquisition community and our warfighters.

**KEITH WEBSTER** is the DASA (DE&C). He is the Army principal responsible for all matters involving security assistance; export policies and oversight; DCS of Army defense articles; and international cooperative research, development, and acquisition. He is the designated Army Senior National Representative (SNR(A)) on all bi- and multilateral armaments cooperation with the Army's partners. Webster has a B.S. in business/finance from Towson State University and an M.A. in international relations from Catholic University, is Level III certified in logistics, and is a Fellow of the Center for International Studies, Massachusetts Institute of Technology.

**CHRISTOPHER J. MEWETT** is a support contractor in the strategic planning directorate of the DASA (DE&C) Office. He holds a B.A. in history from Texas A&M University and did graduate work in Central and Eastern European studies at the Jagiellonian University in Krakow, Poland.

**DAVID DIAMOND** is a Research Fellow at LMI, a nonprofit government consulting company in McLean, VA, that supports the DASA(DE&C). He has a B.S. and an M.S. in mechanical engineering from Rice University and a Ph.D. in public policy from George Mason University.

# Foreign Military Sales (FMS) Program Helps Iraq Transition to Security Self-Reliance

BG Michael J. Terry

**T**he U.S. Army Security Assistance Command (USASAC) is assisting the government of Iraq (GOI) as it builds security forces and moves Iraq toward self-reliance. A key element of that assistance is the sale of critical materiel and services through FMS. The FMS program is providing more than just units; it is building Iraq's capability. As a commander, a Soldier, and a U.S. citizen, few issues compare in importance to a well-equipped and trained Iraqi defense force capable of securing Iraq and allowing our Soldiers to return home.

An Iraqi gunner from the Iraqi Army's 5th Brigade, 6th Division, stands in the turret of an up-armored HMMWV during the brigade's operational environment transition of authority ceremony with the 4th Brigade Combat Team, 4th Infantry Division, at Forward Operating Base Honor. (U.S. Army photo by SPC Jason Dangel.)



By partnering with USASAC, the U.S. Army Materiel Command's (AMC's) proponent for FMS, the Iraq security ministries have made significant strides toward Iraq self-reliance. The Iraqi Ministry of Defense (MOD), Ministry of Interior (MOI), and Counter-Terrorism Bureau have fully embraced the U.S. FMS program as a major component of defense strategy.

### **The FMS Process**

In the 1960s, the U.S. FMS program replaced the earlier U.S. Grant Aid Program, known commonly as the

Military Assistance Program. FMS operated relatively unchanged from the end of the Vietnam War until Sept. 11, 2001. In the aftermath of 9/11, the program's mission changed dramatically as our military adapted to a wartime operational tempo, built coalition forces, and, eventually, outfitted new Iraqi defense and police forces.

By 2003, USASAC saw a surge in requirements to support coalition forces. The Army FMS community outfitted a complete multinational division with troops from 16 countries. USASAC, in

coordination with the entire Army security assistance community, provided uniforms, small arms, ammunition, communications gear, body armor, vehicles, and night vision equipment — all of which were obtained, delivered, and fielded in just 3 months. All requirements had one thing in common: they were urgent.

The peacetime FMS process was accelerated to meet demand. As the coalition expanded to more than 30 member nations, so did the Army's FMS support. This support ranged





Iraqi MAJ Ahmed, the General Transportation Regiment (GTR) Training Officer, talks about fuel handler training classes with BG Michael J. Lally, Commander, 3rd Sustainment Command (Expeditionary). The GTR is a new unit created by the Iraqi MOD for the purpose of transporting all classes of supplies throughout Iraq. (U.S. Army photo by SSG Bryant Maude.)

from providing weapons to individual Soldiers to procuring sophisticated support equipment.

Although the U.S. Army's sale of materiel to Iraq began with the purchase of equipment and services for the GOI and coalition nations using U.S. monies, the program has evolved to such a degree that equipment is now purchased by Iraq for its own MOD and MOI forces. By the middle of FY07, FMS purchases by Iraq equated to 70 percent of the U.S.

The Iraqi MOD, MOI, and Counter-Terrorism Bureau have fully embraced the U.S. FMS program as a major component of defense strategy.

Army sales to Iraq; purchases using the Iraqi Security Forces Fund (i.e., DOD funds) were down to 30 percent. In FY06, the MOD signed agreements for purchases totaling \$750 million, and the MOI agreed to purchases of \$169 million.

Today, sales to the Iraqi army are roughly \$3.5 billion (FY08), and that figure is expected to increase. U.S. Army FMS support has enabled Iraq security forces to expand in number, increase in quality, and establish effective organizational structures outfitted with modern U.S. equipment.

To develop and execute this capability, all requirements from the MOD and MOI are coordinated through the Multi-National Security Transition Command-Iraq (MNSTC-I). According to its official Web site, MNSTC-I was established in FY04 under the Multi-National Force-Iraq Command "to assist the Iraqi government in the organization, training, equipping, and sustainment of Iraqi security forces and ministries capable of defeating terrorism and providing a stable environment in which representative government, individual freedom, the rule of law, and the free market economy can evolve and which, in time, will contribute to Iraq's external security and the security of the Gulf region."

## Intensive Management Office (IMO)

USASAC, recognizing that expedited service is the reality for all Iraq requirements and the program value and number of cases would grow exponentially, established the IMO as the focus for Army FMS actions with MNSTC-I. The IMO Director, COL Dave Dornblaser, served in MNSTC-I as the USASAC liaison officer (LNO) before his current position with the IMO. His experience in Iraq has been immensely helpful because he can provide real-world insight into the needs of FMS customers in MNSTC-I and the GOI. "Our personnel are energized to look for innovative ways to ensure success," said Dornblaser. "They have the required sense of urgency and realize the importance of their efforts."

This focused effort by the IMO has yielded positive results. FMS case processing for Iraq averaged 62 days in FY08. This almost cut in half the standard case processing goal of 120 days established by the DOD security

assistance community. This is a truly extraordinary feat, considering the complexity of some cases.

The Army has applied innovative measures when executing the Iraq program. One example was the transfer of M1114 up-armored High-Mobility Multipurpose Wheeled Vehicles (HMMWVs) to the GOI. In December 2007, the Army determined that the most cost-effective way to rapidly equip the Iraqi security forces with armored maneuver capability was to repair and transfer displaced HMMWVs. As the U.S. ramped up production and fielding of Mine Resistant Ambush Protected vehicles in Iraq, the Army initiated a program to refurbish the HMMWVs to fully mission-capable-complete status for direct transfer to Iraqi forces.

This program satisfied an urgent Iraqi requirement and avoided a major retrograde and the expense of returning the vehicles to the U.S. As of October 2008, 4,244 HMMWVs had been transferred to MNSTC-I; 2,999 of those had been transferred to Iraq ownership. The remaining 4,256 vehicles (for a total of 8,500) will be refurbished upon completion of the original case.

U.S. Army FMS support has enabled Iraq security forces to expand in number, increase in quality, and establish effective organizational structures outfitted with modern U.S. equipment.

Most FMS case requests by the Iraq security ministries are allocated as either Iraq security force generation (Force-Gen) or Iraq security force modernization (ForceMod). Force-Gen requires rapid case response, acquisition, and delivery of basic items,

such as pickup trucks, security vehicles, rifles, side arms, uniforms, and tents. Sustainment planning is



The Army determined that the most cost-effective way to rapidly equip the Iraqi security forces with armored maneuver capability was to repair and transfer displaced HMMWVs. Here, HMMWVs await refurbishment. (U.S. Army photo by COL Fred Heaggans, Director of USASAC Forward.)



Iraqi MOD Jawad al-Bolani and MNSTC-I CG LTG Frank Helmick cut the ribbon at the opening of an Iraqi MOI weapon card/identification card facility. (MNSTC-I photo by William Lovelady.)

## Life-Cycle Management

USASAC ultimately has life-cycle management responsibility for all the Army FMS cases for materiel and services, from the time the requirement is identified through completion. The USASAC IMO is the conduit to the AMC Life Cycle Management Commands (LCMCs) that execute materiel acquisitions. The FMS program would not be successful without the direct link to the LCMCs' program managers and security assistance management directorates. The Deputy Assistant Secretary of the Army for Defense Exports and Cooperation (DASA (DE&C)), the Army organization that oversees the development, coordination, and implementation of Army security cooperation programs, has also been instrumental in expediting actions.

In Iraq, USASAC's LNOs Robinson and Josephine Polanco are embedded with MNSTC-I to provide the technical capability to quickly and effectively coordinate requirements with everyone in the process. They work with the IMO to enhance the Army's ability to initiate cases; obtain accurate price and availability data; and coordinate with the DASA(DE&C) to gain required security releases, policy, and technical clearances — all of which result in the delivery of quality FMS cases for GOI acceptance and implementation.

paramount for the eventual transfer of Iraq security to the GOI.

ForceMod is more heavily concentrated on weapon systems. Requirements are designed for future expansion capability through intense consultation among the Iraq security ministries, MNSTC-I, and the Army FMS program. Tanks, armed helicopters, tactical radio and communications systems, mortar systems, and other modern U.S. equipment will be vital to Iraq's self-sufficiency. According to COL Harvey Robinson, USASAC LNO, "The FMS equipment is part of the unit set fielding process. The process is building an entire Army brigade and giving Iraqi soldiers the equipment and training they need to fight."

Iraq's large-scale use of FMS to equip and train a fighting force benefits the U.S. national security policy. It creates long-term ties between our nations. U.S. products, services, and

weapon systems are the foundation for Iraq's reformed security forces. This becomes more important as the remainder of the original coalition partners withdraw and under the recently signed status of forces agreement between the United States and the GOI, signed Nov. 17, 2008, which reflects Iraq's capability to sustain its own security. Well into the future, the Army FMS community will remain tied to the Iraqi government as we continue to provide sustainment support for their forces.

**BG MICHAEL J. TERRY** is the USASAC Commanding General (CG). He was previously the CG, 13th Corps Support Command, later redesignated as the 13th Sustainment Command (Expeditionary), Fort Hood, TX. He holds a B.S. in law enforcement from the University of Scranton and an M.S. in national security and strategic studies from the U.S. Naval War College.

# International Considerations for Army Acquisition

David Dopp, LTC Wolfgang Petermann,  
and LTC Ben Garza, USMC

**A**s armed forces around the world prepare to meet the challenges posed by future coalition operations, they must be equipped with tactical vehicles capable of performing diverse mission roles in multiple terrains. The U.S. Army and U.S. Marine Corps (USMC) Joint Light Tactical Vehicle (JLTV) program will meet those challenges by providing an expeditionary family of vehicles (FoV) capable of performing multiple roles and providing protected, sustained, and networked mobility for people and payloads across a diverse operational spectrum.

An Australian light armored vehicle from the 2/14th Light Horse Regiment, patrols for enemy contacts during Exercise Talisman Saber 2007. This biennial exercise, designed to enhance the combat readiness and interoperability between U.S. and Australian military forces, is conducted in Australia and focuses on crisis action planning and execution of contingency response operations. (U.S. Navy photo by MC1 James E. Foehl.)



In October 2008, the U.S. Army announced the selection of three TD contractors for the JLTV FoV. The three companies awarded contracts under the full and open competition process were: BAE Systems Land and Armament Systems, Ground Systems Division; General Tactical Vehicles; and Lockheed Martin Systems Integration. (Images courtesy of BAE Systems, General Tactical Vehicles, and Lockheed Martin. Collage created by U.S. Army.)

The JLTV program has opened the door for allied nations to jointly and simultaneously address similar problems surrounding the tactical vehicle imbalance (protection, payload, and performance). The U.S. military and our coalition partners are collaborating to address the JLTV program's need to balance critical weight and transportability restrictions within protection, payload, and performance requirements.

JLTVs will restore transportability and overcome the imbalance in protection, payload, and performance within the existing tactical vehicle fleet.

acquisition decision makers and Congress. The JLTV program is a Joint Army-USMC program aligned with a Joint program office managed by the Army's Project Manager Joint Combat Support Systems (PM JCSS). PM JCSS falls under the leadership of Program Executive Office Combat Support and Combat Service Support (PEO CS&CSS).

As the central component of DOD's tactical wheeled vehicles strategy, JLTVs will enhance the military services' mix of tactical vehicles by providing a balanced vehicle solution — protection, payload, and performance —

with increased transportability and expeditionary mobility. JLTVs will restore transportability and overcome the imbalance in protection, payload, and performance within the existing tactical vehicle fleet.

Modernizing the tactical vehicle fleet ensures protected, sustained, and networked mobility for Army and USMC personnel and equipment and partner nations on the modern battlefield. JLTVs will increase protection and performance, minimize ownership costs by maximizing commonality, increase fuel efficiency, and encourage effective competition throughout the program development.

The JLTV FoV includes 10 configurations and companion trailers in three payload configurations (A: 3,500-pound

## Development

The JLTV FoV was developed per DOD acquisition guidance and has undergone intense examination by

capacity; B: 4,000-4,500-pound capacity; and C: 5,100-pound capacity). The JLTV design must support mobility, reliability, and maintainability within these given weight limits to ensure transportability to and from the battlefield. Commonality of components, maintenance procedures, and training among all variants will minimize costs. Scalable armor solutions will maintain load-carrying capacity but still meet the requirements for added protection.

### Acquisition Approach

JLTV is one of the first programs to fully implement the Office of the Secretary of Defense's (OSD's) September 2007 competitive prototyping policy, which calls for two or more competing teams to produce prototypes through Milestone B, with the goal of reducing risk and synchronizing requirements.

In October 2008, the U.S. Army announced the selection of three technology development (TD) contractors

for the JLTV FoV. The three companies awarded contracts under the full and open competition process were:

- BAE Systems Land and Armament Systems, Ground Systems Division, Santa Clara, CA.
- General Tactical Vehicles — a joint venture of General Dynamics Land Systems Inc. and AM General LLC, Sterling Heights, MI.
- Lockheed Martin Systems Integration, Owego, NY.

The companies were awarded a combination of cost-share and cost-plus-fixed-fee contracts for a total value of approximately \$166 million in government costs.

JLTV is one of the first programs to fully implement OSD's September 2007 competitive prototyping policy, which calls for two or more competing teams to produce prototypes through Milestone B, with the goal of reducing risk and synchronizing requirements.

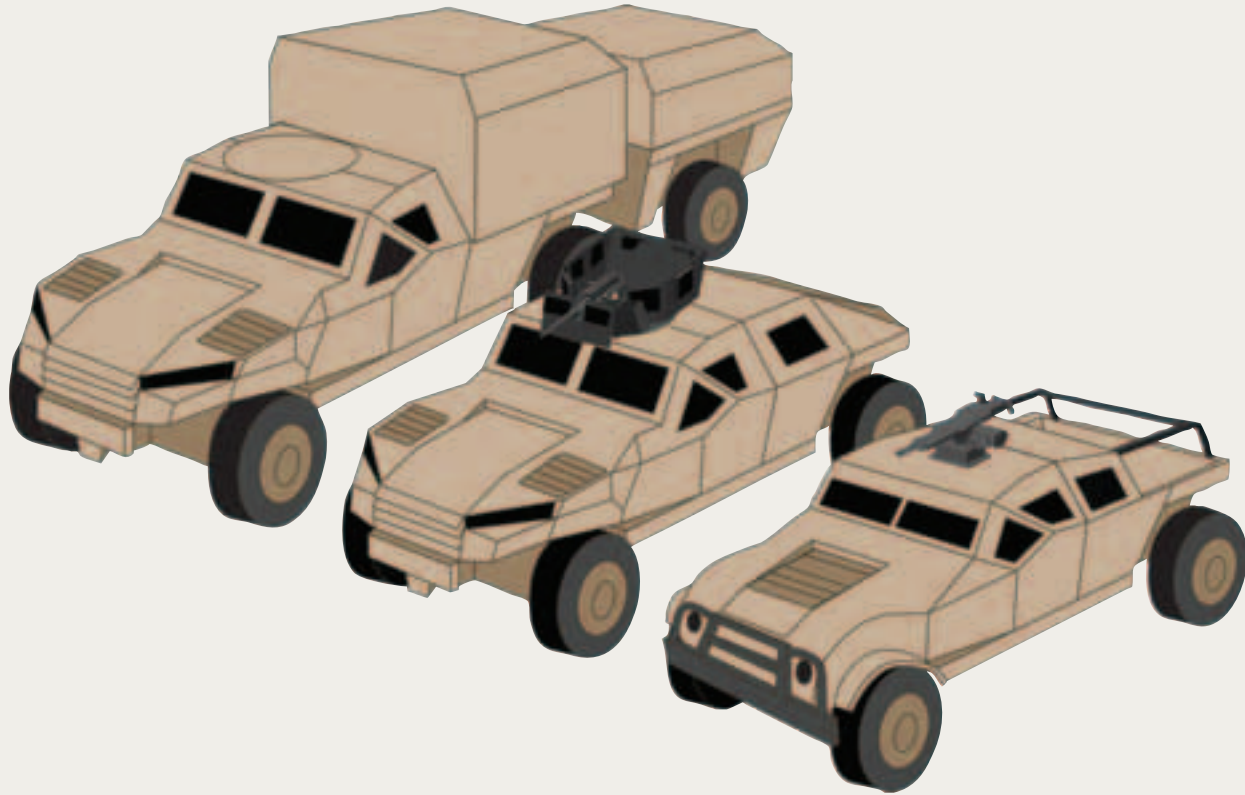
Following the JLTV TD contract announcement, two unsuccessful offerors filed protests with the Government Accountability Office (GAO). The GAO denied both protests on Feb. 17, 2009, and the contract performance, which was stopped during the protests, was resumed.

During the 27-month TD phase, armor coupons, ballistic hulls, vehicles, and trailers will undergo a series of government-led performance and reliability tests to better understand the technical

challenges, demonstrate mature technologies, and finalize the JLTV requirements. A favorable TD phase will mean that industry successfully demonstrated the JLTV FoV approach



During the 27-month TD phase, armor coupons, ballistic hulls, vehicles, and trailers will undergo a series of government-led performance and reliability tests to better understand the technical challenges, demonstrate mature technologies, and finalize the JLTV requirements. (Photo courtesy of BAE Systems Land and Armament Systems, Ground Systems Division.)



The joint protection requirements found within JLTV are designed to better meet warfighters' current and future survivability needs, all packaged in a mobile, transportable, supportable, and expeditionary solution. JLTV will enhance the services' mix of tactical vehicles by providing a balanced vehicle solution — protection, payload, and performance — with increased transportability and expeditionary mobility over current tactical vehicle systems. The JLTV FoV includes 10 configurations and companion trailers in three payload categories. (Image generated by U.S. Army computer-aided design.)

across the three payload categories; reduced ownership costs through commonality, fuel efficiency, and other means; and effectively verified technical maturity and requirements achievability. Once the TD phase is complete, the services anticipate another full and open competition with an award of two contracts for further development and demonstration, with full production and fielding expected in FY13.

As our military prepares for future coalition operations, similarity of tactical vehicle solutions across allies will enhance global interoperability and reduce maintenance and logistical burdens.

the JLTV program will reduce overall program risk through the testing and evaluation of additional prototype vehicles. As our military prepares for future coalition operations, similarity of tactical vehicle solutions across allies will enhance global interoperability and reduce maintenance and logistical burdens.

The Defense Acquisition Executive (DAE), in a memorandum dated Dec. 22, 2007, instructed the military

departments to “actively seek foreign participation in the JLTV program” and “develop a strategy to obtain such

foreign participation in coordination with the office of ... Director for International Cooperation.” In response, the JLTV program initiated partnerships with Australia, the United Kingdom (U.K.), Israel, and Canada, and has provided information to other NATO partners.

The Army determined that the best approach to meet the need for international cooperation, support the OSD's competitive prototyping policy, and reduce program risk was to have foreign participants contribute to the TD phase and, by combining resources, increase the number of prototypes fabricated. This approach further reduces U.S. risk and satisfies test objectives and requirement validation for the TD phase.

### International Approach

International participation in



Working in close coordination with the Deputy Assistant Secretary of the Army for Defense Exports and Cooperation, whose mission includes developing strategic international cooperative efforts, the JLTV program office was able to use existing memoranda of understanding (MOU) to develop a project agreement (PA) with Australia and a proposed PA with Israel. These PAs (the U.S.-Australian PA was

signed on Jan. 21, 2009; technical discussions with Israel are ongoing) have saved a significant amount of time and enabled integration of the international effort without program delay. The JLTV office will also exchange information during the TD phase with the U.K. and Canada by way of established working groups.

### Work-Share Approach and Support to JLTV Program

Australia's commitment to the JLTV program supports the DAE's direction for a "robust" TD phase that will result in an executable engineering, manufacturing, and development (EMD) or production phase. The agreement states that the U.S. and Australia will jointly acquire 30 prototype vehicles: 21 from the U.S. and 9 from Australia.

The additional nine prototype vehicles funded by Australia — three vehicles from each contractor across the three JLTV payload categories — will permit the Army and USMC to collect reliability, availability, and maintainability (RAM) data in all payload categories, including the JLTV Category C vehicle, which previously was

Australia's commitment to the JLTV program supports the DAE's direction for a "robust" TD phase that will result in an executable EMD or production phase.

not affordable. This benefit is unique in that it enables substantiation of the JLTV reliability requirements and significantly increases confidence in the test data. Procuring the Australian prototypes will also significantly increase RAM mileage during the TD phase.

To further reduce JLTV program risk, Australia will conduct supplementary ballistic testing and tropical environment

assessments, both of which were not planned for or affordable during the initial TD phase. Tropical environment assessments are not available within CONUS.

As an additional warfighting benefit that is not readily quantifiable, our coalition partners will have similar equipment, which could reduce logistics support requirements within the theaters of operations.

### Successful Collaboration and the Way Ahead

The embedding of cooperative program personnel (CPP) within the JLTV program office is also a key ingredient to a successful partnership. It will greatly enhance the long-term JLTV development strategy. Australian CPPs will work alongside JLTV program personnel through the TD phase to ensure that each nation is working as "one team" to develop common requirements for our warfighters.

There will be other opportunities for further allied participation during the EMD and production phases. It is the intent of the United States to enter into a multilateral MOU with

Australia, Canada, Israel, the U.K., and potentially other allied nations for the JLTV program's EMD phase and, if that is successful, to then enter into a multilateral MOU for JLTV production and sustainment.

**DAVID DOPP** is the Deputy for Technology, PM JCSS. He has a B.S. in mechanical engineering from the Rochester Institute of Technology, an M.B.A. from the Florida Institute of Technology, and an M.S. in strategic studies from the U.S. Army War College. Dopp is a U.S. Army Acquisition Corps (AAC) member and is Level III certified in program management; systems planning, research, development, and engineering; and test and evaluation.

**LTC WOLFGANG PETERMANN** is the Army PM JLTV, PEO CS&CSS. He has a B.A. in political science from Wayne State University and an M.A. in international relations from Boston University. Petermann is a U.S. Army Command and General Staff College graduate; is Level III certified in program management, contracting, and procurement and purchasing; and is an AAC member.

**LTC BEN GARZA** is the USMC PM JLTV, PEO Land Systems. He holds a B.A. in biology from Western New Mexico University and an M.S. in management from the Florida Institute of Technology. Garza is a graduate of the USMC Command and Staff College, the Defense Acquisition University's Advanced Program Managers Course, and Executive Program Manager's Course. He is Level III certified in program management and designated as an acquisition professional officer.

## Precision Acquisitions — Sharing the Lessons of Excalibur

LTC Joseph S. Minus Jr. and Lu Ting

**S**ecurity cooperation is an integral part of defense acquisition. Through security cooperation, the United States can strengthen relationships, bolster interoperability with foreign nations, build the capacity of our partners, mitigate risk during development of systems, lower unit costs for the U.S. military, and support the American industrial base. Among the challenges of working internationally is integrating a revolutionary weapon system, such as the XM982 Excalibur 155mm artillery projectile, into a foreign system.

PVT Corey Rodriguez, deployed with Charlie Co., 3rd Battalion (Bn), 321st Field Artillery Regiment (FAR), pulls the lanyard on the M777A2 during the first firing of the Army's new GPS-guided Excalibur round in Afghanistan at Camp Blessing, Feb. 25, 2008. (U.S. Army photo.)

The XM982 Excalibur program is an effective model for working both international armaments cooperation and foreign military sales (FMS) programs. It proves that through careful planning, international integration can be accomplished successfully.

## Background

Many countries rely on artillery rather than aircraft for deep strikes, as artillery is a more cost-effective means of delivering firepower. Excalibur, which was developed for U.S. and Swedish cannon systems, offers an extended-range precision capability that fills a key role in extended area fire support. That is why, during the development of Excalibur, several countries expressed an interest in the precision-guided cannon-fired projectile. The Excalibur Program Manager (PM) and the U.S. Army Armaments Research, Development, and Engineering Center (ARDEC) staff wondered if Excalibur could be compatible with international weapon systems and support qualification and integration into other FMS programs.

As a successful international cooperative program, the XM982 Excalibur combined the trajectory correctable munitions (TCMs) of the Swedish Defense Materiel Administration (*Försvarets Materielverk* (FMV)) and the Army's low-cost competent munitions (LCCMs). The result was the only artillery projectile that can hit its target with a circular error probability of less than 10 meters.

Excalibur is a very capable weapon system, but it is extremely complicated.

Integration with foreign systems not only presents a technical challenge, but also adds bureaucratic and communication complications. To surmount these challenges, the Excalibur PM and ARDEC developed processes that specifically support the international sales of XM982 Excalibur.

## A Prime Example

In April 1996, FMV and ARDEC held an information exchange on indirect fire technologies. FMV presented its research and development (R&D) program for TCM, and ARDEC presented its LCCM technology program. The Swedish TCMs use 1-second

As a successful international cooperative program, the XM982 Excalibur combined the TCMs of the Swedish Defense Materiel Administration and the Army's LCCMs.

radar communication to activate side thrusters and correct the trajectory of a projectile in flight. The U.S. LCCMs employ a fuze with automatic Global Positioning System (GPS) registration that can accurately measure trajectory throughout the flight.

Both FMV and the Army realized the possible mutual benefit of leveraging the two technologies and continued information exchanges on these subjects. In May 1999, FMV and ARDEC established a cooperative R&D project arrangement (PA) on TCMs that would build upon FMV's progress and incorporate ARDEC's guidance and control technologies.

Through this 3-year collaboration, the Army and FMV not only benefited from sharing technology, but also built a trusted partnership. In December 2002, senior leaders of both defense departments, recognizing the benefits of their shared technologies, approved

the merger of the TCM PA into the Army's Excalibur program, making Excalibur a U.S.-Swedish co-development project.

## International Cooperation Mechanisms

The Excalibur program is a prime example of international cooperation because it illustrates the entire cycle of an effective collaboration: from information exchange, to cooperative R&D and co-development, to staffing for cooperative production. In this instance, collaboration began with information exchanges under the auspices of a subject-specific information exchange agreement (IEA) annex to a master information exchange program memorandum of understanding.

The IEA annex provided the mechanism for an orderly exchange of technical information between DOD R&D establishments and their foreign counterparts. The objective of an information exchange is to identify opportunities for cooperative R&D and establish a cooperative R&D PA, which has a clear funding commitment and delineated phased schedule, with cost breakdowns, work breakdown structures, work-share plans, and deliverables associated with each phase. A PA also has a definite exit strategy and a plan for either transitioning into other Army technology base projects or into the system development and demonstration phase of an acquisition program.

## FMS Process

Excalibur FMS also proved successful and provided an additional set of lessons learned. After supporting several Excalibur FMS to U.S. allies, the Excalibur PM noticed many of the steps that drive international sales are similar: information exchange, the FMS process, compatibility test plan,

qualification plan, integration plan, and training strategy. The PM and ARDEC now work closely with the U.S. Army Security Assistance Command and the Deputy Assistant Secretary of the Army for Defense Exports and Cooperation to educate the entire integrated product team and partner countries to address these critical steps.

While the FMS process is well defined, specific activities must be tailored for each country and weapon system. The lessons learned from Excalibur's foreign sales effort can be applied to any international sale of a complex system. For success, the PM must focus on key drivers and set proper expectations, develop well coordinated plans, and successfully introduce the new capabilities to potential acquiring nations.

The timeline for developing the requirements for an FMS case is long, so the United States and the partnering country must set realistic schedule expectations. The United States cannot begin work, or even order test hardware, until both an FMS agreement and funding are in place. After putting an information exchange mechanism in place, the PM could begin detailed discussions regarding the specific requirements of the Excalibur's sale. When putting an FMS request together, the PM must address two main issues: compatibility and qualification. Once the FMS case is approved and funded, the PM can plan and execute the compatibility test plan.

### Compatibility Test Plan

The Excalibur PM and each respective partner nation jointly developed a test plan to determine if Excalibur is compatible and safe to use with the foreign cannon system. ARDEC developed a generic compatibility test plan that can be tailored for each specific FMS case. The plan is based on the risks, concerns,

or requirements of a particular nation or military service as follows:

- Ammunition storage and handling
- Initialization and fuze setting
- Technical fire control
- Ramming
- Interior ballistics
- Intermediate ballistics

The compatibility test results provide data to address those concerns and to complete a risk assessment for continuing on to qualification. Once the team is comfortable with the level of compatibility, qualification testing can begin.

### Qualification Test Plan

The next step is to agree on the data required to support qualification. The partner nation typically has its own safety boards, which require test results data. Although the Excalibur PM follows the International Test Operating Procedures during developmental testing, each country must determine what data and testing will meet its particular requirements.

Excalibur has many sources of test data, from historical tests to modeling. Each FMS partner nation must determine if it can use the historical data, or if new tests are required to satisfy its safety standards and requirements for materiel release. With different technical terminology, metrics, and measures, misunderstandings are common at this stage, even among English-speaking countries.

Once the qualification plan is finalized, the team amends the FMS case, if necessary, and includes test hardware and U.S. support. Such qualification efforts are important to support a partner nation's investment.

### Integration Plan

Even as a partner nation begins planning for compatibility and qualification, it must plan for the greatest challenge — integration. Integration efforts require significant planning for an acquiring nation. The introduction of precision munitions often means changes to doctrine, training, technical fire control systems, and forward observer equipment. For example, the adoption of Excalibur and use of the U.S. Army's Advanced Field Artillery Tactical Data System by the Australian Defence Force meant changes to the method Australian soldiers use for calculating a fire mission's direction. Shifting from Australia's use of bearing (degrees) to the U.S. artillery standard



SSG Darius Scott (left) watches SSG Jamare Cousar, Charlie Co., 3rd Bn, 321st FAR, use the Enhanced Portable Inductive Artillery Fuze Setter to program the proper grid coordinates into the Army's new GPS-guided Excalibur round before the very first fire of the round in Afghanistan at Camp Blessing, Feb. 25, 2008. (U.S. Army photo.)



The Archer Swedish Cannon System, pictured here, is the next generation of self-propelled artillery. (Photo courtesy of DefenceTalk.com.)

directional measurement (mils) resulted in changes to Australia's equipment, artillery doctrine, and training system.

Accordingly, a partnering nation must understand and plan for how Excalibur will affect its other national systems. A dedicated team must spearhead the integration. At this step, the United States can offer advice, but success depends on the acquiring nation's efforts.

### Training Strategy

The final driver of a successful FMS program for a weapon system such as Excalibur is a training strategy. An effective strategy must address integrating the precision munition into existing artillery systems. Partner nations should take full advantage of the experience of U.S. trainers and training systems during this stage.

Developing a training strategy for a revolutionary system is no trivial task. If the partner nation wants the United

States to develop training plans or use American trainers to conduct the training, the strategy must clearly describe the scope and responsibilities for each participating nation. The U.S. trainers must understand the current systems of the acquiring nation as well

The Excalibur program is a prime example of international cooperation because it illustrates the entire cycle of an effective collaboration: from information exchange, to cooperative R&D and co-development, to staffing for cooperative production.

as proposed future systems. Understanding the scope of the training will require several on-site visits and close coordination with the partnering country's military schools. Successful training completes the FMS, providing both a revolutionary new weapon system and the doctrine and technical skills to employ it.

The co-development of Excalibur by the United States and Sweden and subsequent sales to other nations illustrate the benefits that can accrue for the United States and its foreign partners by leveraging foreign and U.S. technology. Successful integration of that technology early in the

program using established processes can mutually benefit the United States and its allies.

**LTC JOSEPH S. MINUS JR.** is the Excalibur PM. He holds a B.A. in political science from Davidson College and an M.A. in information management from Webster University. Minus is a U.S. Army Command and General Staff college graduate and is Level III certified in program management, test and evaluation, and information technology. Minus is a U.S. Army Acquisition Corps (AAC) member.

**LU TING** is the Chief of the Research, Development, and Engineering (RDECOM)-ARDEC International Office and manages the RDECOM-ARDEC International Armaments Cooperation and International Standardization programs. He holds a B.S. in metallurgical engineering and materials science from National Cheng-Kung University, Taiwan, and an M.S. in materials science from the University of Notre Dame. Ting is Level III certified in systems planning, research, development, and engineering and is an AAC member.

# Javelin Weapon System: International Participation — Past, Present, and Future

John “Kyle” Perkins



**J**avelin is the premier man-portable precision, fire-and-forget medium-range missile system in the world. Designed to take the fight to the enemy, the compact, lightweight Javelin is ideally suited for 1-Soldier operation in all environments. It is the first shoulder-fired, fire-and-forget anti-tank missile fielded to the U.S. Army and U.S. Marine Corps (USMC), replacing the M47 Dragon anti-tank weapon system. Javelin’s unique top-attack flight mode, self-guiding tracking system, and advanced warhead design enable it to engage a broad spectrum of both conventional and irregular threats, including tanks, bunkers, buildings, and vehicles. The Javelin weapon system is notably distinguished as an acquisition because of the cooperative engagement of international users and strong life-cycle contractor support (LCCS).

LCpl Jed Bolyard, Weapons Co., 2nd Battalion (Bn), 25th Marine Regiment (25th Marines), Regimental Combat Team (RCT) 5, fires the Javelin missile during an exercise near Al Asad Air Base, Iraq, Dec. 8, 2008. The Javelin shoot was one small part of a larger combined-arms exercise, which integrated traditional infantry elements with aviation, mortars, and several anti-armor systems. (USMC photo by CPT Paul Greenberg, RCT 5, 1st Marine Division (MARDIV) Public Affairs.)

## The Weapon System

Javelin's two major modular components are a reusable command launch unit (CLU) and a missile sealed in a disposable launch tube assembly. The CLU's integrated day/night sight provides target engagement capability in adverse weather and countermeasure environments. The CLU is also used for stand-alone battlefield surveillance and reconnaissance. The Javelin missile and CLU together weigh 49.5 pounds. Its fire-and-forget capability enables gunners to fire and then immediately take cover, greatly increasing survivability. Special features include a selectable top-attack or direct-fire

mode (for targets under cover or for use in urban terrain against bunkers and buildings), target lock-on before launch, and a very limited back-blast that enables gunners to fire safely from enclosures and covered fighting positions. The Javelin's maximum range exceeds 2,500 meters. Training devices include a missile simulation round or drill round (used during training exercises), an indoor missile system basic skills trainer, and an outdoor Javelin field tactical trainer.

The Javelin System Block I upgrade now in production provides a more lethal warhead; increases detection,

recognition, and identification range; and reduces the missile flight time to the target. The Block I CLU includes a new afocal with increased magnification, more computer resources, and enhanced embedded maintenance capability. The Block I missile has a new flight motor and warhead that increases the missile range, shortens the time of flight, and increases lethality.

## LCCS

The Javelin system is unique because the contractor provides LCCS. Javelin LCCS has resulted in CLU operational readiness rates well over 90 percent for the Army. It has also resulted in an



unprecedented turnaround time of less than 10 days for logistics support of training devices. The Raytheon Co.-Lockheed Martin Javelin joint venture has received numerous logistics awards, such as the 2006 Defense Logistics Award, Contractor-Military Collaboration of the Year, the Lockheed Martin Logistics Facility Award for Excellence, and, in 2007, the Mission-Critical Enterprise Systems Customer Service Award.

### International Sales

During early development and fielding, exporting the Javelin system was difficult because of its portability and lethality. Several preconditions, such as purchases confined to foreign military sales (FMS) and special terms and conditions regarding the system's storage and security, were set to limit Javelin system exportation. Over the years, export barriers have been addressed with individual countries, and Javelin has been purchased by 11 countries

through FMS and hybrid FMS-direct commercial sales arrangements. These purchases are valued at almost \$1 billion. Also, another 6 nations are considering the Javelin system at an estimated sales value of more than \$600 million.

The initial Javelin export sales were small and did not play a major role in Javelin system production. However, within the last few years, FMS purchases have helped to avert gaps in the Javelin production line and minimize future procurement costs for DOD by millions of dollars in requalification costs and lowered overall unit costs. As more countries

add the Javelin system to their inventories, numerous spinoffs from international customers have resulted in new hardware developments, such as

a larger CLU afocal, an outdoor trainer, a remote weapon station, indoor trainers, tripods, and training rounds.

Javelin's unique top-attack flight mode, self-guiding tracking system, and advanced warhead design enable it to engage a broad spectrum of both conventional and irregular threats, including tanks, bunkers, buildings, and vehicles.

### International Cooperation and Future Capabilities

Recently, there have been several major developments in Javelin international growth. One was the implementation of an FMS case in July 2007, which allowed a Javelin system user

to participate in future Javelin weapon system research and development initiatives with the Close Combat Missile



LCpl David Fuertes, Weapons Co., 2nd Bn, 25th Marines, RCT 5, fires the Javelin missile during an exercise near Al Asad Air Base, Iraq, Dec. 8, 2008. (USMC photo by CPT Paul Greenberg, RCT 5, 1st MARDIV Public Affairs.)





LCpl Jed Bolyard (right) and SSgt Terrance James withdraw from their firing position after a successful Javelin missile fire during an exercise near Al Asad Air Base, Iraq, Dec. 8, 2008. Bolyard and James are both with Weapons Co., 2nd Bn, 25th Marines, RCT 5. (USMC photo by CPT Paul Greenberg, RCT 5, 1st MARDIV Public Affairs.)

enhanced lethality, extended range, and embedded training.

The highlight of the JSIG conference was a presentation on Javelin opportunities by the Chief of Policy for the Deputy Assistant Secretary of the Army for Defense Exports and Cooperation (DASA (DE&C)). The presentation outlined a new dynamic approach that would allow the U.S. Army to collaborate and share technology with Javelin system users worldwide. The presentation highlighted DASA(DE&C)'s support to focus on capability improvements across the board and partner with foreign industry,

and its commitment that all initiatives by Javelin system users worldwide will be considered.

The JSIG conference closed with the U.S. Army stating its desire to pursue future cooperative Javelin development with international partners. It is clear that the Javelin system has progressed greatly from its nonexportable beginning to a missile system that is successfully being deployed by the Army, the USMC, and many of our allies.

**JOHN "KYLE" PERKINS** is an Army International Program Management Specialist working for the U.S. Army Aviation and Missile Command Security Assistance Management Directorate and is collocated with the Program Executive Office Missiles and Space's CCMS PMO. Perkins holds a B.B.A. in management from Texas A&M University Corpus Christi and a B.S. in accounting from Athens State University. He is Level I certified in program management.

Systems (CCMS) Project Management Office (PMO). This FMS case allowed the CCMS PMO to initiate, investigate, and determine the feasibility of future Javelin product improvements. Among the developments being investigated are improvements in the networking, precision terminal guidance (man-in-the-loop), increased range (focal plane array and guidance electronics unit improvements), embedded training, and a multipurpose warhead.

Another major development in the Javelin international arena was the approval of a new Javelin export policy in the spring of 2007. This policy allowed the creation of a Javelin Systems International Group (JSIG), which provides a forum for all Javelin users to meet and discuss Javelin-related issues and share the

Within the last few years, FMS purchases have helped to avert gaps in the Javelin production line and minimize future procurement costs for DOD by millions of dollars in requalification costs and lowered overall unit costs.

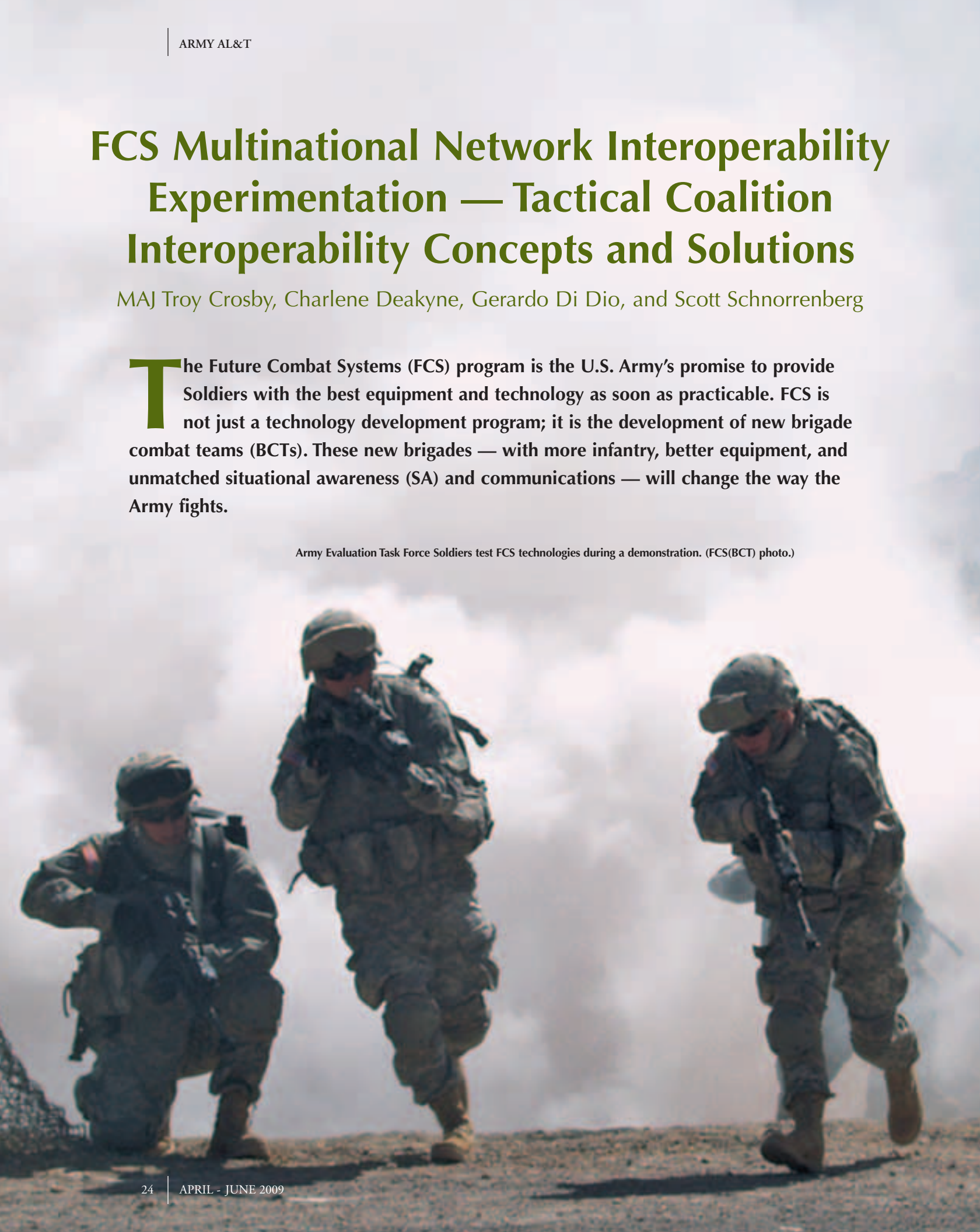
latest product information. The JSIG's inaugural meeting was held in Orlando, FL, Feb. 5-7, 2008. International Javelin users were briefed on the program's status; Javelin Block I system improvements; and other users' experience with deployment, system reliability, and contractor logistics support. The U.S. Army Training and Doctrine Command (TRADOC) capability manager also briefed international users on the Army's future requirements for Javelin. At the meeting, the JSIG participants had an opportunity to give the TRADOC systems manager their input on potential future requirements. Some of those future capabilities include networked cooperative engagement, precision terminal guidance, beyond-line-of-sight firing, multipurpose

# FCS Multinational Network Interoperability Experimentation — Tactical Coalition Interoperability Concepts and Solutions

MAJ Troy Crosby, Charlene Deakyne, Gerardo Di Dio, and Scott Schnorrenberg

**T**he Future Combat Systems (FCS) program is the U.S. Army's promise to provide Soldiers with the best equipment and technology as soon as practicable. FCS is not just a technology development program; it is the development of new brigade combat teams (BCTs). These new brigades — with more infantry, better equipment, and unmatched situational awareness (SA) and communications — will change the way the Army fights.

Army Evaluation Task Force Soldiers test FCS technologies during a demonstration. (FCS(BCT) photo.)



The heart of the FCS(BCT) is its network. With its logistics and embedded training systems, the FCS network connects 14 different systems, enabling Soldiers to perceive, comprehend, shape, and dominate the future battlefield at unprecedented levels. The network is a layered system of computers, software, radios, and sensors — all interconnected with each variant in the FCS(BCT). There are five network layers: sensor/platform, application, services, transport, and standards. These layers provide diversity in waveform, frequency, and environment to ensure multiple paths are available to transport data. When a layer of FCS communication becomes unavailable because of increased range, obstructions, etc., the next best layer is selected to support connectivity, providing seamless information delivery.

The capability for vertical and horizontal information exchange is vital if network operators are to maintain data currency and receive and then distribute pertinent intelligence to a commander and staff. This capability also maximizes flexibility to exchange data from various U.S. and multinational sources. Toward that end, the FCS program entered into bilateral memorandum of understanding (MOU) agreements with the United Kingdom (U.K.) and Australia, and recently ratified an MOU with Canada. The FCS program also has a Five Powers net-centric project arrangement (5P-NC-PA) with the four other 5P nations: the U.K., Germany, Italy, and France.

The FCS Joint Interagency Multinational Interoperability (JIMI) team works with joint and coalition partners to understand their network migration strategies and negotiate a suitable approach to interoperability. The FCS JIMI team also participates in various joint experiments to ensure

both intra-agency and multinational interoperability across network layers. Each experiment must meet certain assessment objectives to ensure that its intended and threshold levels of system interoperability are achieved and demonstrated in a live environment with current system software and hardware.

Multinational interoperability experiments provide high payoff in the form of knowledge, insight, and understanding of the FCS program development and execution. Early exploration of interoperability capabilities and development of requirements will improve the functionality of systems.

### **Multinational Interoperability With the U.K.**

In December 2004, the U.S. and U.K. signed the Land Battlespace Systems MOU. Under that MOU's authority, the FCS(BCT) program manager (PM) established a bilateral command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) interoperability PA to deliver significant improvements in C4ISR capability and interoperability through a 2-phased program. The PA established a comprehensive and focused framework for determining and implementing tactical C4ISR interoperability between the U.S. Army and U.K. Joint Forces (Army and Royal Marines).

Phase one was a systematic review of planned U.S.-U.K. C4ISR interoperability to assess options for improvement. Phase two, which is currently underway, completes U.S.-U.K. program planning to deliver improved interoperability across all U.S. and U.K. defense lines of development. The experiments in phase two will evaluate the delivery of capabilities defined during phase one and

develop the interoperability requirements for current U.S. and U.K. programs of record.

### **Multinational Interoperability With Australia**

In July 2006, FCS(BCT) entered into an MOU with Australia in the area of land forces capabilities modernization. Under that MOU's authority, a future force networks interoperability PA between the U.S. and Australia was signed in the third quarter 2008 to enable C4ISR interoperability and integration between U.S. future forces and Australian land forces in a combined and joint environment. The PA also supports integrated coalition operations in the network-centric paradigm.

The U.S.-Australia agreement focuses on the development and implementation of Future Force interoperability solutions by aligning ongoing actions with planned studies and experimentation. The first phase, which began in the fourth quarter 2008, is evaluating the network platform and Soldier waveforms, battle command applications, and middleware systems. Second phase plans include using U.S. FCS radio-programmable capabilities as part of Battle Communications System (Land) development.

### **Multinational Interoperability With the 5P**

The Deputy Assistant Secretary of the Army for Defense Exports and Cooperation is the proponent for a 5P senior national representative (Army) MOU with the U.K., Italy, France, and Germany. Under that MOU's authority, the FCS(BCT) PM developed a net-centric interoperability PA. The objectives are to enhance C4ISR interoperability among the participating nations' ground forces through synchronization and alignment of net-centric migration plans;



Soldiers review their screens at a Non-Line-of-Sight Cannon demonstration at the Pentagon in June 2008. (U.S. Army photo.)

to increase interoperability within NATO by establishing net-centric operational concepts, service specifications, and technology standards; and to leverage ongoing and planned national and multinational (NATO, Multinational Interoperability Program, etc.) analyses, studies, modeling and simulation efforts, and experimentation to the maximum extent possible. The 5P-NC-PA's 3-year plan is to complete system alignment and concept-of-operations documentation and experimentation to define brigade-and-below interoperability.

### SEELEX

The Systems Engineering and Experimentation Lab Experiment (SEELEX) events used a mix of high-fidelity C4ISR system simulations, real-time models, real systems with computer-generated force, and comprehensive analysis and reporting tools. SEELEX 5, the latest in the SEELEX series and conducted in January 2007, investigated brigade to brigade-and-below-brigade interoperability using a range of direct point-to-point options to inform interim transformation capability options. U.S. and U.K. systems were fully integrated to support the operational construct, waveform simulation, and bidirectional SA message exchanges across

echelons in both the Current and Future Force brigade structures.

SEELEX 5 established the framework for future bilateral U.S.-U.K. C4ISR interoperability experimentation. The multinational experimentation team broke new ground through the integration of required message exchange models, providing an accurate exchange of all message sets. The combined information path for blue and red SA messages transported through various waveforms and computer information software infrastructures provided an excellent first look at the complexities and capabilities associated with U.S.-U.K. interoperability solutions.

### Coalition Warrior Interoperability Demonstration (CWID)

The CWID is the Chairman of the Joint Chiefs of Staff annual event enabling discovery and investigation of C4ISR solutions that consider relevant and timely objectives for enhancing coalition and combatant commander interoperability and information sharing. The CWID focuses on net-centric solutions to identified C4ISR gaps that the traditional DOD acquisition process is not addressing.

The FCS interoperability trial for CWID 08 supported the goal to improve a coalition and Joint C4ISR architecture. It focused on SA data exchange, collaborative operations (including chat and white-boarding), and network fire missions between the FCS System-of-Systems Common Operating Environment (SOSCOE) middleware and battle command surrogates and the U.K. land command and control information system (LC2IS). This involved investigating the Web-based interoperability between U.S. and U.K. land forces.

Successful FCS participation in CWID 08 provided detailed technical feedback to the FCS lead systems integrator — feedback that can be applied to the development of future SOSCOE and battle command products. The U.K. experimentation team also collected valuable information for improving their LC2IS. The CWID 08 was the first step in evaluating network fires missions. It will serve as a baseline for future experimentation and cooperation between FCS and the U.K. acquisition organizations.

### Multinational Experiment (MNE) 2.0

Although peripheral planning and integration activities of the MNE 2.0 — the most recent MNE (conducted during the fourth quarter 2007) — were completed virtually, the main experiment was conducted out of the FCS Network Analysis and Integration Laboratory (NAIL) at Fort Monmouth, NJ. The aim was to exchange position location information (PLI) with strategic reachback to the U.S. Mission Management Center using a service-oriented approach, tactical-level (battalion-to-battalion) message exchange over the U.S. Joint Tactical Radio System (JTRS)-U.K. Bowman High-Capacity Data Radio gateway, collaborative planning,

and brigade-to-brigade voice-over-Internet-protocol modeling over the U.S. Army's Joint Network Node/Warfighter Information Network-Tactical (WIN-T) to U.K. Ministry of Defense's Skynet 5 and FALCON. MNE 2.0 analyzed the end-to-end performance of this complex exchange, including cross-domain security solutions and overall network quality of service.

MNE 2.0 successfully demonstrated that using a Web services approach to PLI message exchange improved performance and collaborative planning enhancements could increase functionality and lower bandwidth requirements. Improvements were also demonstrated by moving the cross-domain solution to a U.S. tactical point of presence, allowing direct information exchange across domains. While the focus of this experiment was interoperability for bilateral collaborative operations, the experiment's conclusions have been relevant to information exchange between any logically distinct but interconnected information domains.

### MNE 3.0

MNE 3.0 will be executed as part of the partnership between the Joint Program Executive Office JTRS, the

U.K., and FCS. MNE 3.0 planning is underway, with execution scheduled for the second quarter 2009.

The experiment will be conducted at NAIL in a closed-network environment using actual hardware. The MNE will test the exchange of SA information through the JTRS-Bowman link and explore configuration management, message exchange and translation, and mission management load for that gateway. The service capabilities to exchange basic command and control, targeting, and voice data will be evaluated using the WIN-T-to-FALCON link. MNE 3.0 will be an opportunity to evaluate ways to reduce risk for U.S. JTRS and U.K. Bowman programs.

Over the past few years, the FCS program team has worked diligently with our multinational partners to identify areas for experimentation within the C4ISR arena, and it continues to build upon the results of each test. Participation in PAs and experiments provide an early opportunity to investigate and assess interoperability of FCS platforms and network products with products being developed by our coalition partners. The PA participants maintain close relationships with all stakeholders

within their country, with the goal of a seamless coalition battlefield. All things considered, multinational network interoperability experimentation provides tactical coalition interoperability concepts and solutions that will increase the communication capabilities of FCS and, ultimately, the safety of our warfighters.

**MAJ TROY CROSBY** is a Joint Assistant PM at the FCS(BCT) JIMI Product Office and the lead for Joint and MNE efforts. He holds a B.A. in business administration from James Madison University, an M.B.A. from Webster University, and an M.S. in information systems technology from The George Washington University. He is a U.S. Army Acquisition Corps member with Level II certifications in program management and information technology.

**CHARLENE DEAKYNE** is a defense contractor working for the FCS(BCT) JIMI Product Office supporting Joint and MNE efforts. She holds a B.S. in mathematics from the University of Alabama and an M.S. in computer science from the University of Alabama-Huntsville.

**GERARDO DI DIO** is a defense contractor working for the FCS(BCT) JIMI Product Office supporting Joint and MNE efforts. He holds a B.A. in electrical engineering and an M.S. in computer science from Fairleigh Dickinson University. He has more than 20 years' experience in systems engineering and research and development in defense contracting, telecommunications, medical instrumentation, and engine electronic systems.

**SCOTT SCHNORRENBURG** is a defense contractor working for the FCS(BCT) JIMI Product Office supporting Joint and MNE efforts. He holds a B.A. in psychology from Auburn University.



During the Preliminary Limited User Test, a Soldier uses FCS Spin Out capabilities, including the network, to execute cordon and search and urban defense missions in a desert environment against conventional and insurgent adversaries operating among a civilian population. (FCS(BCT) photo.)

# U.S. Army Research, Development, and Engineering Command's Armament Research, Development, and Engineering Center (RDECOM-ARDEC) — Leveraging Foreign Technologies

Lu Ting

**I**nternational cooperation in defense acquisition is mandated by DOD policy. According to *DoD Directive 5000.1*, acquisition program managers must “pursue international armaments cooperation to the maximum extent feasible, consistent with sound business practice and with the overall political, economic, technological, and national security goals of the United States.” One objective of that pursuit is the leveraging of foreign technology. By leveraging the technology of our allies and strategic partners, DOD can develop the capabilities our warfighters need within a shortened acquisition cycle and at a lower cost.



Soldiers from the 2nd Battalion (Bn), 8th Field Artillery (FA), 1st Brigade, 25th Infantry Division (ID), fire an M777A2 Howitzer Oct. 2, 2008. The calibration took place at Camp Buehring, Kuwait, and was the last requirement for the Stryker Brigade Combat Team (BCT) to complete before heading into Iraq. (U.S. Army photo by PFC Alicia Torbush.)

## A Lightweight Towed Howitzer

Possibly the best known and most successful examples of leveraging foreign technologies are the Excalibur 155mm Precision-Guided Extended Range Artillery Projectile, which has been described in an article on Page 16, and the M777 Lightweight 155mm Howitzer, which was based on foreign technologies in the beginning of its development.

In the early 1990s, in response to changes in the U.S. defense strategy — from a forward-based strategy to one

of power projection — the U.S. Army initiated the Advanced Towed Cannon System project to develop a lighter weight towed howitzer. At the time, the U.S. Marine Corps (USMC) was also looking for a replacement for the M198, which is too heavy for strategic and tactical deployment. In October 1993, the Army and USMC signed a memorandum of agreement to Jointly develop a lightweight howitzer; and in 1995, a Joint operational requirements document was approved by both services. Meanwhile, in the United Kingdom (U.K.), privately funded

development, trials, improvement, and demonstrations were already underway for lightweight field howitzers with a maximum weight of 4,000 kilograms.

In the hope to preclude the research and development (R&D) reinventing, the Army and USMC Joint Program Office conducted a competitive shoot-off to evaluate existing howitzers, with the winning candidate entering directly into engineering and manufacturing development (EMD). Three guns participated in the shoot-off and two of those were from the U.K.:



the ultra-lightweight field howitzer (UFH) of Vickers Shipbuilding and Engineering Ltd. (VSEL) and Royal Ordnance's light towed howitzer.

Both British howitzers advanced to the second round of shoot-off; however, in the end the VSEL UFH stood out and was awarded an EMD contract. In 1999, VSEL was merged into BAE Systems, which remains until today the prime contractor for production and post-production logistics support for this new howitzer.

### Nonaircraft-Grade Titanium Alloys

The new howitzer uses titanium alloys extensively to reduce weight, but the titanium alloys and manufacture of the titanium components posed major technology challenges. To ensure the transfer of technology and know-how from the U.K. to the U.S., the acquisition strategy included a pilot production to produce the final two EMD howitzers in the United States.

Titanium is a major cost driver for the new howitzer. Despite its superior strength-to-weight ratio and corrosion resistance, titanium is limited for military armaments and platforms applications because of high cost. To overcome this restriction, RDECOM-ARDEC, with the support of the Army's Foreign Technology (and Science) Assessment Support (FTAS) program, is currently evaluating a specific foreign technology that can produce nonaircraft-grade titanium ingots suitable for military application, but at a lower cost.

The FTAS program was initiated in 2005 by the Deputy Assistant Secretary of the Army for Research and Technology (DASA(R&T)), the DASA for Defense Exports and Cooperation (DE&C), and the RDECOM Commander, to fund the assessment of

emerging foreign technologies found by the RDECOM international technology centers (ITCs). The Army's ITCs provide the critical link between the U.S. technology developers and foreign academia, industry, and government labs.

### Gunfire Detection Systems (GDS)

Excalibur and the new lightweight towed howitzer leveraged foreign technologies from the beginning and ran through the entire acquisition cycles.

However, leveraging with the goal of rapid fielding can occur without an EMD.

In 1999, to counter sniper fire during operations in Bosnia and Kosovo, U.S. forces urgently needed a gunfire detection and localization capability. After surveying available technologies for rapid fielding, RDECOM-ARDEC and the RDECOM Army Research Laboratory proposed to the U.S. Special Operations Command (SOCOM) a foreign comparative testing (FCT) project to evaluate a French acoustic GDS: PILAR™. PILAR senses and analyzes the acoustic waves from gunfire to provide the relative azimuth, elevation, and range of small- and medium-caliber weapons.

PILAR performed well during FCT and subsequent evaluations. Urgent fielding and deployment of PILAR was authorized in the third fiscal quarter 2003, and 10 units each of the fixed-site (FS) and vehicle-mounted (VM) variant were deployed to Iraq for use by the 101st Airborne Division.



Soldiers from B Battery, 2nd Bn, 11th FA Regiment, 2nd Stryker BCT, 251D, prepare to fire the M777A2 Lightweight 155mm Howitzer Jan. 2, 2008, at Camp Taji, Iraq. (U.S. Army photo by SFC Christina Bhatti.)



SOCOM approved the Milestone C and fielding and deployment release in May 2005 as M1 FS GDS and M2 VM GDS. Since then, more systems have been delivered to both SOCOM and the Army in Iraq and other theaters. Soldiers named both systems among the Army's Top 10 Greatest Inventions of 2005.

### Remote Weapon Stations (RWSs)

GDS can be linked to an optical pan-and-tilt device that automatically points a day or infrared camera toward the sniper's position. For M2 VM GDS, it can be linked to an RWS and can help the Stryker vehicle commander to slew the weapon to that position and use the RWS's onboard day and night cameras to identify the target before engagement.

The Army's main RWS programs are other examples of leveraged foreign technologies. Stryker vehicles have been equipped with the Norwegian-developed M151 Protector RWS (Kongsberg Defence and Aerospace) since 2003. A variant of M151 Protector won a 2007 contract to deliver 6,500 XM153 RWS systems for the Army's multivehicle weapon-mounting and control system Common Remotely Operated Weapon Station (CROWS) II program.

The Protector RWS consists of a stabilized weapon station that can mount a variety of small- and medium-caliber weapons. RWS systems offer full, in-hull protection for the crew, much better fire-on-the-move capability, and the ability to use the RWS's advanced sensors at night or in obscured conditions.

### Low Vulnerability Artillery Propellants

Although rapid transition into an EMD phase or fielding is the most

cited outcome for the leveraging of foreign technologies, leveraging efforts more often start in the earliest stage of acquisition — the Technology Base phase. Foreign technologies help advance or expand the U.S. Technology Base where we are lagging or lack the funding for that specific R&D. Good examples are the cooperative projects on the R&D of low vulnerability (LOVA) artillery propellants with Japan and the insensitive high-energy density energetics with the Republic of Korea.

During the 17th U.S.-Japan Systems and Technology Forum (November 1995), which on the U.S. side was headed by the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD (AT&L)), International Cooperation,

Japan proposed cooperation on the R&D of LOVA artillery propellants. Japan's proposal was based on the concept to use an energetic binder called cellulose acetate nitrate (CAN), instead of a nonenergetic binder, to increase the energetic output and, at the same time, to use CAN to replace some of the high-energy energetic filler such as RDX, to lower the sensitivity of propellants.

A series of CAN compounds had been manufactured in Japan since 1992. Japan proposed to offer various CAN samples in exchange for different U.S. plasticizers so that both sides could independently design and fabricate a few energetic formulations with Japanese CAN, U.S. plasticizers, and common RDX fillers and stabilizers, and then

test for vulnerability, energy, erosivity, combustion, and aging characteristics. RDECOM-ARDEC accepted the proposal in 2000 and signed a cooperative R&D memorandum of understanding with the Technical Research and Development Institute (TRDI) of the Japan Defense Agency. It was a 4-year program and, at the end, both countries leveraged each other's technologies; gained mutual trust and

respect; and understood each other's plans, programs, and approaches for insensitive energetics R&D.

As a follow up, in 2005, Japan TRDI sent a scientist working on the CAN to RDECOM-ARDEC as an exchange scientist under the Engineer and Scientist Exchange Program (ESEP). The OUSD (AT&L) and DASA (DE&C)-run ESEP

has been a very fruitful mechanism for leveraging foreign technologies for RDECOM-ARDEC. During her 1-year assignment at RDECOM-ARDEC, the Japanese exchange scientist experimented with a new type of calorimeter. Followed by another exchange engineer from a different country, RDECOM-ARDEC now has a new capability for aging surveillance of a specific group of propellants.

RDECOM-ARDEC, with the support of the Army's FTAS program, is currently evaluating a specific foreign technology that can produce nonaircraft-grade titanium ingots suitable for military application, but at a lower cost.

### Insensitive High-Energy Density Energetics

While the LOVA cooperative project led to further leveraging of foreign technologies through ESEP, the ESEP will also lead to a follow-on cooperative R&D project. For example, a Korean scientist from the energetics laboratory of Korean Agency for



SGT Thomas Dieter, 688th Engineer Co., 890th Engineer Bn, monitors his CROWS from the protection of a Buffalo mine resistant ambush protected vehicle during a route-clearance mission in Baghdad, Feb. 22, 2009. (U.S. Army photo by SSG Mark Burrell.)

Defense Development (ADD) sent to RDECOM-ARDEC in 1997-1998 under ESEP earned such respect for his knowledge and skill in the synthesis of energetic materials that the U.S. initiated a cooperative R&D project with Korea on the design, synthesis, test, and evaluation of various novel energetics molecules.

Korean ADD has great capabilities in the theoretical calculation of energetics properties, modeling, and synthesis of novel energetics molecules; RDECOM-ARDEC has a wealth of experience in the R&D and scale-up of novel energetics. The cooperative 5-year project narrowed down the pool of promising energetics candidates, with reduced sensitivity but without degradation in performance.

In 2004, this cooperative project was extended to complete the study on several promising polynitro polyaza heterocyclic compounds. The 3-year extension will investigate the alternate synthesis routes to improve

yields, the scaling up processes, and the formulations of energetics with these compounds.

As a result of this project, RDECOM-ARDEC scientists recently designed and successfully synthesized a few novel melt-cast explosive ingredients. This material has higher energy compared to TNT and Comp-B, which are used in artillery and mortar shells, respectively. In addition, the project has elicited theoretical models for *a-priori* prediction of the densities and sensitivities of compounds. This has allowed RDECOM-ARDEC scientists to concentrate on the synthesis of new compounds that are predicted to have higher performance and lower sensitivity.

### The Challenge

International cooperation is an integral part of the acquisition program, and the leveraging of foreign technologies is the underlying objective of that cooperation. By leveraging foreign technologies, the U.S. Army's international communities have been able to help

acquisition managers develop or acquire the required capabilities, shorten the acquisition cycle, and lower acquisition cost. Past programs have made great contributions; however, in light of the ever-changing warfighting environment, and with the rapid advancement of technology and ubiquitous technology sources, how to effectively and efficiently leverage foreign technologies remains an enormous challenge.

LU TING is the Chief, RDECOM-ARDEC International Office, and manages the RDECOM-ARDEC International Armaments Cooperation and International Standardization programs. He holds a B.S. in metallurgical engineering and materials science from National Cheng-Kung University, Taiwan, and an M.S. in materials science from the University of Notre Dame. Ting is Level III certified in systems planning, research, development, and engineering and is a U.S. Army Acquisition Corps member.

# RDECOM ITCs


RDECOM has nine ITCs organized across three regions. The Atlantic regional office is in London, with two ITCs in France and Germany. The Pacific regional office is in Tokyo, with two ITCs in Singapore and Australia. The Americas regional office is in Santiago, Chile, with two ITCs in Canada and Argentina.

with two ITCs in Canada and Argentina. Many of these offices are collocated with the U.S. Navy's Office of Naval Research and the U.S. Air Force's Office of Scientific Research. Collocation allows the Army to share information and leads with its sister services.



# Army Foreign Comparative Testing (FCT) Program

Karen M. Wilson



**T**hanks to the 7.62mm short-range training ammunition cartridge, the Army has enhanced its live-fire training for small unit tactics at military operation urbanized terrain sites and reduced the size requirements for small-arms ranges. The cartridge, which was developed by SNC Technologies of Canada, was a solution to bullets traveling beyond the standard target distances, a problem that posed obvious safety issues. The 7.62mm cartridge is an example of the success our military has had under the FCT program. More than 800,000 rounds have been produced for the Army's inventory and the U.S. Navy has fielded more than 800,000 rounds. The projected Army fielding date is in the first half of 2009. Warfighters are anxious for the 7.62mm cartridge to be available through inventory and standard issue channel since it will greatly enhance the capabilities of training facilities and meet deployment requirements.

After FCT qualification in 2002, the first two Buffalo mine-protected clearance vehicles were deployed in support of the IVMMMD. (U.S. Army photo.)

FCT is an important acquisition tool for the Army. It takes advantage of existing technology developed by non-U.S. companies to get the best equipment to our Soldiers quickly and cheaply. The FCT program also has a number of objectives beyond satisfying the immediate needs of program managers (PMs). FCT solutions have reduced program risk, fostered international relationships, enhanced standardization and interoperability, and bolstered the U.S. industrial base through licensed production of foreign products within the United States.

### Background and Procedures

The Army FCT program's mission is to test items and technologies (with a high-technology readiness level) of our foreign allies and friends to determine their potential for satisfying Army requirements. FCT PMs look for candidates that save on cost and time (field rapidly), improve performance over the current item, or solve an operational or tactical problem.

The program promotes the procurement of mature equipment and technology, which reduces expenditures for research and development (R&D). FCT acquisitions can also lower procurement and operations costs (items already in production can lower the cost) and support life-cycle savings, thus reducing risk for major acquisition programs and accelerating the fielding of equipment needed by our warfighters.

The FCT program was congressionally authorized in 1989 as *Title 10, United States Code, Section 2350a(g)*. The FCT program is a consolidation of the former Foreign Weapons Evaluation (1980-1989) and NATO Comparative Test (1986-1989) programs. The new program focused on identifying and testing equipment to get it quickly and

more cost-effectively to U.S. forces to improve their readiness and safety.

The Army comparative testing team manages and provides FCT program oversight. The team consists of four civilians and one contractor. In addition to managing the program, the team actively seeks candidate items that could satisfy the existing requirements of PMs. The comparative testing team is part of the U.S. Army Research, Development, and Engineering Command (RDECOM) Headquarters South, Global Operations and Support Directorate, Fort Belvoir, VA. The Commanding General (CG), U.S. Army Materiel Command, exercises responsibility for Army participation in the greater DOD FCT program, and that responsibility has been delegated to the RDECOM CG.

The Army team also manages the Defense Acquisition Challenge (DAC) program, which proposes alternative or "challenge" proposals to existing DOD acquisition programs. Much like the FCT program, the DAC challenge is to find an out-of-the box domestic solution (or foreign solution if foreign candidates are included in the project) that would improve upon current performance or result in greater affordability, manufacturability, or operational capability. DAC funds are provided for test and evaluation (T&E) of the approved DAC proposals.

The Office of the Secretary of Defense (OSD) Comparative Testing Office (CTO) reviews and selects service or U.S. Special Operations Command (SOCOM) proposals per the FCT evaluation criteria and funding constraints and notifies Congress of its intent to provide funding for T&E for the new and continuing projects in the coming fiscal year. Approved and funded proposals become projects.

The sponsoring organization — either service or command — conducts the testing and procures items that meet the set requirements. U.S. candidate costs in FCT tests are funded by the sponsoring organization, as are all costs for procurement and fielding. Projects are usually funded for 1 or 2 years.

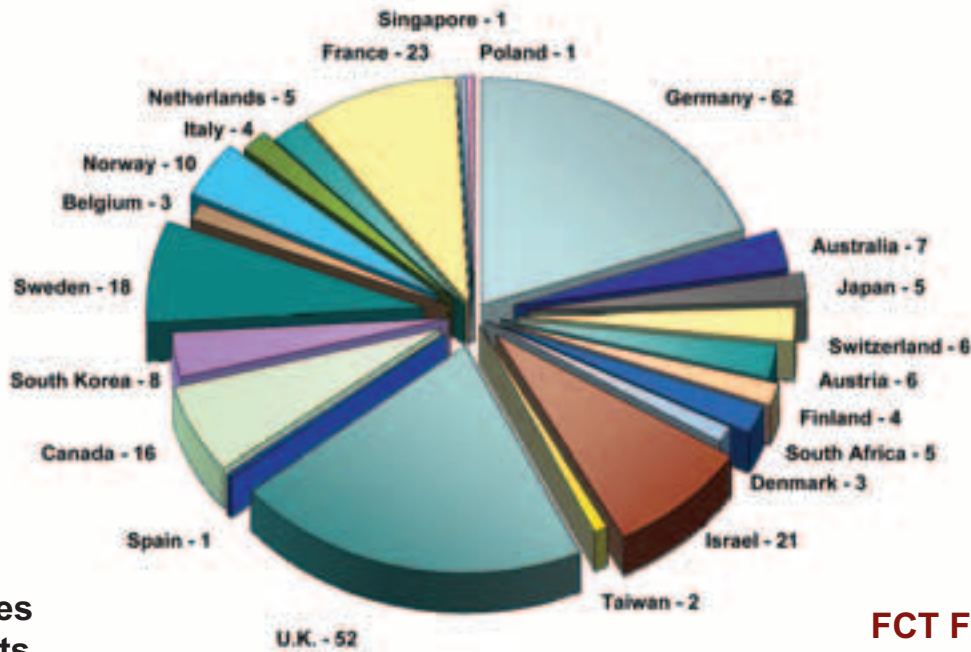
Since its inception in 1980, the Army's FCT and predecessor programs have supported 195 projects with 22 countries and procured 59 items from 12 countries. Although OSD has provided \$215 million in T&E funding, the Army has avoided more than \$3 billion in R&D and T&E costs and reduced the average fielding time for procured systems by 5 years.

### Success Stories

Over the years, the Army FCT program has enjoyed the successful qualification, procurement, and deployment of a wide range of equipment and material, including support to our troops in Iraq and Afghanistan. The following are a few examples of that success:



The EAPS is an FCT program success story. When used on helicopters flying in dusty or sandy environments, the EAPS can significantly increase engine life because it decreases erosion of engine components. (U.S. Army photo.)



**22 Countries**  
**195 Projects**  
**28 Years**

**FCT Funding**  
**Received — \$215 million**

**Figure 1. International Participation in Army FCT 1980-2008**

Developed by Aleris of Germany, the aluminum alloy 5059 (AA5059) offers greater ballistic and blast protection for armored hull-type vehicles. Because it can be readily welded and offers superior corrosion resistance, the alloy was an excellent candidate material for a wide range of applications. The Army uses AA5059 in the RG-33 Mine Resistant Ambush Protected (MRAP) vehicle that is deployed in Iraq, and the alloy is being considered for other programs as well. In addition to protecting our warfighters, the lighter weight of AA5059 means greater fuel economy and enhanced system performance, and the decreased rate of corrosion lowers overall life-cycle costs. More than 2,000 RG-33 MRAPs have been fielded.

The Army FCT program has enjoyed the successful qualification, procurement, and deployment of a wide range of equipment and material, including support to our troops in Iraq and Afghanistan.

The engine air particle separator (EAPS) for the CH-47 cargo helicopter is manufactured by Pall Aeropower Corp. of the United Kingdom (U.K.) at its U.S. location in New Port Richey, FL. The EAPS swirls engine inlet air at a high velocity to separate particulate matter via centrifugal force. When used in dusty or sandy environments, the EAPS can significantly increase engine life because it decreases erosion of engine components, thus reducing engine repair costs. The EAPS currently in use is a “long can” design that must be moved before engine maintenance or inspections. The Pall Aeropower design is a “short can” that can remain in place during maintenance. The CH-47D and its replacement, the CH-47F, are flying with EAPSs. All CH-47s in Iraq are

now flying with the short can EAPS, which increases operational readiness and supports flight safety. There are approximately 130 sets of EAPS deployed in Iraq and Afghanistan, in the training pipeline, and/or assigned to both Active and Guard/Reserve units for their training/operational use. Total inventory is approximately 200 sets with more being procured. Many more experienced pilots are flying with EAPS and less maintenance man-hours are being performed on the T-55 engine.

The Buffalo mine-protected clearance vehicle was developed by Denel-Mechem (South Africa) for mine-clearing operations, especially improvised explosive devices. The blast-resistant vehicle protects Soldiers and is in operation throughout Iraq. After FCT qualification in 2002, the first two production units were deployed in support of another FCT success, the interim vehicle-mounted magnetic mine detection (IVMMD) system.

The GID-3 developed by Smiths Detection (formerly Graseby Dynamics, U.K.) was selected to fulfill the automatic chemical agent detector alarm (ACADA) requirement and was first procured in 1998. The sensitive detectors of the GID-3 can remotely detect chemical agents, including nerve agents that the previous detector could not. The ACADA's advanced power supply was qualified by the FCT program because of its improved reliability and significant weight reduction. ACADA is the standard detector for all Army units and is deployed worldwide. It also protects domestic installations, including the Pentagon. The services liked the ACADA and it became the Joint Force's standard chemical detector. There were approximately 5,300 ACADAs bought and fielded in FY07 and approximately 1,000 in FY08. The ACADA has been replaced by the Joint Chemical Agent Detector in FY08 and beyond.

The Gun-Laying and Positioning System (GLPS) developed by Leica

Heerbrugg (Switzerland) significantly improves the capability of our warfighters to quickly and accurately position and survey a battery of howitzers. It uses a Global Positioning System receiver with satellite input to provide a very accurate position and reduce gun-laying time by more than one-third. GLPS is currently deployed throughout Iraq. There are 511 systems currently fielded and there have been no reliability issues reported to date. The GLPS is the primary system the Soldiers prefer to use for aligning their guns. It is currently manufactured by Vectronix in Virginia.

Standard Advanced Dewar Assembly (SADA) Type II and the One Watt Linear Drive Cooler successfully qualified for the Army's Horizontal Technology Insertion program. SADAs, which offer optical improvement, were developed by SOFRADIR of France; the One Watt Linear Drive Coolers were developed by AEG Infrarot Modules of Germany. These items (with advanced second-generation

forward-looking infrared systems) provide unequaled day and night, all-weather capability to engage targets and provide situational awareness in the platform sights of the Abrams tanks and Bradley Infantry Fighting Vehicles that were deployed in support of *Operations Enduring* and *Iraqi Freedom*.

The Army has spent \$5 billion in procurements as a result of FCT projects. The FCT funds are provided to T&E foreign nondevelopmental items with intent to procure and field items that test successfully. Funds are provided by the OSD CTO, which provides the opportunity for the services and SOCOM to submit proposals to compete for the funds. The services/SOCOM programs of record conduct the T&Es and pledge future funds to both procure and sustain the technology successfully resulting from the tests.

Through its FCT program, the Army has successfully met its key objectives to improve warfighter capability, accelerate fielding, and save taxpayer funds. FCT acquisitions of ammunition, electronic and communication equipment, power equipment, vehicles, and camouflage have enjoyed an outstanding track record for supporting the warfighter and contribute significantly to the fight against terrorism.

**KAREN M. WILSON** is a member of the Army Comparative Testing Team, RDECOM, Global Operations and Support Directorate. She is responsible for the program management of specific Army service level FCT program and DAC program proposals and projects. Wilson holds a B.S. in business management from the University of Maryland, University College, is Level III certified in program management, and is a certified Lean Six Sigma Green Belt.

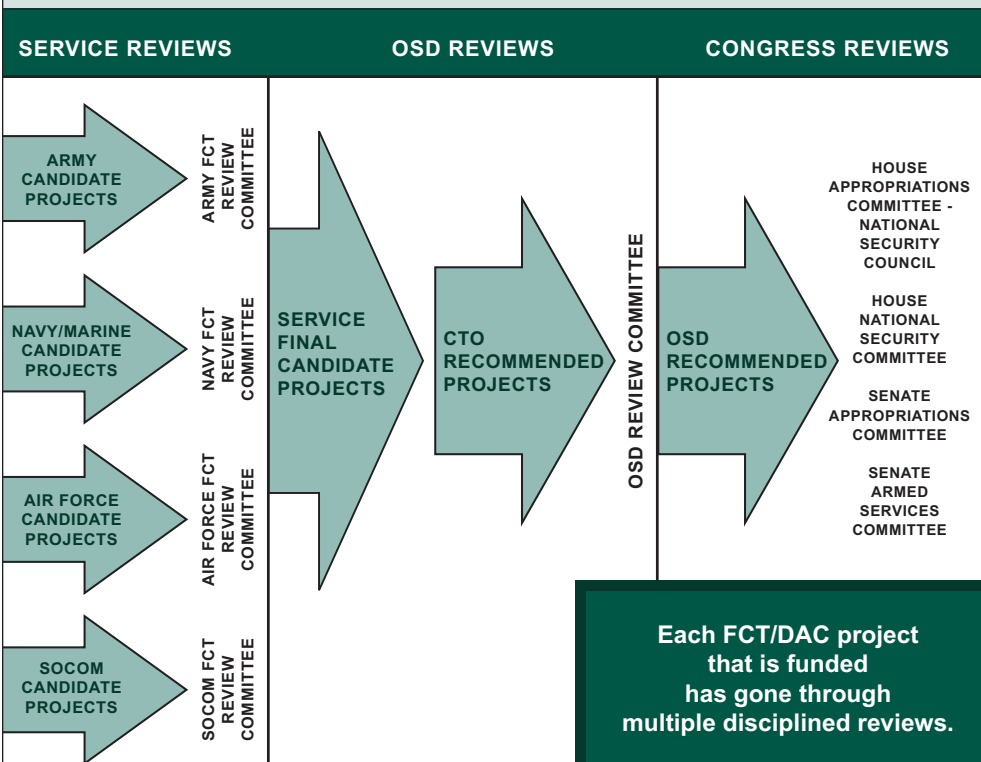


Figure 2. Project Selection Process

# An International Acquisition Career Path

D.T. Tripp and Roy Wood

**O**ur Nation's leaders have set international cooperation in defense operations and system acquisition as a high priority. At a White House news conference, Nov. 4, 2004, President George W. Bush articulated three significant goals for his second term: fight terrorism, promote democracy, and build effective multinational and multilateral institutions that can support effective multilateral action when necessary. In October 2007, Secretary of Defense Robert Gates reinforced those goals at a speech delivered to the Association of the United States Army, by saying, "arguably the most important military component in the war on terrorism is not the fighting we do ourselves, but how well we enable and empower our partners to defend and govern their own countries."

The IACP structure aligns the complexity of working in the international environment with the context of the primary functional disciplines of an acquisition workforce. Here, CPT Shari Carter, 401st Army Field Support Brigade (AFSB) (Forward) Logistics Officer, encourages U.S. Army civilian Leautry Pierce, 3rd Battalion, 401st AFSB, before he undergoes the Individual Skills Assessment exercise of the Combat Lifesaver Course at Bagram Airfield, Afghanistan. (U.S. Army photo.)





Then-Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) Kenneth Krieg captured the challenge this way: “Armament cooperation programs strengthen the military and industrial relationships that bind our Nation with our partners in strong security coalitions.” Indeed, DOD policy directs the acquisition workforce to “pursue international armaments cooperation to the maximum extent feasible, consistent with sound business practice and with the overall political, economic, technological, and national security goals of the United States,” (*DoD Directive 5000.01*).

Done well, international cooperation spreads the cost and risk of developing complex defense systems across several nations. It can also allow access to the best technology worldwide, ensure interoperability among allied and coalition warfighters, and encourage understanding and strengthen ties with our allies.

Yet international cooperation is complex. Programs must navigate a complicated and often confusing web of legal and regulatory requirements and processes. The transfer of defense technology to an international partner invokes regulations for arms

and technology transfers, which are subject to export control laws and require U.S. State Department permission. The sharing of dual-use technologies can also entail gaining the Department of Commerce’s permission. Even technical discussions among allies must be covered by appropriate legally binding agreements or other authorizations.

How, then, can the Defense Acquisition Workforce (DAW) navigate the maze of legal and regulatory requirements to support the international cooperation priorities set out by our national leadership? What

organizational support and training is available to equip the DAW to meet those requirements? DOD's track record suggests we have yet to overcome these hurdles and realize the goal of robust international cooperation in many of our major programs. Thankfully, things are changing.

## Background

In 1990, the *Defense Acquisition Workforce Improvement Act (DAWIA)* provided a legal mandate to structure and provide the DAW with the best possible practitioner training. That training has been the foundation of an extraordinarily successful workforce management strategy.

*DAWIA* required the Secretary of Defense to designate all acquisition-related positions within DOD, specifically including positions within 11 functional career fields (contracting, program management, etc.). *DAWIA* also outlined the education, training, and experience necessary for acquisition certification and career progression within those functional disciplines.

Although "joint development and production with other government agencies and foreign countries" was among the functional disciplines identified in *DAWIA*, for 17 years, no separate, formal career path was established for international acquisitions. The reason for this is clear: managing a program — even without international partner involvement — requires a strong acquisition team; the peculiarities of an international acquisition simply add complexity for that team, from program management to contracting and business management. To be successful, each function of the acquisition team must understand the legal and regulatory implications of working with a foreign partner. Training in the nuances of international

cooperation should, ideally, be available across the multiple acquisition career fields.

## Developing International Acquisition Training Within DAWIA

*DAWIA*'s strength is based, in part, on identifying and developing specific training curricula that are linked to required career field "competencies" — the knowledge, skills, and abilities necessary for individuals to perform at the desired level of proficiency for a particular job. No unique competencies for international acquisition were initially identified in *DAWIA*; therefore, clear guidelines for effective training were not established. Intuitively, DOD recognized the need for international cooperation training, developed courses, and made them available to individuals who wanted to attend. Without an identified requirement, however, much of the curricula was ad hoc.

In June 2007, the USD(AT&L) directed the development of a new international acquisition career path (IACP). The terminology — "career path" versus "career field" — is important. The international career path eventually will be a supplement to other functional acquisition career fields. International competencies that are tailored to the different career fields will be identified, with appropriate training developed and ultimately deployed. The IACP structure aligns the complexity of working in the international environment with the context of the primary functional disciplines of an acquisition workforce.

## IACP Deployment

As a first step, USD(AT&L) decided to develop and deploy an IACP within the program management career field. An integrated process team (IPT) was formed to identify the appropriate

international competencies that program managers must possess if they are to effectively work within an international environment. The IPT then developed the appropriate training for the new career path option.

The IPT included representatives from the Office of the USD(AT&L) (OUSD(AT&L)), the Army, U.S. Navy (USN), U.S. Air Force (USAF), Missile Defense Agency, Defense Technology Security Administration, and the Defense Security Cooperation Agency as represented by the Defense Institute of Security Assistance Management and the Defense Acquisition University (DAU). This team forms the core of an ongoing working group that supports the OUSD(AT&L) Director for International Cooperation, who is the functional advisor for the new career path and ultimately responsible for implementing and overseeing it.

## IACP Applicability

Current guidelines require that the IACP be applied to acquisition personnel within the program management career field who support international acquisition programs or technology projects for which more than 50 percent of the work is international-related. Here, "international-related" means:

- A program that has been designated by the USD(AT&L) or the component acquisition executive as an international program, or one that has high potential for future foreign military sales or international direct commercial sales.
- A program with a technology development strategy or acquisition strategy that identifies a potential international system or cooperative opportunity.
- An existing program with an international agreement that is pending or is in force.



USD(AT&L) developed and deployed an IACP within the program management career field. The IPT for this project developed the appropriate training for the new career path option. (Stock photo.)

- A program associated with an international sale, lease, or logistics support of U.S. defense equipment.

These criteria are the guidelines of a survey being circulated in the next several months. The responses to that survey will more accurately characterize the number and position of people along the IACP.

## DAU IACP Training

The new program management IACP has three levels of international training courses offered at DAU. Three online training modules are required at Level I: *International Armaments Cooperation*, Parts 1, 2, and 3. Each of these self-paced modules is approximately 2 hours in length. Level II training requires the completion of two additional online modules and two 1-week residency courses. The 2-hour online modules are *Information Exchange Program DOD Generic for RDT&E* [Research, Development, Test, and Evaluation] and *Technology Transfer and Export Control Fundamentals*. The residency courses are the *Multinational Program Management Course* (PMT 202) and *International Security and Technology Transfer/Control Course* (PMT 203). Level III

of the program management IACP requires the completion of a 1-week residency course, *Advanced International Management Workshop* (PMT 304). (The 2009 DAU catalog, available at [www.dau.mil](http://www.dau.mil), contains the additional course training requirements for the program management IACP.)

It is important to note that these courses for the IACP are in addition to all training requirements for the program management career field. However, the IACP course requirements represent only 10 hours of online training and 3 weeks of resident training to attain IACP Level III competency.

## IACP Utility

By establishing the IACP, specific acquisition workforce billets can be coded as international program management positions, thus requiring individuals to possess both career field and IACP qualifications to fill important positions within international cooperative programs. It also gives certified personnel significant prominence and helps senior management select appropriately qualified individuals to lead those international programs. This should effectively solve the historical problem of insufficient training and enable tomorrow's acquisition teams to be more proactive when seeking allied participation in important defense programs.

## Adapting IACP Elements to Other Career Fields

The program management IACP is the first step in addressing international acquisition disconnects across the DAW. The long-term objective is to assess the competency requirements and training needs within the remaining nine acquisition career fields identified in *DAWIA*. When complete, the expanded IACP will enable and

empower the entire acquisition workforce through improved training and career development, making them more knowledgeable of the processes and implications for international programs.

The educational structure is in place to implement the new career path, and elements will evolve over time as the needs of international acquisition professionals are refined. The IACP is sure to improve acquisition outcomes and meet the policy intent of greater cooperation with key allies. In the end, effective sharing of the advantages and burdens of defense developments with international partners will benefit the American taxpayer, as well as U.S., allied, and coalition warfighters.

**D.T. TRIPP** is the Director of International Programs for DAU. He holds a B.S. in civil engineering from the University of Wyoming and an M.P.A. from Troy State University. He is Level III certified in program management and has experience in both security assistance and armaments cooperation. He is a retired USAF colonel fighter pilot.

**ROY WOOD** is the Dean of the Defense Systems Management College, School of Program Managers at DAU. He has a B.S. in computer science from Texas A&M University, an M.S. in electrical engineering from the Naval Postgraduate School, an M.B.A. from the University of Phoenix, an M.S. from the Industrial College of the Armed Forces, and is completing his doctoral dissertation for a Ph.D. from Capella University, expected in 2009. He is Level III certified in program management and systems planning, research, development, and engineering. Wood is a retired USN engineering duty officer and a DOD Acquisition Corps member.

# Setting Acquisition, Logistics, and Technology Conditions for Afghanistan

Ben Ennis

Afghanistan is characterized by mountainous and rugged terrain, and the Army must take into account these challenges when fielding and sustaining weapon systems and equipment. Here, U.S. Army Soldiers descend a ridge line during a dismount patrol near FOB Lane in Afghanistan's Zabul Province, Feb. 26, 2009. (U.S. Army photo by SSG Adam Mancini.)



In Afghanistan, the climate variation is immense. Soldiers must deal with an extreme range of temperatures, ranging from 12 to 17 F in winter and 110 to 120 F in summer. Here, U.S. Personnel Security Detail Soldiers from Alpha Co., 1st Platoon, 101st Airborne (Ab) Division (Div.), provide security in the extreme cold climate in Bagram, Afghanistan, Feb. 15, 2009. (U.S. Army photo by SGT Prentice C. Martin-Bowen.)

Mr. Dean G. Popp, the Army Acquisition Executive/Acting Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT), and GEN Ann E. Dunwoody, Commanding General, U.S. Army Materiel Command (AMC), recently traveled to Afghanistan to set conditions for the successful influx of troops in theater, including weapons systems and equipment needed to accomplish the mission.

“We are committed to providing our Soldiers with the right weapons systems and equipment for success on the battlefield. These are very harsh conditions and our military is continuing to adapt,” said Mr. Popp.

While in Afghanistan, Mr. Popp and GEN Dunwoody visited numerous acquisition and logistics organizations and support personnel, to include the Bagram Regional Contracting and Business Office. Mr. Popp cited the contracting office personnel efforts at the Bagram office as a good example of the enterprise approach at work, setting the conditions for success. The contracting office is in the process of adding contractors and focusing on developing onsite contracting officer’s representative (COR) training and also transitioning from Logistics Civil Augmentation Program III (LOGCAP III) to LOGCAP IV.

During their visit to one of the Army Field Support Brigades (AFSBs), Mr. Popp and GEN Dunwoody talked with the embedded acquisition support personnel about their duties. Currently, there are 4,000 acquisition professionals (military, Department of the Army civilians, and contractors) in theater supporting the warfighter mission. These professionals are coordinating with program managers (PMs) to get the right equipment and systems to units and help with science and technology (S&T) priorities. Mr. Popp echoed how proud he is of the great things that the AFSBs and Program Executive Office (PEO) community are doing to support our Soldiers as they fight and simultaneously nation-build. Below are some examples of PEO contributions to overseas contingency operations.

### **Program Executive Office, Intelligence, Electronic Warfare, and Sensors (PEO IEW&S)**

Throughout Afghanistan, systems and equipment fielded by PEO IEW&S are protecting U.S. and coalition forces and assisting in tracking down enemy fighters by thickening the intelligence, surveillance, and reconnaissance coverage of the area of operations. Daily monitoring for insurgents is made possible with detection equipment, and communications with Afghan locals will be easier with various translation systems.

### **Program Executive Office, Command, Control, and Communications Tactical (PEO C3T)**

The Army’s PEO C3T is providing a vast range of support for operations in Afghanistan in every aspect, from equipping and training units in preparation for deployment to around-the-clock reachback field support and reset of units upon redeployment. PEO C3T embeds digital systems engineers in direct support of their assigned brigade combat team, which ultimately deploys with the unit into Afghanistan. Mr. Popp highlighted the example of COL David Moore, the Liaison Officer for PEOs C3T and IEW&S in Afghanistan, where he works directly with units and U.S. Forces Afghanistan as a team to support operations. Moore is coordinating efforts with the 401st AFSB and the U.S. Army Communications-Electronics Command Life Cycle Management Command Electronic Systems Sustainment Centers to dovetail PEO C3T support into their framework.

### **Program Executive Office, Soldier (PEO Soldier)**

PEO Soldier will establish additional fielding sites in Bagram and Kandahar to field the Common Remotely Operated Weapon Stations, which provide



The Bagram Regional Contracting and Business Office assists Soldiers by providing acquisition and logistics support. Here, a U.S. Soldier pulls security duty in Bagram, Feb. 15, 2009. (U.S. Army photo by SGT Prentice C. Martin-Bowen.)

Soldiers with the ability to acquire and engage targets while inside a vehicle, protected by its armor. Additionally, PEO Soldier is focused on the equipment of the troops. For instance, each Soldier deploying to Afghanistan will be issued mountain boots, which provide improved ankle support and stability for use in the rugged terrain of Afghanistan's countryside. The Winter Army Combat Shirt with Integrated Patch Kit program addresses the capability gap identified by organizations and Soldiers operating in this cold weather terrain. PEO Soldier has also fielded more than 300 sets of the Enhanced Night Vision Goggles to 10th Mountain Div. Soldiers bound for Afghanistan.

### Program Executive Office, Enterprise Information Systems (PEO EIS)

Several hundred PEO EIS staff personnel work in Iraq and Afghanistan to install, operate, and maintain communications, logistics, personnel, and intelligence systems for the Army and defense forces. In one of these projects, PEO EIS Product Manager Joint-Automatic Identification Technology (PdM J-AIT) is assisting redeploying

units to equip containers with identification (ID) tags to minimize pilferage of containers and enhance force protection. PdM J-AIT provides procurement and technical services that support focused logistics, total asset visibility, and the integration of global supply chains. PdM J-AIT is

also equipping all current and future forward operating bases (FOBs) with radio frequency ID equipment.

### Program Executive Office, Missiles and Space (PEO MS)

PEO MS provides support to Soldiers in Afghanistan through Warrior-A Unmanned Aircraft System (UAS) HELLFIRE Missile weaponization. The Joint Attack Munition Systems and UAS project offices are currently weaponizing the Warrior-A UASs in the Afghanistan theater.

Another example of PEO MS support is the Video from UAS for Interoperability Teaming-Level 2 (VUIT-2) for Apache technology. VUIT-2 provides Apache aircrews with real-time streaming battlefield video and metadata from UAS on cockpit multipurpose displays. "VUIT-2 has proven its worth in combat operations," said COL Eric Peterson, Brigade Commander, 10th Combat Aviation Brigade.

### Program Executive Office, Ground Combat Systems (PEO GCS)

PEO GCS has deployed towed howitzers to the Afghanistan theater. The M777A2 Towed Howitzer provides great firepower, is helicopter-transportable, and is programmed to fire the Excalibur precision-guided munition. The M119A2 Towed Howitzer also provides critical fire support to infantry units.

PEO GCS also provides a variety of robots for maneuver forces. Examples include the xBot, a small reconnaissance robot with a manipulator arm for maneuver forces, and the Do-King MV-4, a route-clearance mini-flail. The PEO GCS Joint Robotic Repair and Fielding (JRRF) Activity, currently



Mr. Popp and GEN Dunwoody are determined to be key enablers to our Soldiers by identifying their needs. Here, U.S. Personnel Security Detail Soldiers from Alpha Co., 1st Platoon, 101st Ab Div., conduct a security patrol near Bagram, March 10, 2009. (U.S. Army photo by SGT Prentice C. Martin-Bowen.)



Mr. Pops and GEN Dunwoody receive a briefing about the capabilities of the UAS shown in the photo. (Photo by COL Jonathan A. Maddux, ASAALT Chief of Staff.)

manned by U.S. Army Reservists, repairs all robots within Afghanistan. The JRRF was stood up under a Memorandum of Agreement with AMC for direct repair of ground robots within theater.

### **Program Executive Office, Ammunition (PEO Ammo)**

To execute equipment fielding to Afghanistan, PEO Ammo enables its PMs to directly coordinate the development of the operational needs statement, fielding and sustainment strategy, the technology deployment plan, end user safety statements, urgent materiel releases, Soldier safety confirmations, and theater clearances. Coordination at the area of responsibility level commences with Combined Joint Task Force-101 and Task Force Paladin, with detailed coordination with the AFSBs and the Coalition Engineer Cell elements. The ASAALT Liaison Officer and the AMC S&T Advisor are also included, as well as sister PdMs, such as PdM Improvised Explosive Device (IED)

Defeat/Protect Force and PdM Assured Mobility Systems.

The role of the S&T Advisor within the AFSB has been instrumental in facilitating PM efforts within Afghanistan. The AFSBs further assist PMs as they extend their efforts to outlying FOBs. All life-support functions required at these FOBs, such as the use of facilities for systems fielding and maintenance, are coordinated through the S&T Advisor for implementation into the AFSB. The S&T Advisor further assists the PMs by providing initial points of contact to begin coordination with receiving units.

PEO Ammo's PMs have provided both route-clearance and area-clearance equipment to the warfighter. PEO Ammo has also provided the XM982 Excalibur 155mm precision-fired cannon artillery round in response to an Urgent Need Statement for 155mm precision fires.

### **Program Executive Office, Combat Support and Combat Service Support (PEO CS&CSS)**

PEO CS&CSS is responsible for more than 300 systems that provide support to Soldiers. Within the Afghanistan theater, the PEO has four different PMs. During their travels in Afghanistan, Mr. Pops and GEN Dunwoody visited with the PEO CS&CSS PM Mine Resistant Ambush Protected (MRAP) team. The MRAP team in Afghanistan is composed of military, government civilians, and contractor personnel united in a common purpose — to put survivable vehicles in the hands of our warfighters. Multiple missions will be supported by the MRAP fleet to include reconnaissance, convoy operations, troop transport, ambulance, combat engineer, and explosive ordnance disposal missions for maneuver units.

Mr. Pops asserted that success requires an enterprise-focused culture and full commitment by the ASAALT and AMC leadership. He emphasized that the enterprise approach will acknowledge the acquisition function as defined by law, but will also seek to establish a common framework and clarify working relationships.

The following pages highlight the visit to Afghanistan by Mr. Pops and GEN Dunwoody.

**BEN ENNIS** is the Strategic Communications Chief at the U.S. Army Acquisition Support Center. He has a B.S. in business from the University of Colorado and an M.B.A. in marketing from Atlanta University. Ennis is a former Army Reserve Advertising Chief and has attended numerous military schools, including the U.S. Army Command and General Staff College and Defense Information School.

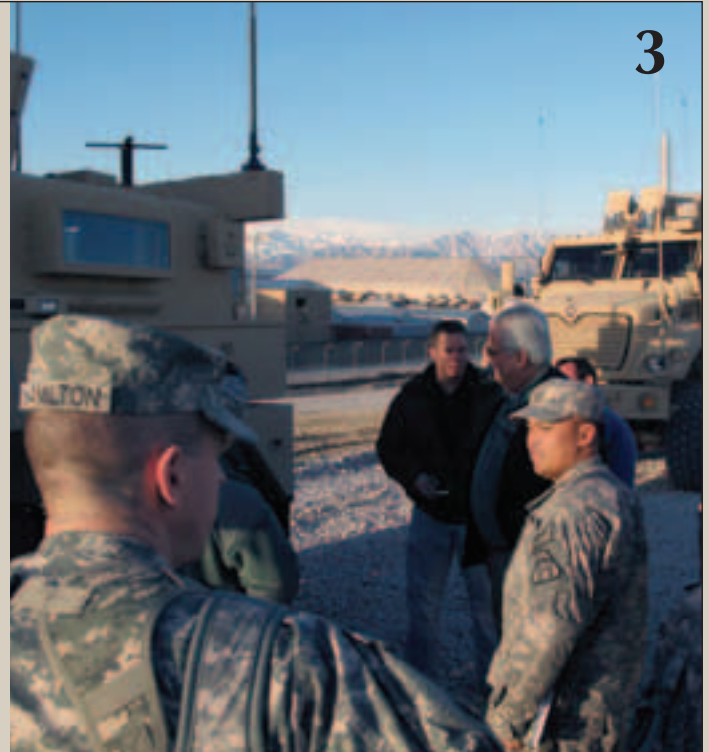
1



2







- 1-3.** Mr. Poppins and GEN Dunwoody receive briefings about the MRAP vehicles being deployed in defense against IED threats. PEO CS&CSS is responsible for developing, acquiring, and fielding ground combat vehicles such as MRAPs. (Photo by COL Jonathan A. Maddux, ASAALT Chief of Staff.)
- 4.** PEO CS&CSS is working to field MRAPs to Soldiers in Afghanistan to ensure they are protected from IED threats. Here, a U.S. Army security force convoy travels in MRAPs to Gardez City, Afghanistan, for meetings with local officials. (Photo by Fred Baker, Office of the Secretary of Defense (OSD).)

1



1. Mr. Papps and GEN Dunwoody pose with Army senior leaders in front of the Bagram Regional Contracting and Business Office. The office is setting the AI&T conditions for success. Among other actions, it will add contractors and develop onsite COR training. (Photo by AFSB MAJ George Steffens.)

2



2-3. GEN Dunwoody and Mr. Popps take turns preparing to launch a UAS. The person not physically launching the UAS holds its control to navigate after launch. (Photo by COL Jonathan A. Maddux, ASAAIT Chief of Staff.)

3



1





2

1. Mr. Popps and GEN Dunwoody pose with a Soldier in front of an MRAP during their recent visit to Afghanistan. PEO CS&CSS is fielding the MRAP to provide Soldiers with defense against IEDs. (Photo by COL Jonathan A. Maddux, ASAALT Chief of Staff.)
2. Mr. Popps speaks with a Soldier stationed in Afghanistan in front of an MRAP vehicle. (Photo by COL Jonathan A. Maddux, ASAALT Chief of Staff.)
3. During his recent trip to Afghanistan, Mr. Popps discusses issues with Army senior leaders. Containers used by Soldiers for various purposes are pictured in the background. PEO EIS' PdM J-AIT is assisting redeploying units to equip containers with ID tags to minimize pilferage of containers and enhance force protection. (Photo by COL Jonathan A. Maddux, ASAALT Chief of Staff.)



3

1





1. ASAALT Chief of Staff COL Jonathan A. Maddux traveled with Mr. Poppo to Afghanistan. Here, COL Maddux boards a Black Hawk helicopter to travel to another Afghan province. (U.S. Army photo.)
2. A doorunner pulls security in a Black Hawk helicopter that transported the ASAALT/AMC team to FOB Shark. Fielding of the Black Hawk is the responsibility of PEO Aviation. (Photo by COL Jonathan A. Maddux, ASAALT Chief of Staff.)
3. Semi-trucks hauling goods to eastern Afghanistan travel along the narrow and dangerous "K-G Pass." This aerial view of the pass illustrates the type of harsh terrain Soldiers face in Afghanistan. (Photo by Fred Baker, OSD.)



## The 26th Army Science Conference: Transformational Army Science and Technology (S&T) — Harnessing Disruptive S&T for the Soldier

Dr. John A. Parmentola and Irena D. Szkrybalo

**I**n his keynote address to attendees at the 26th Army Science Conference (ASC), GEN Peter W. Chiarelli, Vice Chief of Staff of the Army (VCSA), applauded the Army's scientists and engineers and thanked them for all they are doing for Soldiers in harm's way and for those who are wounded. Having spent 2 years of his "recent life" in Iraq, Chiarelli said he saw firsthand the positive impact innovative contributions were making on the battlefield and how the use of these new capabilities by Soldiers "spread like a virus."

Drs. Thomas H. Killion and John A. Parmentola address students participating in this year's Army-sponsored eCYBERMISSION educational outreach program who attended the 26th ASC. (U.S. Army Research Laboratory (ARL) photo by Larry A. Shank.)



He went on to relate the story of how, early in the 20th century, shortly after World War I, two Army majors and personal friends, George S. Patton and Dwight D. Eisenhower, were unable to convince their branch leadership at the time of the radical impact that the tank, an emerging potentially disruptive innovation, would have on the conduct of warfare. Although Eisenhower was threatened with court martial by his superiors if he continued to push the radical idea, this disruptive innovation eventually was adopted by the Army and led to extraordinary successes in World War II and subsequent conflicts. In citing this history, Chiarelli stressed the importance of encouraging, not squashing, the pursuit of disruptive technologies whose application on the battlefield could shift the balance of military power overwhelmingly in our favor.

The 26th ASC was held Dec. 1-4, 2008, in Orlando, FL. Approximately 1,500 representatives of government, academia, and industry from the U.S. and more than 25 nations attended the conference. The ASC is a biennial event inaugurated in 1957 to provide an ongoing and unique Army forum for the presentation and open exchange of ideas and results. The conference also recognizes the accomplishments of scientists and engineers working on issues and challenges of high relevance to the Army.

The 26th ASC theme was “Transformational Army S&T — Harnessing Disruptive S&T for the Soldier.” To address the frontiers of scientific exploration and discovery, leaders of the Army S&T community identified seven areas of science or technology from which disruptive technologies are likely to emerge. The seven areas are autonomous systems, biotechnology, immersive technology, nanotechnology,

network science, neuroscience, and quantum information science. When harnessed in a multidisciplinary approach, these areas could result in disruptive technologies that would potentially offer extraordinary capabilities for our Soldiers.

The 26th ASC was structured around the seven science or technology areas. Thirty-six invited speakers from both the U.S. and abroad, representing government, industry, and academia, addressed a wide range of transformational initiatives in support of our Soldiers’ needs. Among the invited speakers were some of the most illustrious female researchers in their respective fields, who the Army acknowledged for their remarkable achievements in pushing the frontiers of scientific and engineering knowledge and innovation.

### Presentations

In addition to the invited speakers, world-class scientists and engineers from all over the world made oral presentations during 17 Parallel Technical Sessions. Authors of the most outstanding 92 technical papers, down-selected from an original submission of 845, presented during the Parallel Technical Sessions and received special recognition and awards at the closing banquet on Dec. 4. Conference attendees also had the opportunity to view approximately 250 posters covering the best in S&T endeavors of scientists and engineers from across the globe. The posters were staffed by their respective authors throughout the 4-day conference, providing attendees the

opportunity to meet with these outstanding scientists and engineers and discuss their work.

Since 1957, the ASC has grown to become an international event. There has been significant progress in reaching out to the international S&T community, as well as to scientists and engineers concerned with developing militarily relevant innovations for our Soldiers. The International Collaboration Award, inaugurated at the 25th ASC, was also presented at the closing banquet. This award recognizes collaborative research efforts between U.S. Army and foreign scientists and engineers who have expanded and enhanced the Army’s research and technology program, while at the same time benefiting their own nations.

Groundbreaking Army efforts in the seven areas were on display at the conference’s S&T Showcase. These displays represented innovative work being conducted by Army scientists and engineers and their counterparts

Chiarelli stressed the importance of encouraging, not squashing, the pursuit of disruptive technologies whose application on the battlefield could shift the balance of military power overwhelmingly in our favor.

and supported by the U.S. Army Research Institute for the Behavioral and Social Sciences; the U.S. Army Engineering, Research, and Development Center; the U.S. Army Medical Research and Materiel Command; and the U.S. Army Research, Development, and Engineering Command (RDECOM).

Leading off the conference, the ASC audience was treated to a viewing of “The Science of Victory,” a 5-minute video featuring leaders of the U.S. services’ S&T communities and prominent members from



The 26th ASC Warfighter Topical Panel members CSMs Philip F. Johndrow, Hector G. Marin, James E. Diggs, and Jeffrey J. Mellinger are briefed on the Army High Performance Computing Program by RDECOM's Charles Neitubicz. (ARL photo by Larry A. Shank.)

industry and academia, to include a number of Nobel Laureates in the fields of science. Individuals featured in the video collectively made the case of the critical importance of basic research and the people who perform it to providing capabilities that enable DOD to perform its mission and maintain the Nation's warfighting capabilities well into the future.

As the organizer and moderator of the 26th ASC, Dr. John A. Parmentola, the Army's Director for Research and Laboratory Management, opened the conference by welcoming attendees and acknowledging special guests in the audience. These included Soldiers who, in their service to the Nation, were seriously wounded. The Soldiers were introduced and applauded for their sacrifice, great courage, and heroism. Also introduced were seven winners of the Junior Science and Humanities Symposium, a triservice-sponsored science competition, who presented their prize-winning research during a number of the Parallel Technical Sessions throughout the week. Also

acknowledged were 140 students from the Orlando public schools participating in this year's Army eCYBERMISSION S&T competition.

In his introductory remarks, Parmentola said, "We in the scientific community have learned an important lesson in the last decade — that leveraging scientific discoveries and knowledge across scientific disciplines and approaches can bring about extraordinary new capabilities. The biotechnology revolution has its origins in the synergy derived from biology, the physical sciences, computer technology, and information science. We are also beginning to see this happening in network science and neuroscience. The synergies gained in these areas will be profound, involving applications for new forms of social networking, new computer architectures, autonomous systems with human-like characteristics, virtual environments essentially indistinguishable from real environments, biotechnology, and clinical medicine."

Parmentola went on to introduce the sponsor of the 26th ASC, Dean G. Popps, Acting Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT) and Army Acquisition Executive. In his videotaped welcome to the audience, Popps praised the scientific community for leading the way in providing new and innovative capabilities to win wars. He urged conference participants to listen, imagine, share ideas, and challenge one another. Popps said that our American Sol-

diers must never merely be in a fair fight. They must have the technological advantages to see first, kill first, and win always, regardless of the environment they're in or the number of enemies they face. "We must ensure that we are always, and forever will be, in reality and in worldwide perception, a high-technology Army," said Popps.

Popps was followed by the Honorable Nelson M. Ford, Under Secretary of the Army, who video teleconferenced his remarks from the Pentagon. In his address, "Harnessing Imagination — The Ultimate Disruptive Technology," Ford cited examples of disruptive strategies and technologies currently adapted and applied to the battlefield. All of these entrepreneurial solutions shared a common thread — imagination. Ford reiterated the Army's commitment to basic research and funding. He stressed that the Army's ongoing support of S&T ensured and encouraged imagination — a key ingredient essential to the development of disruptive technologies. Ford's speech was followed by

Army S&T leadership presentations and a Warfighter Topical Panel titled "Technology and the Warfighter."

Over the final 3 days of the conference, keynote presentations on disruptive technologies were made by world-renowned female scientists. Their presentations were followed each day by topical panels comprised of subject matter experts who addressed potential applications of the same disruptive technologies. The keynote speakers and topical panelists stressed the importance of the profound synergies to be gained in taking a multidisciplinary approach to research and technological development. These synergies hold great promise for the emergence of disruptive technologies that could provide unprecedented new capabilities for the Soldier.

### Awards and Closing Ceremony

The awards banquet and closing ceremony, hosted by Dr. Thomas H. Killion, Deputy Assistant Secretary of the

Army for Research and Technology and Army Chief Scientist, concluded the 26th ASC. Following the presentation of colors by the 3rd U.S. Infantry (The Old Guard) and a rousing musical program by The Army Strings, attendees were treated to an interesting and inspiring presentation by Dr. Joel Primack, Professor of Physics at the University of California, Santa Cruz, and his wife, Nancy Ellen Abrams, a lawyer, scholar, writer, singer, songwriter, and artist. Primack and Abrams co-authored "The View from the Center of the Universe — Discovering our Extraordinary Place in the Cosmos," which they addressed in tandem in an oral and video presentation at the banquet.

There has been significant progress in reaching out to the international S&T community, as well as to scientists and engineers concerned with developing militarily relevant innovations for our Soldiers.

The presentation of awards by Killion and Parmentola was the closing event of the final evening. Authors of the most outstanding papers in each of 17 technical categories received Best Paper

Awards. Four of the 17 best papers were additionally selected as the highest quality research efforts presented at the conference. Authors of the overall best paper received the Paul A. Siple Memorial Award, while authors of the next three Best Papers received bronze medallions. The International Collaboration Award was presented to the

authors whose work was selected by a panel of scientific peers as the most outstanding collaborative research effort between U.S. Army and foreign scientists. For speaker biographies and information on their talks, names of award winners and titles of their papers, paper and poster manuscripts, and other information, visit the 26th ASC Web site at [www.asc2008.com](http://www.asc2008.com).



VCSA GEN Peter W. Chiarelli and Dr. Thomas H. Killion, right, discuss flexible display technologies with Dr. Greg Raupp of the Flexible Display Center and ARL's Dr. Eric Forsythe. (Photo by Richard Mattox, Program Executive Office Command, Control, and Communications Tactical.)

#### DR. JOHN A. PARMENTOLA

is the Director for Research and Laboratory Management, Office of the ASAALT. He has a B.S. in physics from the Polytechnic Institute of Brooklyn and a Ph.D. in physics from the Massachusetts Institute of Technology.

IRENA D. SZKRYBALO is a Senior Technical Consultant with Dynetics Inc. She has a B.S. in aeronautical engineering from Wayne State University and an M.S. in commercialization of S&T from the University of Texas-Austin.

Pictured is a Stryker RV with a ballast kit (red plates) to represent an MGS variant. (U.S. Army photo courtesy of AMSAA.)

# Using Multibody Dynamics Models to Determine Ballasting of Stryker Vehicles to Support Physical Testing

Dorothy Foley and Lane D. Salins

**A**n innovative and unexpected application of multibody dynamics model to support physical testing of Stryker vehicles has been developed and used by the U.S. Army Materiel Systems Analysis Activity (AMSAA) in support of the Stryker Project Management Office (PMO). Project managers (PMs) and their support staff can use physical testing and computer modeling and simulation (M&S) to determine durability and stability limitations of Army vehicles.

Knowledge of these limitations helps guide PMs and their staff in making decisions on numerous issues that influence the life cycle of the vehicles for which they are responsible. Effects such as component resets, part supplies, safety releases, and training efforts are among the many concerns. As a result, there is

a constant demand for fast, accurate testing methods that will embody a wide range of configurations because it is not cost-effective or possible to test each variant under all loading conditions.

## Testing Variants

All too often there are not enough vehicles available for testing, especially when a fleet of vehicles includes several variants, as is the case with the Stryker family of vehicles. To compensate for the short supply of test vehicles, a PMO will often direct test facilities to ballast one variant of a particular fleet to represent another variant. Testing is usually conducted on variants that are the most prevalent or variants that are considered to be the worst-case loading configurations. Three very important physical characteristics indicate whether one system is a good representation of another: weight, center-of-gravity (COG) location, and moments of

inertia (MOI). The goal of ballasting is to match these three physical characteristics of one variant to represent another. AMSAA uses multibody dynamics modeling to accomplish this during the model development phase for component-level durability simulations, as well as stability and handling analyses to support PM decision making. In addition, this enables AMSAA engineers to cover the full spectrum of load configurations for a fleet of vehicles.

The system's COG is a single point in space about which the vehicle freely rotates, or the point on the vehicle where you could balance it regardless of its orientation in space. MOI account for the weight distribution during rotation about a body's axes of revolution. MOI are significant characteristics because the weight and the COG location are not enough information to accurately analyze the stability and

handling of any vehicle. For example, a baseball and a hockey puck have roughly the same weight and COG location. However, because of their different shapes and resulting mass distributions, their MOI are very different. This concept applies to vehicles with vastly different weight distributions, such as a Stryker Reconnaissance Vehicle (RV) compared to a Stryker Mobile Gun System (MGS) variant, and has significant ramifications for vehicle handling, reliability, and rollover characteristics.

When making recommendations, engineers and analysts must ensure that the vehicles are properly represented. The correct MOI, along with the weight and COG, provide a more accurate representation of the variant to be emulated in testing. However, the problems that a PM's staff can encounter with collecting these parameters are that of time and manpower. It is a time-consuming process to obtain the vertical COG location and inertia values. Test engineers typically resort to a partial list of these values; namely, they collect the COG location in the longitudinal and lateral directions. Fortunately, these values can be easily estimated from the weight and distance of each wheel station from a common reference. Per an engineer from the Stryker prime contractor, it takes about 1 day to manually ballast a Stryker vehicle. Only the system's weight and two of the three components of the system COG location are considered in the process. The vertical COG and all inertia values are estimated only once near the start of the ballast design process with computer software. Therefore, the results may not be an accurate representation of the real vehicle. This is where the application of multibody dynamics modeling can be most advantageous.

## Software

A ballast kit analysis can be conducted by an iterative process using several engineering software tools that include MATLAB® Computing Language, Pro/ENGINEER 3D solid modeling, and Dynamic Analysis and Design System (DADS) multibody dynamics. This method was used during testing of a Stryker RV variant that was ballasted to emulate an MGS variant. The method consists of first establishing a baseline dynamics model of the variant to be emulated at full combat weight based on field or test data. In this case, it was the Stryker MGS variant. This is the most critical point of the analysis for maintaining accurate results because the weight, COG location, and MOI must reflect an actual fielded vehicle to extrapolate to an accurate representation of the up-weighted vehicle.

Second, the model is up-weighted by adding mission equipment packages and/or armor kits, such as slat armor. The weight, COG location, and inertia results of the up-weighted model are calculated by simulation and acknowledged as the parameters that must be reproduced for the test vehicle and working model. Next, a baseline dynamics model of the variant that will be ballasted is established based on parameters from the vehicle at the test facility. Then, the ballast kit is incorporated and the simulation is conducted. If the COG location is incorrect, the ballast kit is adjusted by rearranging or removing some of the individual masses, recalculating the mass and inertia properties of the computer-aided design geometry, and then importing the data into the dynamics model for simulation. A quasi-static settle simulation run is conducted to get the overall vehicle weight, the weight at each wheel station, and the vertical distance at which the vehicle settles, so the COG location can be calculated. The system

COG location is calculated using DADS and Microsoft® Excel.

Finally, the system inertias are calculated using MATLAB. The ballasted model is adjusted until the COG and inertias match the parameters from the up-weighted model, which may take several iterations. When all the parameters are within an acceptable range, the ballast kit arrangement is documented, approved, and sent to the test facility as installation guidance.

The described M&S approach to providing more accurate, timely, and affordable testing for the Stryker vehicles has great benefits for the program and can support other Army weapon system programs. These techniques can further shape and optimize the program development, testing, and evaluation strategies of the future.

**DOROTHY FOLEY** is the Deputy Associate Director, PM Stryker, Systems Engineering, Warren, MI. She holds a B.S. in electrical engineering from the University of Detroit and an M.S. in computers and information systems from the University of Detroit Mercy. Foley is a U.S. Army Acquisition Corps member and is Level II certified in systems planning, research, development, and engineering (SPRDE)-program management and Level II in SPRDE-program systems.

**LANE D. SALINS** is a mechanical engineer on the Stryker Physics-of-Failure Team at AMSAA, Aberdeen Proving Ground, MD. He holds a B.S. in mechanical engineering from the University of Maryland and an M.S. in mechanical engineering from Johns Hopkins University. Salins is Level II certified in SPRDE-systems engineering and is pursuing Level III certification.



## From the Acquisition Support Center Director

The Army has designated 2009 the Year of the Noncommissioned Officer (NCO). SMA Kenneth O. Preston said the NCO is “the glue” that holds the Army together. “It’s those NCOs out there every day who are not only successfully supporting [overseas contingency operations]; they’re also the ones who directly influence their piece of the Army by being first-line supervisors. They’re the ones [NCOs] who create command climate and train the Soldiers in their occupational specialties.” I’m proud to report that our U.S. Army Acquisition Corps (AAC) NCOs continue to fill a gap left by an increased operational tempo in acquisition/contracting battlefield requirements. The U.S. Army Acquisition Support Center (USAASC) is resolute in developing strong, viable, and competent leader development and certification programs for our ever-growing AAC NCOs. I invite you to read how the USAASC Enlisted Proponent is accomplishing this mission in articles by SGM Ethan A. Jones on Pages 61 and 65 of this issue. During this year of the NCO, you will see the progression of the AAC NCOs via *Army AL&T* Magazine and *Army AL&T Online* articles.



### Section 852 Army’s Catalog of Opportunities Update

We are in the midst of finalizing our FY09 Section 852 plan for consideration by the Acting Deputy Under Secretary of Defense for Acquisition and Technology. This plan, if approved, will increase the Army’s Section 852 requirement by an additional \$109.7 million. In addition to increasing our throughput capability for numerous training opportunities, USAASC is seeking funds to increase the Army’s surge of new hires in the Student Career Experience Program and at the Intern, Journeyman, and Highly Qualified Expert levels. Additionally, we hope to deploy the Civilian Incentive Program as well as the Civilian Referral Bonus Program. In the near future, watch for the launch of the Congressional Operations Course and an Operational Experience Program at the National Training Center, Fort Irwin, CA. Programs currently available are listed in the Army’s Catalog of Opportunities at <http://asc.army.mil/career/programs/852/default.cfm>. For more information, contact Kelly L. Terry at [kelly.terry@us.army.mil](mailto:kelly.terry@us.army.mil).

### 2009 CDG/AAF Program Orientation and Graduation

With the theme “Developing Our Next Generation of Leaders,” the Competitive Development Group/Army Acquisition Fellowship (CDG/AAF) Program held its annual orientation, graduation, and training in Orlando, FL, Feb. 3-4, 2009. The program, designed to develop future acquisition leaders, provides board-selected Fellows with training that might not otherwise be available to them, such as executive leadership education, experiential, and other career development opportunities, including developmental assignments in the AAC. Orientation activities for the Fellows included two panels of current and former project managers and CDG/AAF Fellows who gave firsthand program insight, other speakers who explained the program’s benefits, and a mentoring briefing by Edward Elgart from the U.S. Army Communications-Electronics Command Contracting Center. The event culminated with a graduation dinner where BG William T. Crosby, Program Executive Officer Aviation, was the honored guest speaker. Crosby congratulated both the current and the graduating Fellows, thanked them for their service, and looked forward to their future leadership goals. If you are interested in applying to the USAASC CDG/AAF Program for the 2010 Year Group, please contact Chandra Evans-Mitchell at (703) 805-1247/DSN 655-1247 or [chandra.evansmitchell@us.army.mil](mailto:chandra.evansmitchell@us.army.mil).

### Acquisition Career Development Learning and Training Opportunities

A key initiative of the Army Acquisition Executive and the Director, Acquisition Career Management, is to grow and enhance the acquisition workforce. USAASC supports this initiative by offering career development learning and training opportunities. In FY09, there are many new training programs available for Acquisition, Logistics, and Technology (AL&T) Workforce members in positions from entry level through key leadership positions. Most programs require that eligible applicants be certified for their current position before applying to the program. For a listing of programs, requirements, and application details, please access the Career Acquisition Management Portal [CAMP] through <https://rda.altess.army.mil/camp/>. Enter through the Career Acquisition Personnel and Position Management Information System [CAPPMIS] and locate the Army Acquisition Professional Development System [AAPDS] to find the applications that you need.

### AAC Annual Awards Call for Nominations

It’s that time of year again where we call for nominations for the AAC Awards. It’s vitally important that we recognize those among us who have distinguished themselves by going

beyond expectations and simultaneously making the AL&T Workforce an even more professional and positive influence for the Army, as well as a great example of acquisition excellence for the American people. For information on nomination deadlines and windows, please see the inside back cover of this issue.



**Craig A. Spisak**

Director, U.S. Army  
Acquisition Support Center



## U.S. Army Acquisition Corps (AAC) Introduces Latest Enlisted Personnel Proponent

*SGM Ethan A. Jones*

With increased military contracting requirements to support warfighters in meeting rapid deployments, sustainability, and Nation building, the Vice Chief of Staff of the Army (VCSA) approved additional contracting force structure “generating force” (GenForce) in a message dated Nov. 10, 2008. Structure was necessary for the initial training, compliance, doctrine, policy, guidance, and oversight for the new Army contracting force structure and the leveraging of capabilities of other Army and DOD organizations involved in the contracting process.

Per directives such as *Army Regulation [AR] 600-3, Personnel Proponent*; *AR 70-1, Army Acquisition Policy*; and *Department of the Army [DA] Pamphlet 600-25 NCO [Noncommissioned Officer] Professional Guide*, the U.S. Army Acquisition Support Center (USAASC), a Direct Reporting Unit to the Office of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT), is the proponent for the military and civilian AL&T Workforce. With the approval of the

GenForce table of distribution and allowances (TDAs), the VCSA approved integration of the 51C enlisted proponent structure into ASAALT and the life-cycle functions of Military Occupational Specialty (MOS) 51C throughout the Army. ASAALT provides uniform guidance for managing positions and career development of the AL&T Workforce through the Army Acquisition Executive (AAE). This guidance includes the designation and identification of AL&T positions; specification of position requirements; attainment and maintenance of AL&T competencies through education, training, and experience; management of the AAC selection and placement of personnel in AL&T positions; and workforce metrics.

The AAE has designated the Principal Military Deputy (MILDEP) to the ASAALT as the Director, Acquisition Career Management (DACM). The DACM directs the AAC and assists the AAE in carrying out *Defense Acquisition Workforce Improvement Act (DAWIA)* requirements. The DACM appoints a Deputy Director, Acquisition Career Management (DDACM), reporting directly to the DACM, who has responsibility for the organization and daily management functions of the Army’s acquisition career management activities.

USAASC establishes *DAWIA* Army policies and procedures, including overseeing accession; identifying high-quality education, training, and experience opportunities; assisting the functional leaders in establishing career paths; and providing military and civilian workforce career development. USAASC also provides resource, personnel, program, and force structure guidance to program executive offices, direct reporting program management, and other acquisition elements on the USAASC TDA. USAASC is also the proponent for the AAC regarding Total Army Analysis submissions.

*DAWIA* focuses heavily on a systematic approach in making the AL&T Workforce more professional. *DAWIA* addresses specific requirements for work assignments, experience, education, and training. A major challenge for today’s Army is integrating military and civilian AL&T Workforce members’ education, training, and career development into the organizational mission. Commanders and managers at all levels must possess a clear understanding of their roles and responsibilities to meet this challenge.

ASAALT’s core mission is to effectively and efficiently lead the Army’s acquisition function and the acquisition management system. The responsibilities include oversight of the Army weapons systems and equipment life-cycle management and containment from research and development through test and evaluation, acquisition, logistics, fielding,

and disposition. ASAALT oversees the Elimination of Chemical Weapons Program and appoints, manages, and evaluates program managers and program executive officers, and manages the AAC and AL&T Workforce.

The Army DACM, currently LTG N. Ross Thompson III, oversees the training management and support of more than 43,000 Army acquisition professionals. He is also responsible for the AAC NCO Corps career and professional development programs. Thompson and the DDACM approve the AL&T Military Development Model/programs. This program trains, supports professional growth, provides operational experience, and enhances leadership competencies.

The USAASC 51C Contracting Proponent is responsible for synchronizing the Career Management Field (CMF) 51-Acquisition and MOS 51C-AL&T Contracting NCO eight life-cycle management processes. The life-cycle management functions are recruitment, retention, individual training, education, distribution, sustainment, professional

and career development, and separation. The military contracting proponent office reports to the DDACM and consists of a 51C Proponent Officer/O-4, Chief NCO Proponent/E-9, AL&T Combat Development NCO/E-8, Instructor/E-7, and U.S. Army Human Resources Command (HRC) 51C Career Manager and Assignment Officer/E-7. Furthermore, the military contracting proponent performs coordination with HRC, Acquisition Career Management Branch for Acquisition Officers, and Quartermaster Enlisted Personnel Management Branch. This proponentcy is unlike most U.S. Army Proponent Offices as congressional mandates and the *DAWIA* govern the life-cycle management functions.

The Military Contracting Proponent-Contracting Proponentcy Officer and Chief NCO Proponent sergeant major provide a wide range of functions in supporting the military contracting workforce with direction from the DACM and DDACM and ensure compliance with *DAWIA*, including:

- Conducting DA G-1 functional reviews, CMF reviews, and the Army's personnel transformation for current and future operations.
- Providing the U.S. Army Training and Doctrine Command (TRADOC) with proponent updates pertaining to life-cycle management policies, procedures, and promotions.
- Providing proponent input to DA regulation and pamphlet updates.
- Initiating and fostering partnerships with the U.S. Marine Corps, U.S. Air Force (USAF), Defense Acquisition University, and the U.S. Army Logistics Management College for officer and NCO career and professional development.

The AL&T Combat Contracting Development NCO-51C master sergeant performs a variety of AL&T analytical tasks, including:

- Placing special emphasis on operational functions, doctrine, materiel fielding, solutions, and training in support of the U.S. Army Expeditionary Contracting Command and teams.
- Analyzing documents and obtaining approval of warfighting concepts, future operational capabilities, organizational requirements, and materiel requirements.
- Determining solutions for future operational capabilities.
- Revising manuals and developing new training tools and publications.

The AL&T Contracting NCO-51C sergeant first class (SFC) serves as a primary instructor and liaison for the Army and USAF enlisted personnel attending the 51C



The USAASC 51C Contracting Proponent is responsible for synchronizing the CMF 51-Acquisition and MOS 51C-AL&T Contracting NCO management processes. Here, SGT Christopher Smith, 172nd Infantry Brigade, moves through a training area forest during a situational training lane challenge at the U.S. Army Europe (USAREUR) NCO of the Year Competition held in August 2008 at the Grafenwoehr Training Area, Germany. (U.S. Army photo by SPC Joseph H. McAtee, USAREUR Public Affairs Office (PAO).)



reclassification training. The Army instructor/liaison will be responsible for:

- Facilitating, training, and mentoring the professional development of Army and USAF NCOs.
- Training enlisted personnel in acquisition processes, procedures, policies, compliance, laws, regulations, statutes, and equipment in all components.
- Assisting with updating combat administrative data and program of instruction as required.
- Providing operational experience and leadership from lessons learned during contingency contracting operations and missions.
- Coordinating the planning and briefing of Army training requirements to the 345th Training Squadron staff.



With the approval of the GenForce TDAs, the VCSA approved integration of the 51C enlisted proponent structure into ASAALT and the life-cycle functions of MOS 51C throughout the Army. Here, Soldiers are sworn into the NCO Corps at an NCO induction ceremony at Camp Liberty, Iraq, Jan. 22, 2009. (U.S. Army photo by SGT Michael Goebelbecker, 10th Sustainment Brigade PAO.)

The AL&T Contracting NCO-SFC and the 51C Career Development, Assignment, and Training Officer is responsible for:

- Reclassification, assignment, and initial training for MOS 51C.
- Accepting or rejecting nominations; filling open requisitions in the Enlisted Distribution and Assignment System; and coordinating with the Army, other DOD agencies, and senior enlisted contracting advisors in the field on filling assignment and training requirements.

The objective of the USAASC 51C Contracting Proponent is to work in sync with TRADOC in developing viable officer and NCO professional development programs and to create professional, agile, and motivated officers and an NCO Corps that consistently make sound and informed business decisions, act in an ethical manner, and deliver timely and affordable capabilities to the warfighter. Additionally, USAASC will provide career guidance and opportunities for broadening experiences and progression for its NCOs and ensure effectiveness of training and civilian education programs. These positions form the core of 51C enlisted personnel management and career development programs. The majority of AL&T Contracting NCO positions are in the U.S. Army Expeditionary Contracting Command's units and teams, a subordinate command of the U.S. Army Materiel Command. The AL&T Contracting NCO's primary mission is to deploy and perform as a warranted contingency contracting officer.

*SGM Ethan A. Jones is the Senior Enlisted Advisor to the ASAALT and his MILDEP. He is also the Chief NCO Proponent for CMF-51 Acquisition and MOS 51C-AL&T Contracting NCO. Jones holds a B.A. in public relations and mass communications from Paine University and is pursuing an M.A. in acquisition management from the University of Management and Technology. He is Level III certified in contracting.*

## Army, Industry Increase Synergy Through CGSC Speakers Program

*Brandon Pollachek*

As a group of more than 100 corporate employees gathered for a lunchtime speaking engagement in Cambridge, MA, the setting was status quo except for the speaker. This time, audience members were able to hear from the end user of their product — the Soldier.

The newly formed Command and General Staff College (CGSC) Industry Speakers Program matches up students attending the intermediate development course at Fort Leavenworth, KS, with industry. Students are afforded an opportunity to share their military experiences with the men and women who produce the products they are using on the battlefield.

The program's roots are based on CGSC Commandant LTG William Caldwell IV's requirement for CGSC officers to speak publicly to complete the course and a desire from program executive offices (PEOs) to have Army officers engage industry partners. Six PEOs participate in the program, each reaching out to those with which they do business. More than 35 companies are participating so far.

All students attending CGSC are required to participate in a speaking engagement during the course of the program. "With less than 1 percent of the U.S. population serving in the military, I think it is imperative for our Soldiers to share their stories with the American public they serve," said Caldwell. "The 'Sharing Our Story with the Nation' program gives students the opportunity to honor their fallen comrades and tell the incredible story of the American Soldier, while simultaneously educating and informing members of the community. I truly see this as one component of being able to effectively operate in today's information environment."

One of the first students to participate in the program was MAJ Ryan Welch, an Apache helicopter pilot, who delivered a presentation centered on a few battles he engaged in while deployed to *Operation Iraqi Freedom (OIF)*. Following his 30-minute presentation, Welch fielded questions from the audience for more than 45 minutes. Points of interest included everything from the various systems he used in the cockpit to troop morale and challenges he faced in theater.

"I chose to participate in the industry speakers program to thank industry research and development personnel for their vital role in providing our warfighters with top-end technological equipment in [overseas contingency operations]," Welch said. "Secondly, I wanted to share some stories about the heroic actions and tremendous sacrifices our Soldiers make on the battlefield every day. I feel it is important for these workers to know what their work ultimately results in where the rubber meets the road."

In addition to the benefits speakers receive from participating, the CGSC Industry Speakers program also represents an opportunity for PEOs to solidify relationships with their industry partners. "This is a tremendous opportunity for young officers to gain appreciation of what industry does and for workers at defense contractors to hear directly from Soldiers about the Army and what capabilities industry provides. It's a great experience for all involved," noted BG Thomas Cole, Program Executive Officer Intelligence, Electronic Warfare, and Sensors (IEW&S).



MAJ Ryan Welch, a CGSC student, addresses a group of industry professionals about his experiences while deployed as an Apache pilot in support of *OIF*. The briefing was part of the CGSC Industry Speakers Program. (U.S. Army photo by Brandon Pollachek.)

"The feedback I have received on this program has been nothing short of phenomenal. Every audience from Massachusetts to Arizona has raved about the professionalism and enthusiasm of our student representatives," Caldwell said. "With 16 engagements conducted in less than 4 months, I see this program as a true win-win for everyone."

Following his briefing, Welch stated, "The primary benefit of this engagement was the ability to connect with people who are involved in the development of equipment that will make my future units more combat effective." Additionally, Welch viewed his speaking engagement as a chance to connect with the audience on another level. He wanted industry to be able to take away that "what they do is important and results in lives saved," he said. "We are making significant gains on the battlefield that are a direct result of your diligence and determination in resourcing Soldiers."

*Brandon Pollachek is the PEO IEW&S Public Affairs Officer at Fort Monmouth, NJ. He holds a B.S. in political science from Cazenovia College and has more than 9 years' experience in writing about military systems.*

## Integrating Career Management Field (CMF) 51 and Military Occupational Specialty (MOS) 51C Career Development and Certification

*SGM Ethan A. Jones*

Developing and integrating strong, viable, and competent leader development and certification programs supporting CMF 51-Acquisition and MOS 51C-Acquisition, Logistics, and Technology (AL&T) Contracting Noncommissioned Officer (NCO) has been challenging. As the U.S. Army Acquisition Corps (AAC) NCO numbers continue to grow in order to support additional acquisition/contracting battlefield requirements, the U.S. Army Acquisition Support Center (USAASC) 51C Proponent for MOS 51C continues to identify, develop, and build constructive leader development and certification programs for 51C Soldiers, including AAC members. However, with all new challenges comes change — a culture change that requires support and understanding from senior acquisition leaders and Soldiers.

In accordance with *Department of the Army [DA] Pamphlet 600-25, NCO Professional Guide*, and the *Defense Acquisition Workforce Improvement Act (DAWIA)* contracting certification standards for Levels I, II, and III, 51C Soldiers have guidance and policies to support their professional growth and mission. The integration of these policies assists the NCO contracting force structure and support functions within the full-spectrum Army. To leverage existing expertise and capabilities throughout DA and DOD agencies involved in institutional contracting training and leader development functions, USAASC 51C Enlisted Proponent, certification, and leader development training processes are embedded within various DOD agencies. These agencies include the U.S. Army Logistics Management College (ALMC), Defense Acquisition University (DAU), U.S. Air Force 37th Training Wing, U.S. Army Human Resources Command (HRC), U.S. Army Training and Doctrine Command (TRADOC), and the Institute for Advanced Technology.

### Drill Sergeant School

The TRADOC core mission is to recruit, train, and educate Soldiers; develop leaders; support unit training; develop doctrine; establish standards; and build the future Army. To leverage existing leader development programs, USAASC, through the HRC Drill Sergeant Branch, will request one drill sergeant E-6 position with a projected fill in FY11. The HRC Enlisted Personnel Management Branch and the 51C Career and Assignment Office will enlist those 51C

staff sergeant NCOs in becoming drill sergeants. The Drill Sergeant School consists of 10 weeks of the same activities as basic training, including drill and ceremony, basic rifle marksmanship, and obstacle/confidence. The drill sergeant's tour of duty is 2 years with a possible 1-year extension. The 51C drill sergeants may be assigned to units that conduct basic combat training or 1-station training with a projected fill in FY11.

### 51C First Sergeant

USAASC is also developing a 51C first sergeant requirement. This requirement will support the U.S. Army Quartermaster Center and School Advance Individual Training Unit with a projected fill in FY11. A first sergeant carries the responsibility and authority of the company and:

- Has the breadth of experience, professional knowledge, and education.
- Is the unqualified expert in a variety of areas, including promotions, demotions, military law, civilian law, counseling, discipline, leave and passes, evaluations, inspections, public speaking, billeting, permanent change-of-station moves, and temporary duty assignments.
- Serves as the “eyes and ears” for the commander and the voice for the enlisted force.

### The Mission Airmen Ready Contracting Course (MRAC)

MRAC is the 8-week resident 51C Reclassification Training Course at Lackland Air Force Base, TX. Soldiers who successfully complete the MRAC receive Basic NCO Course credit and, if necessary, a requirement by TRADOC/Army G-1 to remain competitive for promotion to the next higher grade. Soldiers also receive *DAWIA* Level I contracting certification training.

### ALMC

The ALMC (east campus), part of TRADOC in Huntsville, AL, has an agreement with USAASC to support and train the acquisition military and civilian communities. ALMC is instrumental in the professional development and training of the acquisition community. ALMC teaches the Army Acquisition Basic Course, Army Intermediate Contracting Course, Army Intermediate Contracting Lab, and the Operational Contract Support Course. All are viable, distinctive, and unique courses to the acquisition community. The Army Intermediate Contracting Course and the Army Intermediate Contracting Lab run for 6 weeks and equate to the Contracting Advance NCO Course (ANCOC); 51C NCOs will receive ANCOC credit. In this course, the AL&T Contracting

NCO learns the intermediate principles of the *Federal Acquisition Regulation* and *Defense Federal Acquisition Regulation*.

To continue with the leveraging of existing training capabilities and expertise in every aspect of the acquisition process and leader development, USAASC has incorporated into its 51C professional development program the Institute for Advance Technology 51A Intermediate Qualification Course on acquisition leadership. Soldiers in grade of sergeant first class (promotable) and master sergeant are authorized to attend the 4-week resident course designed to provide tools in developing acquisition leaders capable of leading/commanding operations in any acquisition organization at the O-5/O-6 levels. Throughout this course, the Soldier will:

- Develop and motivate a pool of future senior officers and NCOs trained in innovative leadership and prepared for complex acquisition challenges.
- Be exposed to real-world customer needs and program management and program executive office operations through a series of speakers, staff rides, and field trips.
- Develop an enhanced understanding of customers and their support needs, industrial operations and its defense interface, and the civilian workforce.

### U.S. Army Sergeants Major Academy (USASMA)

TRADOC's USASMA helps Soldiers broaden their knowledge base. The prime educational technique employed

throughout the course is the small group participatory learning process. The USASMA course is divided into four areas: leadership, resource management, training management, and military operations at the highest levels of the Army. This training prepares 51C sergeants major as Senior Enlisted Contracting Advisors in support of major acquisition and contracting commands/organizations at O-7 and above levels.

The Army Acquisition Executive designated LTG N. Ross Thompson III as the Army's Director, Acquisition Career Management (DACM). The DACM oversees the training management and support of more than 43,000 acquisition professionals. The DACM and the Deputy DACM approve the AL&T Military Development Model/programs. All programs are designed to train, support professional growth, provide operational experience, and enhance leadership competencies throughout the NCO's career.

USAASC 51C Enlisted Proponent's objective is to create a professional, agile, and motivated NCO workforce that consistently makes sound and informed business decisions, acts in an ethical manner, and delivers timely and affordable capabilities to the warfighter. AL&T Contracting NCOs will become contingency contracting technical experts, trainers, and leaders. In the first years of their careers, they will require more technical training as it pertains to contracting statutes, laws, and regulations. Additionally,



USAASC 51C Enlisted Proponent's objective is to create a professional, agile, and motivated NCO workforce that consistently makes sound and informed business decisions, acts in an ethical manner, and delivers timely and affordable capabilities to the warfighter. Here, NCOs SFC William Perkins (left) and SSG Jeremy Smith (right center) are recognized for completing contracting officer's representative training and saving the Army more than \$200,000 at Camp Arifjan, Kuwait, in January 2008. Also pictured are MG (then BG) James L. Hodge, then-Commanding General U.S. Army Materiel Command (Forward) (left center), and LTC Doug Kiser, Commander, U.S. Army Contracting Command-Kuwait (right). (U.S. Army photo.)



The USAASC 51C Proponent continues to develop, cultivate, and build constructive leader development and certification programs for 51C Soldiers. Here, Acquisition NCO MSG Christopher Bowers speaks with Acquisition Career Manager Yves Jackson at the USAASC kiosk at the Association of the United States Army Annual Meeting and Exposition in October 2008. Bowers was the first-ever winner of the AL&T NCO Award of Excellence for 2008. (USAASC photo by McArthur Newell, BRTRC Contractor.)

USAASC will provide career guidance and opportunities to broaden experiences and progression for its NCOs. To meet and achieve certain certification goals for the AAC NCOs, USAASC sends Soldiers to DAU courses.

DAU provides a full range of basic, intermediate, and advanced training; assignment-specific training; and continuous learning opportunities. For AAC NCOs to perform their wartime mission as contingency contracting officers

or contract specialists, they must either have received accreditation under OSD policies and guidelines or certification under the OSD based on experience, training, and education as outlined by *DoD Instruction 5000.66*.

Under *DAWIA*, all Soldiers must have a bachelor's degree coupled with experience and training to qualify for one of the following contracting certifications: basic (Level I), intermediate (Level II), or advanced (Level III).

To become a member of the AAC, the applicant must be a member of the Army AL&T Workforce and occupy a designated DA AL&T position at the GS-13 (or comparable payband) grade level or above or be tentatively selected for a DA Critical Acquisition Position. In the enlisted ranks, AAC membership is available to NCOs in the ranks of master sergeant and higher who are *DAWIA* Level II or III certified in contracting and have 4 to 6 years of acquisition experience.

One of USAASC's goals is to produce competent, innovative, and viable AAC NCO leaders for today and tomorrow. The AL&T Contracting NCO's force structure was developed to support the Army's modular force. AL&T Contracting NCOs acquire technology, supplies, and service for our warfighters and our Nation through responsive and innovative support. Professional and leader development is the cornerstone of the Soldier. USAASC training and leader development programs will continue to bring AL&T modular capabilities holistically to the battlefield.

*SGM Ethan A. Jones is the Senior Enlisted Advisor to the Assistant Secretary of the Army for AL&T and his Military Deputy. He is also the Chief NCO Proponent for CMF-51 Acquisition and MOS 51C-AL&T Contracting NCO. Jones holds a B.A. in public relations and mass communications from Paine University and is pursuing an M.A. in acquisition management from the University of Management and Technology. He is Level III certified in contracting.*

## Contracting Community Highlights



**G**reetings to the Army Acquisition, Logistics, and Technology team! I am extremely honored and proud to be serving as the Deputy Assistant Secretary of the Army (Procurement). The acquisition community is a cadre of outstanding professionals whom I admire for their expertise, dedication, and persistence to excellence in an environment of unparalleled challenges.



Since assuming this role on Dec. 8, 2008, I have spoken with senior contracting officials about the major issues facing our community. Over the near term, I will share my vision and the strategic goals for the Army's procurement community. We are learning the focus areas of the new administration and more about congressional priorities. Contracting effectiveness and efficiency is a high priority in both communities. There will be new initiatives designed to cut costs and an increased emphasis on key procurement areas, such as increasing competition, a stronger focus on market research, tracking and managing Army property, and overall contract administration.

Contract closeout is an immediate concern. The Army has several hundred thousand Army contracts that are physically complete, but not closed out. The *Federal Acquisition Regulation (FAR)* requires contracts to be closed within 6 to 36 months after award. Although many of these may need only a few keystrokes in the Standard Procurement System to close, others are physically complete with outstanding payments and unliquidated obligations. I have directed that all Army contracts that are physically complete and over age per *FAR 4.804* be closed by Sept. 30, 2011, unless there are outstanding issues with external organizations, such as the Defense Contract Audit Agency or Defense Contract Management Agency. I have discussed plans for an Armywide closeout with the Principal Assistants Responsible for Contracting that includes priorities, processes, and metrics. A critical outcome of our closeout will be for Army contracting activities to identify the resources, personnel, facilities, and training needed to perform the full range of the contract life cycle, including closeout. As you learn more about this plan from your contracting leadership, I request and

expect your full support. It is a matter of regulation and sound fiscal discipline that these contracts be closed.

The Army has committed to expanding the contracting workforce in response to the *Gansler Commission Report*. Hiring, training, and mentoring this expanded workforce will be a great challenge. Additionally, in a recent meeting, GEN Peter W. Chiarelli, Army Vice Chief of Staff, made the bold statement that contracted support to the warfighter is the new normal. We have his strong support for Army contracting. We must be prepared to provide sustained support to an Army engaged in persistent conflict.

Much has already been accomplished, but much remains. I look forward to joining you in continuing to improve our processes and providing our workforce with better tools and training. I am totally committed to expending time and resources that will improve Army contracting. Together, we must overcome the challenges facing our community, sustain our commitment to excellence, and continue to provide world-class contracting capability to support our warfighters across the full spectrum of military operations.

**Edward M. Harrington**

Deputy Assistant Secretary of the Army  
(Procurement)

### New Army Competition Advocate General (ACAG) Promotes Increased Competition

*Dona Alexander*

The Army contracting community continues to be vigilant in promoting and providing full and open competition in soliciting offers and awarding government contracts. The new ACAG, Edward M. Harrington, Deputy Assistant Secretary of the Army (Procurement) (DASA(P)), heartily supports increased competition and has recently reemphasized its importance and continuous improvement on Army competition achievements.

The overall percentage of dollars and actions awarded competitively has remained relatively constant since FY98. For example, 66 percent of every dollar spent in 2007 was awarded competitively; in 2008, 65.4 percent of every dollar was awarded competitively, which slightly exceeded the 63 percent

Army competition goal. The competitive percentages are higher when measured by actions because all Army Commands, Army Service Component Commands, and Direct Report Units are competing what they can, but high-dollar noncompetitive procurements drive the overall picture. In 2007, the Army competed 84 percent of its actions; in 2008, 81 percent were competitive. Generally, installation/depot and construction/services contracting are well-suited to competition, but there is still plenty of room for improvement.

The Army contracting workforce made great strides in FY08 to improve competition. The U.S. Army Research, Development, and Engineering Command has significantly increased competition by employing best-value source selection procedures for all of its systems acquisitions. Several of these programs involved multiple awards to maximize production capabilities, ensure competitive design features, and level the pricing field for potential future buys. They rely on broad agency announcements and small business innovative research programs for state-of-the-art research and development projects for future warfighters. These programs are inherently competitive, and they stimulate and capitalize on innovative scientific research for Soldier-support items.

The Information Technology E-Commerce and Commercial Contracting Center is committed to maximizing competition for all actions by establishing “master contracts” for Army-wide use. These vehicles are not only created as a result of competition, but they also require additional competition when delivery orders/task orders (DOs/TOs) are issued. The Defense Management Travel Area, Army Desktop and Mobile Computing-2, and the Information Technology Enterprise Solution contracts for services and hardware are just a few examples of indefinite delivery indefinite quantity (IDIQ)-type contracts that benefit from this strategy. Not only do they provide substantial savings, but they also ensure that competition is retained for the life of the contracts.

The U.S. Army Communications-Electronics Command (CECOM) Contracting Center is a strong proponent of using IDIQ contracts to meet dynamic requirements. The acquisition strategies for multiple-award IDIQ contracts include a robust plan for maintaining competition for DOs/TOs, which are awarded only after prime contractors have been provided with a fair opportunity to be considered for award. Although CECOM supports many legacy systems for which competition is often not viable, contracting officers have contacted the systems developers or original equipment manufacturers (OEMs) to ascertain their interest in selling the Technical Data Packages (TDPs) if it is in the government’s

best interest. Additionally, the command’s technical experts continue to monitor the marketplace for changes that may present opportunities for additional sources to compete to meet government requirements and reinvigorate competition. Furthermore, a review of these legacy systems’ components is performed to identify those that can be broken out to enhance competitive opportunities.

Fair opportunity competitions were high on DO/TO awards in FY08. Total dollars on Army orders against DOD-issued multiple-award contracts were 88.8 percent competitively awarded. Total dollars on Army orders against non-DOD issued multiple-award contracts were 74.4 percent competitively awarded. These numbers bode well to maintain competition.

Army contracting officers face impediments to competition every day. In the arena of spare parts, subsystems and upgrades competition is frequently limited by lack of TDPs and the rigorous testing process required to approve substitute items. The latter factor is especially notable in the aircraft industry, where safety-of-flight considerations make the testing and approval process especially lengthy and expensive. It is also a major factor with vehicles. Competition has a negative effect when a major system OEM uses a vendor whose commercial part was privately developed and is protected by patents or trade secrets. Once this component or subsystem is incorporated into the end product, it creates a sole source situation for replacements and repairs. Breakouts are possible, with performance (form, fit, and function) specifications, but this can be time-consuming and expensive.

Numerous urgent and compelling justifications and approvals were processed in FY08 to provide support to the Federal Emergency Management Agency, including relief efforts after Hurricanes Gustav and Ike, and Midwest flooding recovery. The primary barrier to full and open competition in the contingency theater is the urgent requirement to meet needs of combat forces and local Army and police support, and to obtain parts for aging infrastructure, especially for power generation and water treatment. In particular, the Baghdad Security Plan Surge from October 2007 to May 2008 continued to require the use of other methods than full and open competition to meet unusual and compelling combat requirements.

Health care is another area that doesn’t lend itself to competition due to compatibility with existing government-owned equipment and physician-prescribed invasive devices, such as surgical implants, stents, pacemakers, artificial limbs, and

prosthetics. In particular, this area will continue to be a challenge because no exemption exists for these items. Barriers to competition are also encountered in secure environment contracting efforts, which are not candidates because of the sensitive nature of the action.

The ACAG is committed to supporting increased competition in the Army acquisition process. While enhanced competition opportunities are continually identified, many existing and new noncompetitive actions will also receive increased scrutiny. At the direction of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology, Harrington has launched a TDP decision process review that, if merited, may provide enhanced, standard guidance on a business case analysis on TDP procurement for new systems acquisitions. Initiatives under consideration to increase competition at all command levels are the Army oversight of command goal performance through quarterly reports on competition dollars spent and actions, Principal Assistants Responsible for Contracting alerts to share competition success stories, and a specific contracting award to recognize competition. The Army will continue to promote competition in FY09 by emphasizing market research, sponsoring industry day events, and conducting outreach.

*Dona Alexander is a Procurement Analyst in the Office of the DASA(P), Business Operations Directorate. She holds a B.S. in business management from the University of Maryland, is Level III certified in contracting, and is a U.S. Army Acquisition Corps member. Alexander can be reached at (703) 696-4465/DSN 426-4465 or dona.alexander@us.army.mil.*

## USAMRAA Progresses Toward Contract Excellence

*Terry McCune*

As contracting professionals, we are all charged with providing on-time delivery of the best value and best quality products and services. Many metrics captured by acquisition activities relate to workload growth in dollars, actions, and workforce size. The messages conveyed by these metrics are that we are doing more with less and/or our cost-per-dollar obligation has been significantly decreased. The metrics typically do little to measure our services in terms of product or service quality, timeliness, or value.

The U.S. Army Medical Research Acquisition Activity (USAMRAA), a subordinate command of the U.S. Army Medical Research and Materiel Command (MRMC), is implementing processes and procedures that will impact the quality, timeliness, and value of the products and services delivered. Using MRMC's Balanced Scorecard Strategic Management System, USAMRAA has established objectives that focus on employee development under the learning and growth perspective, measure processes under the internal process perspective, and ensure financial support for USAMRAA programs from the resources perspective, which improves customer services. This article addresses some of these initiatives.

### Quality Assurance Program

As a member of the Deputy Assistant Secretary of the Army (Procurement) (DASA(P)) Procurement Management Review (PMR) Advisory Team, USAMRAA has developed contracting tool kits to evaluate Army contracting activities. Each tool kit is used to review specific functional areas within an acquisition activity. USAMRAA also provides senior acquisition professionals to travel with the DASA(P) team to assist in PMRs. USAMRAA participation on the advisory team and the PMRs has significantly improved product quality. It helps USAMRAA focus on the most pressing issues in acquisition and allows best practices to be observed during PMRs. USAMRAA has assigned a senior procurement analyst to review contract and assistance agreement files by using DASA(P) contract execution tool kits, allowing continuous evaluation of file compliance.

### International Organization for Standardization (ISO) 9001

USAMRAA is ISO 9001 certified and has developed quality manuals and procedures to ensure implementation of acquisition policies, routine internal and external inspections, and hands-on management involvement. USAMRAA managers meet monthly to review ISO objectives and develop actions for continuous improvement. Two internal and one external audit are conducted yearly, and a recertification audit is completed every 3 years. USAMRAA has more than 80 individuals certified as internal auditors and one lead auditor.

### Lean Six Sigma (LSS)

To improve efficiency and reduce contracting costs, USAMRAA has embarked on an ambitious LSS project to reduce overall turnaround times for simplified acquisition purchases. This project includes the definition and deconstruction of each step in simplified acquisition purchases to build a value stream map. Interestingly, many contracting processes have very little variance. USAMRAA found a





USAMRAA has purchased laptops with docking stations and dual monitors for its employees similar to the one being used here at the U.S. Air Force Theater Hospital, Balad Air Base, Iraq. (U.S. Army photo.)

6-percent variance among contract specialists, a 1-percent variance among customer service centers, and almost no variance for procurement requests received by USAMRAA. A substantial variance was found in the completeness of procurement packages submitted by USAMRAA customers. One of the LSS goals is to improve customer procurement packages to reduce contracting costs and lead times. As a result of the project, USAMRAA fully expects to see a 15-percent reduction in simplified acquisition cycle times. Furthermore, USAMRAA expects to transfer efficiencies found in this study to all other acquisition categories.

### Information Management (IM)/Information Technology (IT) Initiatives

USAMRAA has purchased laptops with docking stations and dual monitors for its employees. The docking stations provide workforce flexibility and enhance USAMRAA's telework ability, and the dual monitors permit viewing of electronic contract files and Procurement Desktop 2 files simultaneously. Hardware deployment is key to ensuring a total USAMRAA IM/IT solution.

USAMRAA has also developed a contract specialist workload distribution tool to manage contracts and assistance agreements. This tool tracks the award type, complexity based on a 1 to 5 rating, and the contract specialist's workload. Each element generates a factor, allowing the supervisor to manage and normalize employee workloads. Contract specialists use the tool to monitor their contract actions.

In January 2009, USAMRAA deployed an electronic contract award file. This file contains all documents typically found in a hard-copy file. Each file is organized as a 6-part award file that mirrors the contract checklist. This effort will fully bring USAMRAA into the paperless environment. USAMRAA's justification and approval log will hyperlink to the electronic contract award file.

In August 2008, USAMRAA deployed an electronic contracting officer's representative (COR) database that contains awards, training certificates, training completion dates, and COR recertification dates. It allows management of COR training, award assignments, and certifications, and updates CORs on the latest acquisition changes. The COR database is hyperlinked to the electronic contract award file.

Contract file checklists have been developed based on contract award type or method:

- Simplified Acquisition Procedures (SAP)-services.
- SAP-supplies.
- Construction.
- Research and development.
- Small Business Innovative Research (SBIR)/Small Business Technology Transfer.
- General Services Administration.
- Commercial services.
- Assistance agreements.

In some contracting activities, one checklist is used for all actions. The rationale for USAMRAA using the different checklists is to minimize confusion since USAMRAA contract specialists must process all requirements.

USAMRAA has developed a new products and ideas submission procedure on its Web site (<http://www.usamraa.army.mil/pages/index.cfm>) where contractors and research institutions can submit unsolicited proposals based on the product category (pharmaceutical, medical device, etc.) and the development stage (research, prototype, off-the-shelf, etc.). The unsolicited proposals are then forwarded to the subject matter expert based on the category and stage criteria. To date, USAMRAA has received approximately 340 unsolicited proposals with response times at less than 30 days.

*Terry McCune is the USAMRAA Business Oversight Branch Chief, MRMC SBIR Coordinator, and manages the USAMRAA quality management programs. He holds a B.S. in management health care from Park University and an M.S. in contracts and acquisition management from the Florida Institute of Technology. McCune is certified Level III in contracting and is a U.S. Army Acquisition Corps member. He can be reached at (301) 619-2110/DSN 343-2110 or [terry.mccune@us.army.mil](mailto:terry.mccune@us.army.mil).*

## Army Implements Congressional Direction to Insourcing

*Kimberly Buehler*

Throughout the past couple of decades the federal government has grown increasingly reliant on contractor-provided manpower supplied through service contracts. The downsizing of the Army's civilian workforce and the increasing contractor workforce was driven by various factors, including increased requirements resulting from overseas contingency operations, staffing limitations, hiring restrictions, and budget cuts. Managers had few options for servicing contracts to attain a ready and skilled labor pool.

Hardly a day goes by without a news article about government contractors. Articles cover the wide spectrum of issues associated with a robust contractor workforce, such as the number of contractors in the "shadow workforce" and the lack of oversight and surveillance on service contracts. For the Army, the mission-critical, contractor-provided services

in Iraq and Afghanistan have been of particular media and internal DOD interest.

After years of supporting outsourcing, congressional focus has shifted to decreasing dependence on service contracting by increasing the civilian workforce. Congress expressed concern that DOD has outsourced inherently governmental functions in key mission areas and operationally executed unauthorized personal services contracts. As a result, the *National Defense Authorization Act for FY08 (NDAA 08)* brought new statutory requirements for DOD on service contracts and civilian hiring.

*NDAA 08 Section 324* directs DOD to consider using civilian employees to perform new functions and the work currently being performed by contractors. The statute requires this to be accomplished outside of the A-76 process. Acquisition planners are directed to give special consideration to insourcing for:

- Functions performed by DOD employees at any time during the previous 10 years.
- Functions "closely associated with inherently governmental activities" as defined in *Federal Acquisition Regulation (FAR) 7.503(d)*.
- Functions performed pursuant to a contract awarded on a noncompetitive basis.
- Contracts with documented poor performance records resulting from excessive costs or inferior quality.

*NDAA 08 Section 807* requires DOD to submit an annual inventory of the activities performed under service contracts and review those activities for unauthorized personal services, inherently governmental functions, and functions closely associated with inherently governmental functions. The section also directs that military service secretaries review contracts in the inventory and take appropriate corrective action to continue, discontinue, or convert the activities to DOD civilian performance. The review mandated at *Section 807* supports the identification of insourcing opportunities required under *NDAA 08 Section 324*. The Deputy Under Secretary of Defense for Acquisition and Technology selected the Army to provide the pilot inventory of service contract activities required under *NDAA 08 Section 807* because the Secretary of the Army (SecArmy) has had required manpower reporting for all service contracts since January 2005. The Assistant Secretary of the Army for Manpower and Reserve Affairs (ASA(M&RA)) created a Contractor Manpower Reporting Application (CMRA) to capture data from contractors on labor hour expenditures



After years of supporting outsourcing, congressional focus has shifted to decreasing dependence on service contracting by increasing the civilian workforce. Here, Michelle Holmes, an Army civilian secretary, prepares a document for signature at Camp Victory, Iraq, in September 2008. Holmes volunteered for Iraq duty from her home station at Fort Drum, NY. (U.S. Army photo by SPC Josh LeCappellain.)

by function, funding source, and mission supported. Contractors input data into the CMRA annually between October and December. The ASA(M&RA) converts the number of labor hours reported to an estimate of government full-time equivalents. The manpower reporting requirement applies to all service contracts except utility services, foreign military sales, and construction. For reporting purposes, services are defined in *FAR Subsection 37.101*.

ASA(M&RA) submitted the prototype inventory to the Office of the Defense Procurement, Acquisition Policy, and Strategic Sourcing on June 13, 2008. Data was compiled from CMRA, the Federal Procurement Data System-Next Generation, and the Army Contracting Business Intelligence System. The report was coordinated with the Deputy ASA (DASA) (Procurement).

To comply with future review and reporting requirements of *NDAA 08 Sections 324* and *807* and to reemphasize longstanding *FAR Subpart 7.5* and *37.104* responsibilities and limitations for inherently governmental functions and personal services contracts, the ASA(M&RA) revised the process and form used to document services contract approval. The SecArmy formalized the services contract approval process via a memorandum on Feb. 23, 2006. The process established completion of the Request for Civilian Hire or Services Contract Approval form before contracting for new service requirements and exercising options on existing requirements. The process also required monthly reporting to the ASA(M&RA) on the number of service contracts approved and disapproved at each Army Command, Service Component Command, and Direct Reporting Unit. On

May 8, 2008, the ASA(M&RA) changed the report from monthly to quarterly and it now collects the information required under *NDAA 08 Sections 324* and *807*.

The ASA(M&RA) also revised the Request for Civilian Hire or Services Contract Approval form to include a set of accompanying worksheets. The revised form now includes the certification that:

- The requirement does not include inherently governmental functions.
- The requirement does not include unauthorized personal services either in the way the work statement is written or in the way the contract operates.
- In the case of work closely associated with inherently governmental functions or noncompetitive contracts, special consideration was given to using federal government employees.
- The contract was either reported in the CMRA, was not reported in the CMRA (with explanation), or the CMRA reporting requirement was included in the work statement if it was a new requirement.

The four worksheets that now accompany the revised Request for Civilian Hire or Services Contract Approval form are designed to assist requirements officials and senior leadership with completing the certification statement. The worksheets mirror the *FAR Subpart 7.5* and *37.104* criteria for inherently governmental functions and personal services contracts. Putting the *FAR* requirements into the worksheet format enhances visibility of the requirements and ensures that appropriate risk mitigations are developed to prevent contracting for unauthorized personal services or inherently governmental functions. Completion of the revised form and worksheets is mandatory for all new service contracts and the exercise of options on existing service contracts as of Oct. 1, 2008.

More information and documents on the Army's policies for service contract approval, insourcing, and *NDAA 08 Sections 324* and *807* requirements can be found on the ASA(M&RA) Web site at <http://www.asamra.army.mil/insourcing/>.

*Kimberly Buehler is a procurement analyst in the Office of the DASA (Procurement), Procurement Policy and Support Directorate. She holds a B.A. in history/secondary education from Trenton State College and an M.A. in art history from Temple University. Buehler is certified Level III in contracting and Level I in program management, and is a U.S. Army Acquisition Corps member.*

## AbilityOne Program Highlights

*J. Vincent Gonzales*

“Employment is the key to economic security and personal independence of all Americans, especially Americans with disabilities,” said Tina Ballard, Executive Director of the Committee for Purchase from People Who Are Blind or Severely Disabled, the independent federal agency that administers the AbilityOne Program. “Through employment, this group of Americans, 54 million strong, will not only enhance their sense of well-being and gain more confidence, but will also be able to enjoy a reduced dependence on government support and join the ranks of taxpayers.”

The AbilityOne program, formerly the Javits-Wagner-O’Day (JWOD) program, creates employment for thousands of people who are blind or have other severe disabilities. AbilityOne coordinates its activities and participation with more than 600 nonprofit organizations and employs more than 40,000 personnel with severe disabilities. It also provides goods and services to the federal government at a fair price. AbilityOne has nearly 1,000 locations representing 40



Retired SPC Nathan Short shares his story about how AbilityOne helped him after he was wounded on active duty. Short spoke during a recognition ceremony for the AbilityOne Program Oct. 8, 2008, at the Pentagon. (DOD photo by PO2 Molly A. Burgess, U.S. Navy.)

government agencies that represented \$2.3 billion of products and services purchased by the federal government in 2006. The program is a major provider of military dining services to DOD and provides most of the Military Chemical Protective Coats and Trousers, known as the Joint Service Lightweight Integrated Suit Technology (JSLIST) overgarment. AbilityOne is the largest provider of custodial services and commissary shelf stocking to the federal government. In addition, it supports humanitarian relief programs in more than 30 countries.

The *JWOD Act* directs the designation of “a central nonprofit agency or agencies to facilitate the distribution ... of orders of the government for commodities and services on the procurement list among qualified nonprofit agencies [NPAs] for the blind or such agencies for other severely handicapped.” The National Industries for the Blind (NIB) and NISH (formerly known as National Industries for the Severely Handicapped) are the national nonprofit organizations designated to perform this and other functions to help NPAs participate in the AbilityOne program. NIB and NISH work closely with contracting activities and NPAs to match government requirements with NPA capabilities.

In 2006, the JWOD name was changed to AbilityOne. The transition has been gradual, but the AbilityOne logo and name are gaining recognition as the program continues to improve and expand its services and products. In the past, JWOD was known for production of mops and brooms and later for more traditional services, such as custodial services, shelf stocking, ground maintenance, food services, mail,



AbilityOne supports Soldiers by providing most of the JSLIST overgarment shown here. (Photo courtesy of Program Executive Office Soldier.)

laundry, switchboards, and administrative services. Today, AbilityOne provides facility and fleet management, hospital housekeeping, document management and destruction, warehousing, call center operations, recycling, hospitality, and secure mail.

To meet future challenges, AbilityOne is expanding into new markets. These include contracts for baggage inspectors; airfield alert support; manufacturing and development assistance; security services; dormitory management; vehicle registration; heating, ventilation, and air conditioning filter maintenance; vehicle dispatchers; kennel caretakers; and central issue facilities operations.

As members of the acquisition workforce, we must expand our vision to include how the blind and severely disabled can be part of the Army team and participate in supporting our warfighters. When an order is placed with AbilityOne, blind or severely disabled people receive jobs that help our wounded warriors who have served this country.

To access AbilityOne products and services, visit:

- <http://abilityone.com>.
- <http://www.globalsupply.gsa.gov>.
- <http://www.gsaadvantage.gov>.
- <https://emall6.prod.dodonline.net/main>.
- [http://www.jwod.gov/jwod/participate/authorized\\_distributors.html](http://www.jwod.gov/jwod/participate/authorized_distributors.html).
- [http://www.jwod.gov/jwod/about\\_us/bsc.html](http://www.jwod.gov/jwod/about_us/bsc.html).

For additional information, call AbilityOne's customer hotline at (800) 433-2304 or e-mail [info@abilityone.gov](mailto:info@abilityone.gov).

*J. Vincent Gonzales is a Procurement Analyst in the Office of the Deputy Assistant Secretary of the Army (Procurement), Business Operations Directorate. He holds a B.S. in engineering from the University of Central Florida and is Level II certified in contracting.*



## RDECOM Division B Contracting Team Wins Coveted Award

*Tonya Wood*

The U.S. Army Research, Development, and Engineering Command (RDECOM) Division B Contracting Team has won the Contract Professional of the Quarter Award. The team provided exceptional support to the Extended Area Production and Survivability (EAPS) Integrated Demonstration (ID) Source Selection and Evaluation Board pre-award evaluation and award process during FY08. EAPS ID is a multiple-year, multiple-award, 5-phase program through FY12 to design, fabricate, integrate, and test an EAPS battle element missile prototype. The prototype would meet the EAPS ID performance goals of negating single-threat targets by the end of Phase 3 and multiple-threat targets using simultaneously guided-missile interceptors by the end of Phase 4.

An integrated process team (IPT) of technical, legal, small business, Defense Contract Audit Agency, and pricing and acquisition personnel was established to ensure that the government's requirement was identified and solicited unambiguously. The IPT was instrumental in approving the Performance Work Statement, Acquisition Strategy Document, Acquisition Plan, Source Selection Evaluation Plan, and Request for Proposal. The IPT shortened the preproposal review time as questions and/or concerns were readily discussed and quickly resolved. The requirement was solicited fully and openly with competitive negotiations using best-value award criteria. The best-value approach included the proper balancing of technical, management, cost, and past performance factors. Electronic and/or paperless means were used for quick processing and ease of data exchange, especially during solicitation.

Four large businesses submitted proposals with various concepts to meet the EAPS requirement at price ranges from approximately \$39 million to \$110.5 million. After evaluations, two 5-year cost-plus-fixed-fee, performance-based task order contracts were awarded.

*Tonya Wood is the RDECOM-Division B Chief. She can be reached at (256) 876-2112/DSN 746-2112 or [tonya.wood@us.army.mil](mailto:tonya.wood@us.army.mil).*

## Army “ACE” Card Assists in Suicide Prevention

The loss of any Soldier’s or Army civilian’s life is a great tragedy, regardless of cause or reason. In 2007, the Army saw its highest suicide rate statistics, which have followed a similar trend in 2008. The rate has nearly doubled since 2001, according to the Army G-1 Suicide Prevention Office.

As Principal Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (AL&T) LTG N. Ross Thompson III recently reported in a message sent to the AL&T community, the Army hit a major and undesired milestone in January 2009. Since the Army has kept suicide statics, the beginning of this year marked the first time that Army suicide rates were higher than the general population. In January 2009, our Army lost more Soldiers to suicide than we lost to combat operations.

The Army is aggressively acting to reverse this alarming trend and prevent future suicides. It is our duty as part of the Army family to get involved if we see anyone, Soldier or civilian, who is contemplating taking his or her own life. We must follow the message put forth by LTG Michael D. Rochelle, Deputy Chief of Staff, G-1: “The success of the Army Suicide Prevention Program rests upon proactive, caring, and courageous people who recognize the imminent

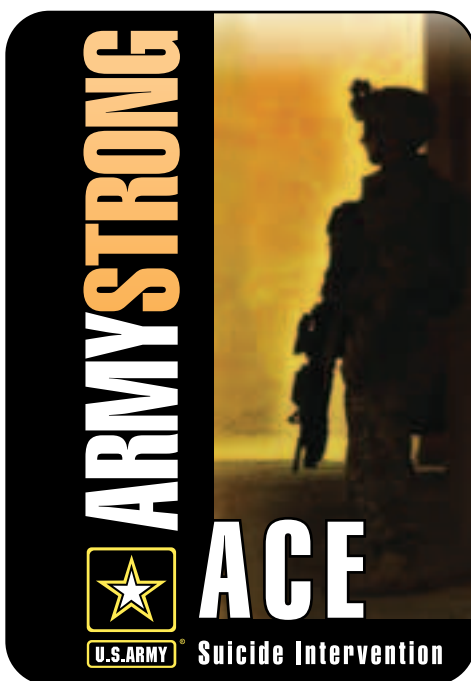
danger and then take immediate action to save a life. Suicide prevention is everybody’s business in the Army.”

Informing and educating the Army military and civilian workforce is integral to suicide awareness, intervention, and prevention. The Army’s suicide intervention “ACE” card, pictured below, has information that may help you save a life. One of the most important aspects to suicide prevention is recognition of certain suicide warning signs. The Army community must be trained and ready to react immediately to these signs.

Thompson advised that to achieve effective suicide prevention, the Army community must promote an environment of:

- Reduced stigma associated with seeking mental health care.
- Assurance that our workforce knows how and where to get the help needed to deal with stress, Post-Traumatic Stress Disorder, and other health issues.
- Reassurance that this help comes without negative repercussions, real or perceived, to career aspirations.

Additional suicide prevention/intervention resources can be found at the Army G-1 Suicide Prevention Web site (<http://www.armyg1.army.mil/hR/suicide>) and the U.S. Army Center for Health Promotion and Preventive Medicine Web site (<http://chppm-www.apgea.army.mil/dhpw/Readiness/suicide.aspx>).



USACHPPM <http://chppm-www.apgea.army.mil/>



**A** **Ask your buddy**


- Have the courage to ask the question, but stay calm
- Ask the question directly, e.g., Are you thinking of killing yourself?

**C** **Care for your buddy**

- Remove any means that could be used for self-injury
- Calmly control the situation; do not use force
- Actively listen to produce relief

**E** **Escort your buddy**

- Never leave your buddy alone
- Escort to the chain of command, a Chaplain, a behavioral health professional, or a primary care provider



GTA 12-01-003 May 2008



# U.S. Army Acquisition Corps (AAC) Annual Awards Call for Nominations

It is time for the U.S. Army Call for Nominations for the Army Acquisition Excellence (AAE) Awards, the Secretary of the Army Acquisition Director and Project and Product Manager of the Year (PM/AcqDir) Awards, the ASA(ALT) Contracting Noncommissioned Officer (NCO) Award for Contracting Excellence, and the David Packard Excellence in Acquisition Award. The winners of these awards (excluding the Packard Award) will be presented at the 2009 AAC Annual Awards Ceremony on October 4, 2009. The Packard Award will be presented on another date.

- The **AAE Awards** recognize an Army acquisition workforce member and/or team whose performance and contributions set them apart from their peers. The nominees work at all levels of the acquisition community, from senior leadership to newly hired interns. The award directly reflects the outstanding achievements in support of the Army's Soldiers and the Army's transformation initiatives. The Call for Nominations for this award is **March 10 to April 21**.
- The **PM/AcqDir Awards** applaud the PM and Acquisition Director whose outstanding contributions and achievements merit special recognition and provide a forum to showcase exceptional leadership within the AAC. The Call for Nominations for this award is **March 26 to May 7**.
- The **NCO Award** applauds the ASA(ALT) Contracting NCO whose outstanding contributions and achievements merit special recognition and provides a forum to showcase exceptional leadership within the U.S. Army Acquisition Corps. All Army Acquisition NCOs are eligible and will constitute the considered population for this award. The Call for Nominations for this award is **April 21 to June 2**.
- The **Packard Award** recognizes Department of Defense (DOD) civilian and/or military organizations, groups, or teams, who have made highly significant contributions which demonstrated exemplary innovation and best acquisition practices. These are multiple awards reflecting achievements that exemplify goals and objectives established for furthering life cycle cost reduction and/or acquisition excellence in DOD. The Call for Nominations for this award is **April 21 to June 2**.

For more information on the awards and upcoming Call for Nomination dates, please visit our Web site at <http://asc.army.mil>.

*Searching for Our Brightest Acquisition Stars!*

**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:**

- **Army International Programs: A Win-Win for the U.S. and Our Allies**
- **Foreign Military Sales (FMS) Program Helps Iraq Transition to Security Self-Reliance**
- **Setting Acquisition, Logistics, and Technology Conditions for Afghanistan**



UNITED STATES ARMY



**USAASC**  
PREPARING FOR THE FUTURE

ACQUISITION SUPPORT CENTER