ARMY AL&T

July - September 2007

Army Aviation Strong

UNITED STATES ARMY
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From the Army Acquisition Executive

U.S. Army Aviation

The U.S. Army is actively engaged at the forefront of the continuing global war on terrorism (GWOT) and committed, along with our sister services in the Joint Force, to the primary mission of protecting U.S. security interests at home and abroad. During this sustained and widespread commitment, the U.S. Army has also successfully progressed in its greatest transformation and restructuring since World War II. Aviation has a central role in our success.

With manned and unmanned assets, aviation organizations develop situations from both in and out of contact with the enemy, maneuver to positions of advantage, engage enemy forces beyond the range of their weapons, destroy them with precision fires and provide close air support. Aviation's inherent mobility, flexibility, agility, lethality and versatility are instrumental in enabling the air-ground task force commander to conduct decisive Joint operations.

Highly skilled and knowledgeable aviation Soldiers employing aviation systems from entry operations to decisive action provide a significant contribution to the quality of firsts (see first, understand first, act first and finish decisively). Aviation operations develop the common operating picture, shield the maneuver force, shape the operational environment, extend the tactical and operational reach of the maneuver commander and sustain the force.

In Army aviation's GWOT, the operations tempo (OPTEMPO) rates in theater have been approximately three to four times the planned peacetime OPTEMPO. Aviation platforms — including manned and unmanned aircraft systems — have flown nearly 1.5 million flight hours while consistently sustaining operational readiness rates in theater at, or exceeding, Department of the Army standards. Our aviation Soldiers and those who support them are doing a magnificent job!

The last several years have seen great progress in modernizing U.S. Army aviation. From the reinvestment of Comanche dollars, the Army has selected a Light Utility Helicopter (LUH), Armed Reconnaissance Helicopter (ARH) and Joint Cargo Aircraft (JCA), and Extended Range Multi-Purpose (ER/MP) Unmanned Aircraft Systems (UAS). It has delivered the UH-60M and CH-47F and established programs of record for the AH-64D Longbow Block III and the Small Unmanned Aerial Vehicle. The success of these programs, to include Flight School XXI and the training base, is due to the continuing support and synchronization of efforts from the U.S. Congress, the Office of the Secretary of Defense and Army/industry teaming to meet schedules and fielding in support of our warfighters.

Starting in FYs 08-10, we will begin to field the LUH, ARH, JCA, ER/MP UAS, UH-60M, CH-47F and the AH-64D Longbow Block III systems. Army aviation is working in concert with our sister services to develop concepts that will support the Future Force by developing the Joint Heavy Lift and Joint Multi-Role Helicopter programs.

How will Army aviation operate in a Joint and expeditionary environment that includes the Future Combat Systems (FCS)? As it does in today's Modular Force, Army aviation will continue to fulfill critical needs in the Future Force operational concept. Aviation will remain key to decisive maneuver as well as play an integral role in operational maneuver from strategic distances. We envision a battlefield environment dominated by simultaneous, distributed and networked Joint operations — that is, the simultaneous engagement by air and ground maneuver elements employing future advanced lift, reconnaissance and attack aviation assets — supported by Joint fires and the suppression of enemy air defenses, and linked by an advanced network. The Future Force empowered by FCS will mass effects, without massing forces, and still significantly expand our operational reach.

Air and ground manned and unmanned teaming is essential to the Future Force, and Army aviation is already on the leading edge of this teaming. Man-in-the-loop Army aviation will provide advantages throughout the Joint Operational Area for engaging fleeting targets, focusing terminal effects, directing attack UASs, assessing results and controlling effects after munitions are in flight. Mission-tailored aviation assets will provide multidimensional support, including sufficient capability to conduct battalion-sized vertical maneuver, aerial command and control, and aerial sustainment. Advanced aviation will remain a key enabler for higher tactical operations by complementing long-range precision fires; leading multi-functional sensor/attack UAS; and assisting advanced command, control, communications, computers, intelligence, surveillance and reconnaissance networking.

U.S. Army aviation provides us with remarkable capabilities across the full spectrum of operations. That is why it has a central role in our current global operations and why it is at the heart of the Army's transformation process.

Claude M. Bolton Jr.
Army Acquisition Executive

ARMY AL&T
July - September 2007

Acquisition, Logistics & Technology

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Senior Leaders Training Forum (SLTF)

The 2007 SLTF will be held Aug. 27-30, 2007, at the U.S. Army War College in Carlisle, PA. This invitation-only event will enable the Army Acquisition Executive and the U.S. Army Materiel Command (AMC) to communicate directly with Army senior acquisition leaders, program executive officers, senior leaders from AMC and major subordinate commands, life cycle management commanders and selected members of the Army's senior leadership team. SLTF invitees will be discussing new acquisition direction, guidance and policies. They will also be attending training sessions and workgroups focused on developing processes aimed at increasing the Army's ability to provide logistical and materiel support for Soldiers in the most timely and efficient manner possible.

Invitations will be sent out via e-mail. The point of contact for this event is Andrea Simmons, U.S. Army Acquisition Support Center Marketing Analyst/Event Planner, (703) 805-1095/DSN 655-1095 or **andrea.simmons@us.army.mil**.

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

By order of the Secretary of the Army

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0717203

Army Aviation Strong

Our theme this issue reflects the great heritage of Army aviation and the critical support Army aviators provide in humanitarian efforts, homeland defense, search and rescue, and most importantly, for Soldiers on the ground.

Program Executive Office (PEO) for Aviation is instrumental in providing Army aviation with new and better operational capabilities, enhanced digital interoperability with other systems, training systems and aircraft modernization programs.

We start the July-September issue with six articles about the Army's unmanned aircraft systems (UASs).

- In "Managing the Best Acquisition Program in the Army — This Is Where It All Happens," COL Don Hazelwood talks about PEO Aviation's UAS Project Office and the important work UASs are accomplishing in reconnaissance, surveillance, security and counter-improvised explosive device (IED) operations.
- William R. Ellis Jr. writes about small unmanned aerial vehicles in his "Acquisition in the Fast Lane — The Small Unmanned Aerial Vehicle Product Office." This article details the flexibility and agility required of today's product offices to meet urgent combat needs.
- "Common Systems Integration — Bringing It All Together" by LTC Jennifer Jensen and John Kaczynski explains how commanders and troops on the ground will have access to all military UAS assets in their area to make better-informed decisions.
- How medium altitude UASs such as the Warrior A and Warrior B are joining the fight against IEDs is the topic of LTC(P) Jeffrey Gabbert's and Steve Capps' article, "Medium Altitude Endurance Unmanned Aircraft Systems — Fielding a UAS in Record Time."
- The last two UAS articles describe the Shadow 200 program and the Shadow's performance-based logistics strategy.

Being "Army Aviation Strong" is all about interoperability. Project Manager (PM) Aviation Systems strives to keep its eyes on the horizon as it works with Future Combat Systems to plan interoperability initiatives between manned and unmanned Future Force elements while remaining compatible with Current Force systems. COL Michelle Yarborough outlines her PM's strategy in "PM Aviation Systems — Building the Army's Strategic Interoperability Assets."

Our aviation section is rounded out by a series of articles on Apache program modernization, the CH-47F Chinook Improved Cargo helicopter, the Kiowa Warrior, aviation maintenance safety and aircrew night vision goggle studies. We wrap up with aviator and Vice Chief of Staff GEN Richard A. Cody's remarks at the Army Aviation Association of America's conference, where he praised PEOs and program managers who are teaming with industry to carry out aircraft development and modernization.

Our final feature article is an interview with Kevin Carroll, PEO Enterprise Information Systems. Carroll has been a driving force behind the Army's move to business transformation and infrastructure modernization during his tenure as PEO.

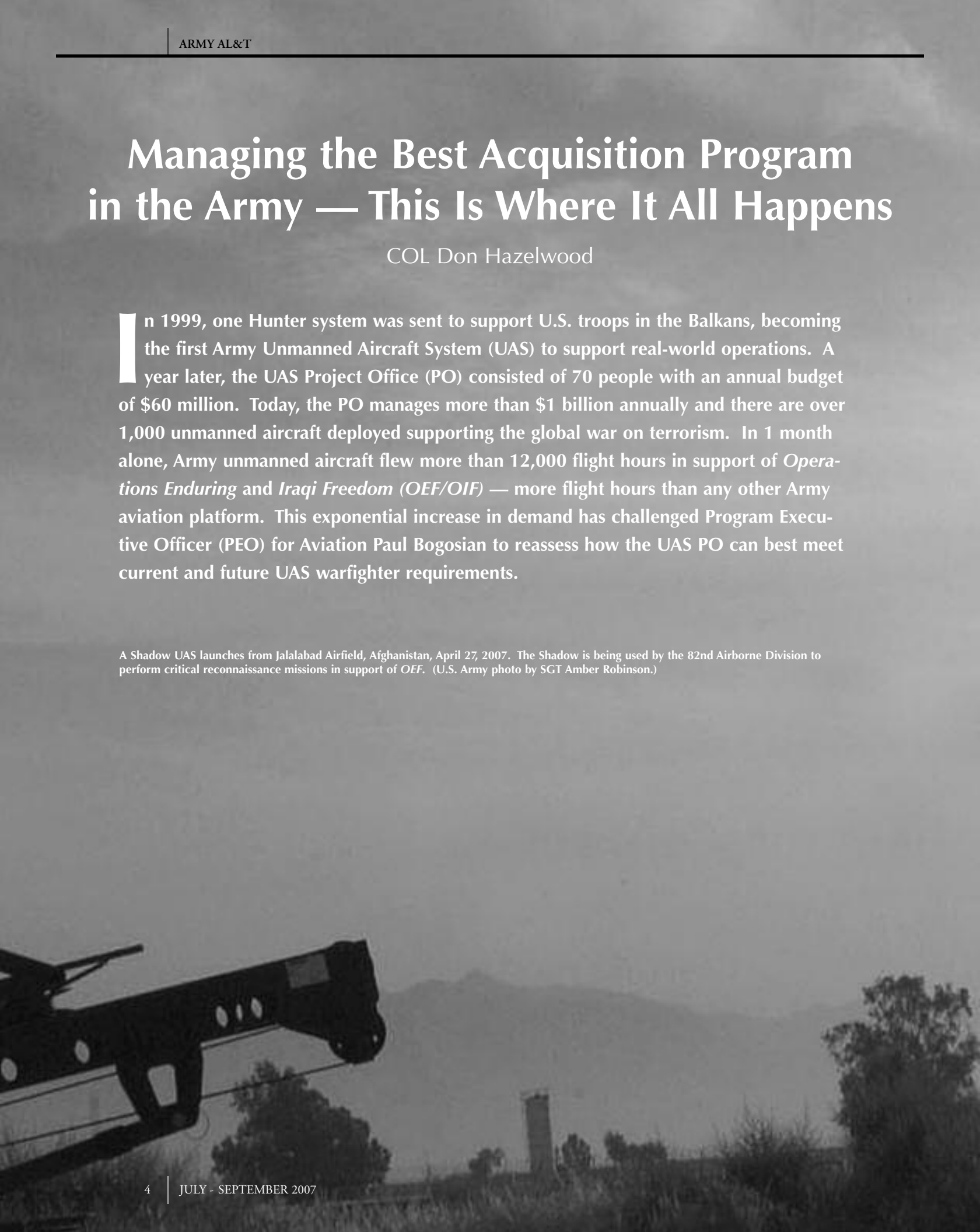
Michael I. Roddin
Editor-in-Chief

U.S. Army SGT Brady Schaures waves to Guatemalan children during an overflight of Puerto Quetzal, Guatemala, Feb. 11, 2007. Schaures, with 1st Battalion, 228th Aviation Battalion, Soto Cano Air Base, Honduras, is providing support to the Joint Logistics Over-the-Shore exercise (JLOTS). JLOTS is a Joint training exercise focused on providing humanitarian relief or tactical support in an area without port facilities. (U.S. Army photo by Kaye Richey.)

Managing the Best Acquisition Program in the Army — This Is Where It All Happens

COL Don Hazelwood

In 1999, one Hunter system was sent to support U.S. troops in the Balkans, becoming the first Army Unmanned Aircraft System (UAS) to support real-world operations. A year later, the UAS Project Office (PO) consisted of 70 people with an annual budget of $60 million. Today, the PO manages more than $1 billion annually and there are over 1,000 unmanned aircraft deployed supporting the global war on terrorism. In 1 month alone, Army unmanned aircraft flew more than 12,000 flight hours in support of *Operations Enduring* and *Iraqi Freedom (OEF/OIF)* — more flight hours than any other Army aviation platform. This exponential increase in demand has challenged Program Executive Officer (PEO) for Aviation Paul Bogosian to reassess how the UAS PO can best meet current and future UAS warfighter requirements.



A Shadow UAS launches from Jalalabad Airfield, Afghanistan, April 27, 2007. The Shadow is being used by the 82nd Airborne Division to perform critical reconnaissance missions in support of *OEF*. (U.S. Army photo by SGT Amber Robinson.)

UAS Concept of Operations has changed significantly since its early days in the Balkans to the high operations tempo (OPTEMPO) being experienced during *OEF/OIF* today. The immediate growth in flight hours is easily traced to the increased number of helicopters shot down from December 2006 through February 2007 and the current surge of counterinsurgent operations in Iraq. The insurgents sabotage and loiter around supply routes and oil pipelines. They know we will be patrolling those areas and they wait to shoot at our manned aircraft. Accordingly, the Army has shifted a lot of the surveillance work from manned aircraft to UAS. This shift takes our aviation crew members out of immediate danger and reduces flight hour costs.

Whether using UAS for route reconnaissance, reconnaissance on the march or persistent reconnaissance of the objective for 36 to 48 hours in advance of an action, our Soldiers are relying on their UAS for intelligence.

UAS have fundamentally changed the way we fight. The Soldiers in theater consistently state, "We don't go out the gate without our UAS." Whether using UAS for route reconnaissance, reconnaissance on the march or persistent reconnaissance of the objective for 36 to 48 hours in advance of an action, our Soldiers are relying on their UAS for intelligence. The insurgents also recognize the importance of manned and unmanned aircraft to our security and intelligence capabilities making all aircraft increasingly high-value targets.

While the preceding explains the recent surge in unmanned aircraft flight hours, sustained OPTEMPO for Army UAS is directly attributable to two key factors:

- Proliferation of UAS to all Army echelons.
- Overall dollar investment in UAS technologies that are being rapidly transitioned to systems and immediately fielded to warfighters.

Figure 1 graphically shows how the UAS community has only seen the tip of the iceberg with respect to how many more missions UAS will be accomplishing in the future.

Supporting the Warfight and Preparing for the Future

The UAS PO has established the following strategic plans to meet current operations requirements OPTEMPO (shown above the surface) while keeping what's below the surface in focus. Particular areas of emphasis in the future include:

- Continue to focus on surge support to *OEF/OIF* combatant commanders and their Soldiers — ceaseless support to the warfighter.
- Safety/risk mitigation.
- File and fly in national airspace (NAS).
- Integrated logistics and total ownership cost reduction across UAS life cycles.
- Technology mapping.
- Counter and counter-counter UAS initiatives.

There are many things that compete for our attention as materiel developers. However, we must always keep meeting the needs of our Soldiers first. This is true in peacetime, but absolutely required when the Nation is at war. If the focus is always on Soldier requirements, then cost, schedule and performance will fall into place.

Over the past year, the UAS PO reduced accidents by 64 percent. This significant reduction is a result of instilling an aviation discipline and culture that led to identifying a hierarchy of UAS failure modes. The PO then began instituting initiatives to reduce or eliminate those failures. Operators are better trained because their ground school training is now Federal Aviation Administration certified. All UAS units now have checklists for flight and maintenance operations. All new aircraft must undergo the rigors of airworthiness certification. UAS are currently down to 59 mishaps per 100,000 flying hours and will achieve another marked improvement in safety with the introduction of a heavy fuel engine and an airworthy fuel system. UAS are on track to achieve certified safety levels commensurate with the rest of Army aviation within 2 years.

With the proliferation of UAS and their associated operators, there is an

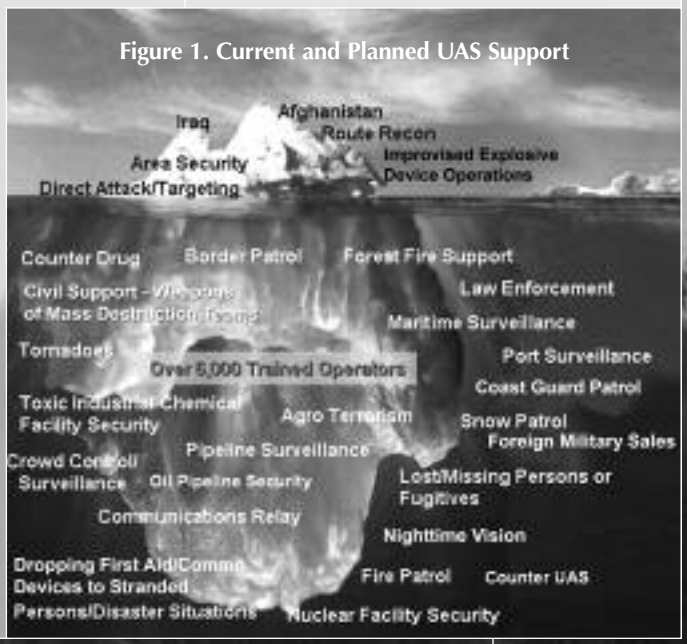


Figure 1. Current and Planned UAS Support

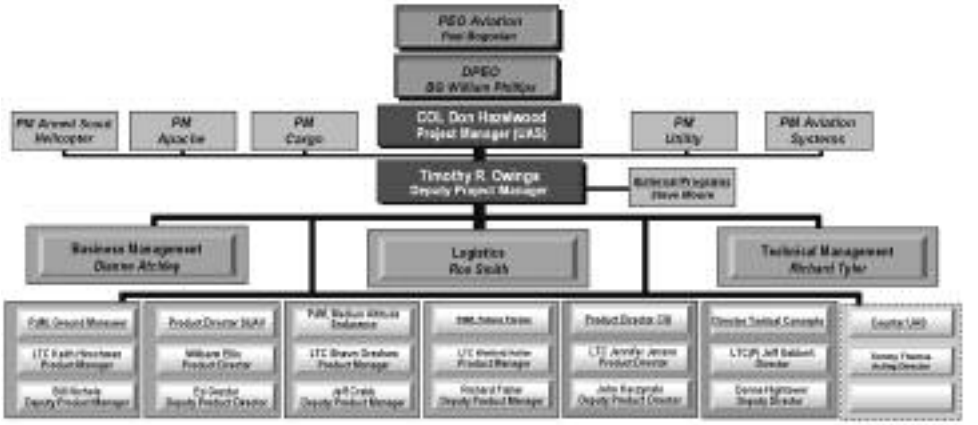
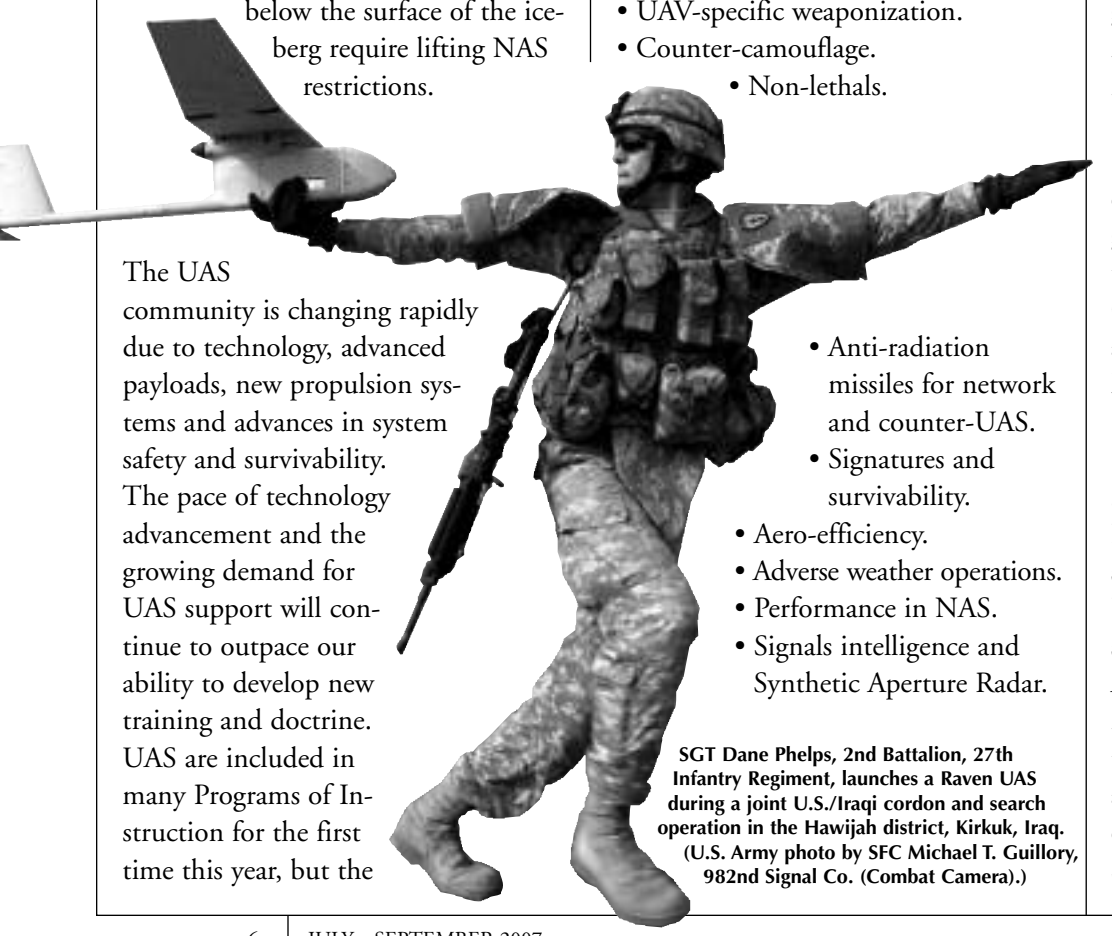


Figure 2. UAS Organization

ever increasing need to fly in NAS, whether for currency training or emergency situations such as homeland security, search and rescue or threatening weather. As warfighters return to their home stations from *OEF/OIF*, they will need to continue operating the systems in order to retain their proficiency. Many UAS units are part of the National Guard and do not have immediate access to restricted airspace. Retaining proficiency for these Soldiers and conducting the missions depicted below the surface of the iceberg require lifting NAS restrictions.



The UAS community is changing rapidly due to technology, advanced payloads, new propulsion systems and advances in system safety and survivability. The pace of technology advancement and the growing demand for UAS support will continue to outpace our ability to develop new training and doctrine. UAS are included in many Programs of Instruction for the first time this year, but the tactics discussed are from 2 years ago. Warfighter demands and technology maturation must continue to meet those needs. Current UAS PO technology requirements include the following:

- Firefinding, battle tracking and counter-fire.
- Onboard video processing/video compression.
- Sense and avoid.
- Electrical and hybrid propulsion.
- Foliage penetration.
- UAV-specific weaponization.
- Counter-camouflage.
- Non-lethals.
- Anti-radiation missiles for network and counter-UAS.
- Signatures and survivability.
- Aero-efficiency.
- Adverse weather operations.
- Performance in NAS.
- Signals intelligence and Synthetic Aperture Radar.

SGT Dane Phelps, 2nd Battalion, 27th Infantry Regiment, launches a Raven UAS during a joint U.S./Iraqi cordon and search operation in the Hawijah district, Kirkuk, Iraq. (U.S. Army photo by SFC Michael T. Guillory, 982nd Signal Co. (Combat Camera).)

The UAS PO's strategic plans were established to ensure that Soldiers' future needs are not just met, but greatly exceeded. Supporting those plans is an organization committed to excellence and organized for battle.

Structured for Success

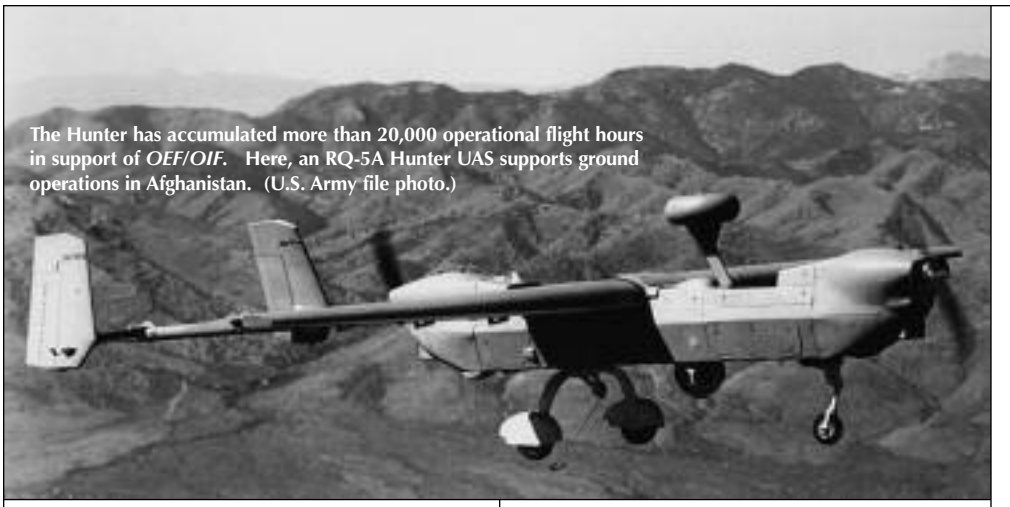
To meet the explosive growth requirements of the past 7 years, the UAS PO has restructured to meet the immediate warfighting needs in Iraq and Afghanistan and to position the Army's UAS assets for the dynamic road ahead. The Army has made a single project manager responsible for the development, integration, acquisition and logistics support for the entire Army UAS fleet. The UAS PO manages the six product offices discussed below and illustrated in Figure 2.

Small Unmanned Aerial Vehicle (SUAV)

SUAV Product Director (PD) William Ellis is responsible for the SUAV program that was first fielded in October 2003 to meet urgent wartime requirements. He also manages the Raven RQ-11B SUAV Program of Record. The SUAV achieved a tremendous materiel development feat by going from program inception to a Full Rate Production decision in less than 15 months. Currently, more than 300 Raven systems are in theater with over 23,000 accumulated operational flight hours.

Product Manager for Ground Maneuver (PM GM)

PM GM LTC Keith Hirschman is responsible for managing the Army's Brigade UAS, the RQ-7B Shadow. This system has become the fastest growing Army aviation program in Iraq. As many as 21 systems have been deployed to support *OEF/OIF* at any given time, and accumulated more than 150,000 operational combat flight hours. Shadow is so essential to Soldier mission



The Hunter has accumulated more than 20,000 operational flight hours in support of *OEF/OIF*. Here, an RQ-5A Hunter UAS supports ground operations in Afghanistan. (U.S. Army file photo.)

accomplishment that it is being used at 6 to 10 times the planned OPTEMPO.

PM Medium Altitude Endurance UAS, Extended Range/Multi-Purpose (ER/MP)

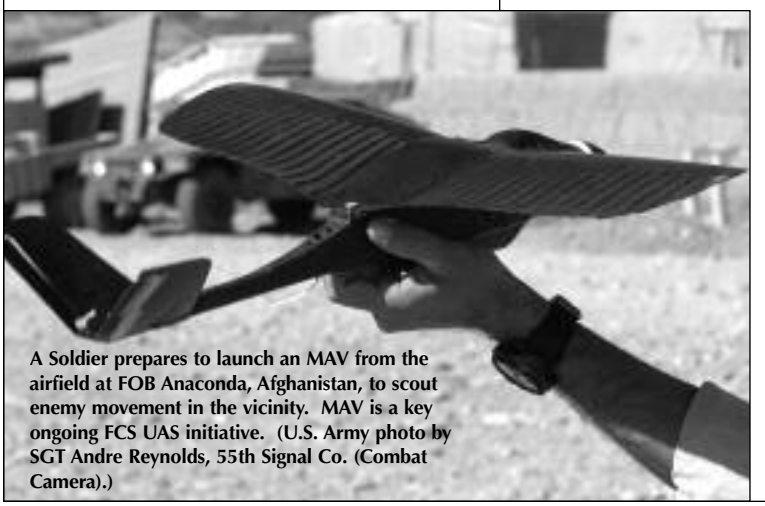
LTC Shawn Gresham's ER/MP program is in the System Development and Demonstration phase and is the first Army UAS designed from inception to be weaponized to gain the final significant reduction in sensor-to-shooter time lags or kill chain. Currently, once UAS operators identify a target, they can continue to track that target for hours while waiting for ground forces or armed aircraft to engage the target(s). With ER/MP, the kill chain can be reduced to a few seconds.

PM Future Forces UAS

LTC Winfield Keller manages the Army transformation efforts on all Future Combat Systems (FCS) UAS fleet classes. Current emphasis is on the Micro-Air Vehicle (MAV), a surrogate Class I UAS, and the MQ8B Fire Scout, the Class IV UAS. Both systems are currently in development.

Common Systems Integration (CSI) PO

Established in February 2006, PD LTC Jennifer Jensen is challenged to increase Joint interoperability/commonality across the UAS PO programs through horizontal integration. Recent successes include the fielding of the One System Ground Control Station (OSGCS) and the One System Remote Video Terminal (OSRVT). The OSGCS has a common hardware and software architecture to control an air vehicle (AV) (one at a time) from many types of UAS rather than each type requiring a unique GCS to control its AV. The OSRVT has a common hardware and software architecture that enhances situational awareness by providing near-real-time video and telemetry data from the AV to multiple manned and unmanned platforms.



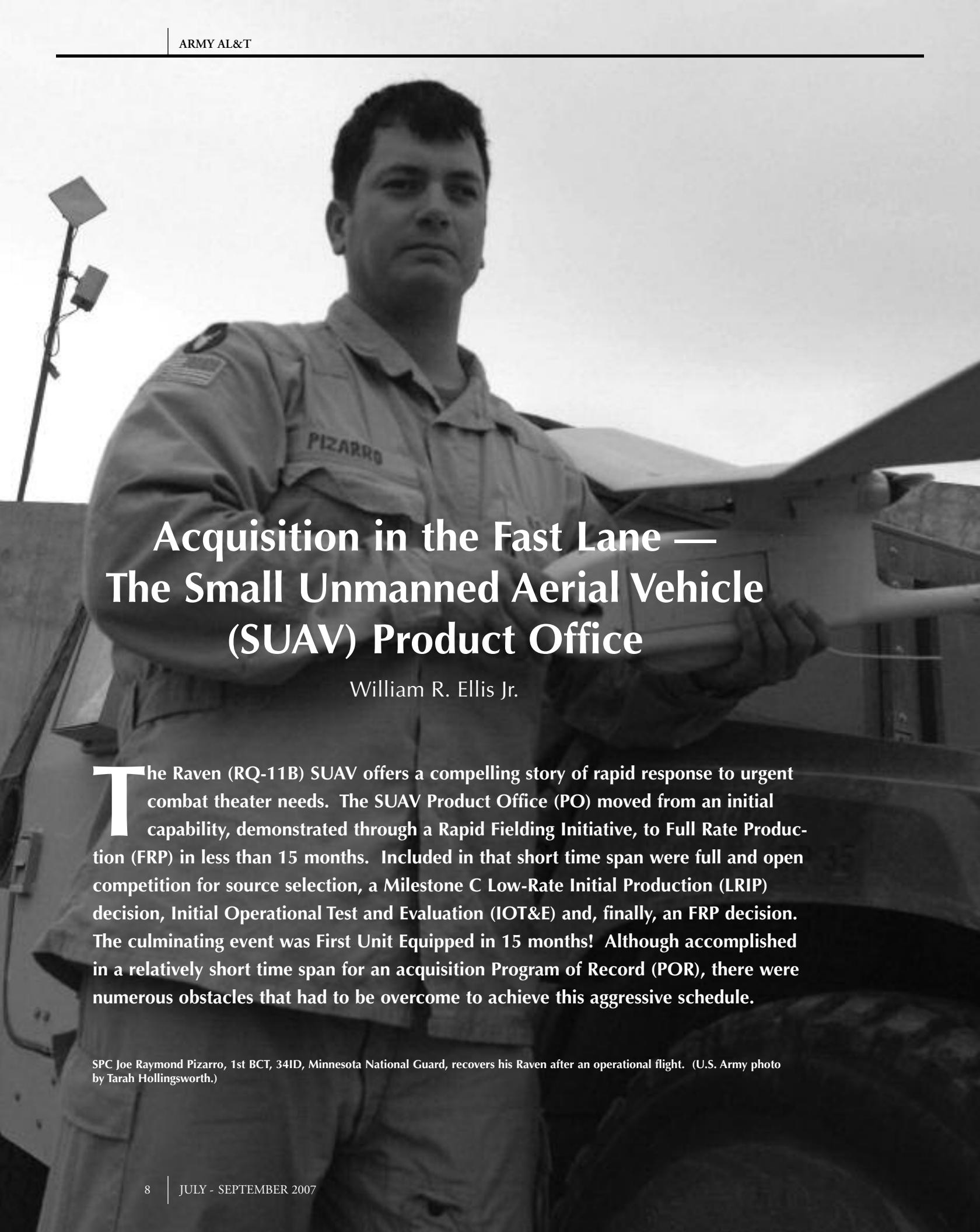
A Soldier prepares to launch an MAV from the airfield at FOB Anaconda, Afghanistan, to scout enemy movement in the vicinity. MAV is a key ongoing FCS UAS initiative. (U.S. Army photo by SGT Andre Reynolds, 55th Signal Co. (Combat Camera).)

Tactical Concepts PO

Established in June 2006, PD LTC Jeffrey Gabbert is responsible for providing corps- and division-level commanders with legacy UAS, which currently consists of the Hunter and Warrior "A" UAS programs. The Hunter has been used extensively in theater with more than 20,000 accumulated operational flight hours. The Warrior A UAS is currently filling the capability gap in theater until the ER/MP system is fielded in 2009.

The UAS PO's breadth of support is far wider than just the Army and fully supports Joint interoperability. It has truly become the DOD Materiel Center of Excellence for all UAS. The PO has procured Ravens and Shadows for the U.S. Marine Corps, Ravens for the U.S. Air Force and is currently working with the U.S. Navy for procurement of Shadow to replace their Pioneer UAS. UAS PO is fulfilling its mission for providing DOD with world-class UAS that are interoperable with Joint and coalition partners, common with other Army systems and affordable through excellence in program management. From the Balkans to *OEF/OIF* and into the future, the UAS PO is ready to meet our American Soldiers' requirements as warfighters, first responders and defenders of our Nation. The sky is truly the limit for future UAS.

COL DON HAZELWOOD is the PM for UAS PO, under PEO Aviation, Redstone Arsenal, AL. He coordinates and synchronizes Army research and development, procurement and sustainment for the Army and Joint services UAS programs. Hazelwood holds a B.S. in criminology from Michigan State University and an M.B.A. from Webster University. He is Level III certified in program management and is an Army Acquisition Corps member.



Acquisition in the Fast Lane — The Small Unmanned Aerial Vehicle (SUAV) Product Office

William R. Ellis Jr.

The Raven (RQ-11B) SUAV offers a compelling story of rapid response to urgent combat theater needs. The SUAV Product Office (PO) moved from an initial capability, demonstrated through a Rapid Fielding Initiative, to Full Rate Production (FRP) in less than 15 months. Included in that short time span were full and open competition for source selection, a Milestone C Low-Rate Initial Production (LRIP) decision, Initial Operational Test and Evaluation (IOT&E) and, finally, an FRP decision. The culminating event was First Unit Equipped in 15 months! Although accomplished in a relatively short time span for an acquisition Program of Record (POR), there were numerous obstacles that had to be overcome to achieve this aggressive schedule.

SPC Joe Raymond Pizarro, 1st BCT, 34ID, Minnesota National Guard, recovers his Raven after an operational flight. (U.S. Army photo by Tarah Hollingsworth.)

Overcoming Obstacles

The SUAV was widely accepted as essential to the commander's needs in the global war on terrorism (GWOT), which provided the impetus for rapid acquisition. Over the course of 15 months, the SUAV team achieved important objectives and overcame major obstacles as follows:

- Stood up the SUAV PO.
- Supported development and staffing requirements.
- Completed source selection.
- Established program elements (PE) for research, development, test and evaluation (RDT&E) funding and Operations and Maintenance, Army (OMA) funding.
- Planned and executed an IOT&E, including replacing the scheduled test unit with less than 60 days before test start date.
- Lost 50 percent of FY07 funding and 25 percent of FY10 funding.

The SUAV PO simultaneously supported the SUAV Rapid Equipping Force Initiative systems in *Operations Enduring* and *Iraqi Freedom (OEF/OIF)*; integrated requirements from the U.S. Army Special Operations Command (SOCOM) and the U.S. Marine Corps (USMC); and became a program of Joint interest and funding.

The SUAV PO simultaneously supported the SUAV Rapid Equipping Force Initiative systems in *OEF/OIF*; integrated requirements from the U.S. Army SOCOM and the USMC; and became a program of Joint interest and funding.

The Right People

In June 2005, the Unmanned Aircraft Systems (UAS) Project Manager decided to break the SUAV POR out of the Ground Maneuver (GM) PO and create a separate SUAV PO. Three personnel from GM transferred to SUAV. A non-board-selected product manager (PM) and a deputy were hired to execute the program and constitute the office. Their first act was to assemble the necessary personnel to staff the new PO. Experience and maturity were key qualifiers for individual team members. A hybrid organization was created and staffed with personnel from within the U.S. Army Aviation and Missile Command (AMCOM). The organization consisted of the PM and deputy, a small core of matrix personnel from the AMCOM functional elements, business management from the parent UAS Project Office and supporting contractor personnel.

Two Raven-Bs sit on the hood of a High-Mobility Multipurpose Wheeled Vehicle reflecting the moonlight in Iraq. The versatile systems sit ready for the next operational reconnaissance mission. (U.S. Army photo by Tarah Hollingsworth.)

The goal was to keep the organization as small as possible while allowing all the program management, engineering, logistics and business functional areas to be covered. Eight months into program execution, the staff numbered 30 people. The team members shared several key traits: a desire and focus to support Soldiers; an ability to multitask; a mature demeanor; 10-plus years experience in their functional areas; and a willingness to work long hours and travel. The SUAV PO paid a premium price to recruit the necessary staff. By focusing on the most highly qualified people, the PO was able to perform at a high level right from the start. Everyone in the PO was expected to work outside his or her normal functional areas to support the entire team.

Source Selection

The SUAV Source Selection Board began June 5, 2005. Seven vendors provided proposals for evaluation. Source selection consisted of six phases: solicitation and receipt of proposals; questions and answers; paper down-selection to two vendors; fly-off of the two competitors; best and final proposal; and vendor selection.

An immediate challenge arose because most competitors were small businesses and needed additional time to develop proposals. After the down-select to two contractors, Hurricane Katrina hit the Gulf Coast. One vendor requested and received a delay in accomplishing the fly-off because of their participation in relief assistance to New Orleans. This situation, combined with delays in source selection, slipped Milestone C and contract award for LRIP until October 2005. LRIP system funding was thus jeopardized, having originated from FY04 Comanche RDT&E and would expire at the end of September 2005. To prevent further schedule slippage, PM UAS internally reprogrammed funding from SUAV to other UAS programs. The SUAV program received replacement RDT&E funding from reprogramming of FY05 and FY06 UAS programs. Most importantly, while the SUAV overall program slipped, the IOT&E scheduled for June 2006 did not.

SFC Darren Atterbery, 4th Battalion, 42nd Field Artillery Regiment, launches an RQ-11B Raven SUAV at dawn last year near Taji, Iraq. The Raven's nose camera will relay critical real-time video back to the operator for his unit, which is tracking insurgent movement in the local vicinity. (U.S. Navy photo by PH1 Michael Larson, Fleet Combat Camera Group Pacific.)

Programmatics

The SUAV program was established with a single PE budget line for procurement. The PM SUAV took action to establish PEs for both RDT&E and OMA. This required close cooperation with Army G-8 and the Army Budget Office (ABO). The Army established the necessary budget lines for FY08 and beyond. This action was time-consuming with repeated trips to Washington, DC, to brief the G-8 and ABO personnel. The time spent with these offices secured champions for the SUAV program during Program Objective Memorandum (POM) development activity. The key to a positive outcome for the SUAV PO was daily contact with primary personnel and offices within the Pentagon.

Test and Evaluation

Originally, the SUAV IOT&E was scheduled for June 2006. In late November 2005, the designated test unit was alerted that it would deploy early and not be available for IOT&E. This was a devastating blow to the SUAV program. Because of GWOT and unit rotations, no replacement unit would become available until March 2007 at the earliest. This caused Army G-8 and G-3 to redirect SUAV funding to cover other Army requirements by decrementing the FY07 SUAV budget by 50 percent and the FY10 SUAV budget by 25 percent. To maintain program schedule for production and fielding, the SUAV PM began directly contacting units to provide the necessary forces to accomplish the IOT&E. Three possible courses of action (COAs) arose:

- Units from the 2nd Infantry Division (2ID) in Korea agreed to support IOT&E. Logistical considerations to make this happen, although staggering, were not impossible to meet. Additional funding over the original planned cost for the IOT&E was required. A critical hurdle appeared when the Korean frequency manager disapproved the downlink frequency, which would require a costly hardware reconfiguration. However, the Army Test and Evaluation Command (ATEC) objected because the new configuration would not be production representative. Another possibility was to move the test unit to a location where SUAV frequencies were approved for use. All of the objections for the 2ID were surmountable but were not the best solution due to additional funding and the logistical implications.
- The USMC was considered as a potential test unit. However, their tactics, techniques and procedures were not the same as Army infantry units. The PM decided to continue to

pursue this COA while giving the Army one last chance to provide the unit for IOT&E.

- The PO contacted Army units that had used the previous SUAV version, Raven-A, in the GWOT. Because the Raven-B had won the competition for the SUAV, these units were generally familiar with the system's capabilities. The 1st Cavalry (CAV) Division, Fort Hood, TX, was very receptive to supporting IOT&E if the unit under test would become the first equipped. All parties, including the test community, eventually agreed to this COA.

The 4th Brigade Combat Team (BCT), 1st CAV, Fort Bliss, TX, would support the IOT&E test using the combined facilities of Fort Bliss and White Sands Missile Range. This allowed the program schedule to remain unchanged for IOT&E in June 2006. The 4th BCT's commander, staff and Soldiers gave a collective Herculean effort to ensure success. They accomplished the task concurrent with new unit staffing, equipping, training and preparation for a rotation to the National Training Center and deployment to theater within 2 months of the IOT&E's scheduled end. In many ways, they were the critical "nail in the horseshoe" leading to the eventual fielding of Raven-B to the Army.

There were many challenges for the SUAV program to overcome. Success required that the office address all acquisition process, funding, and test and evaluation obstacles.

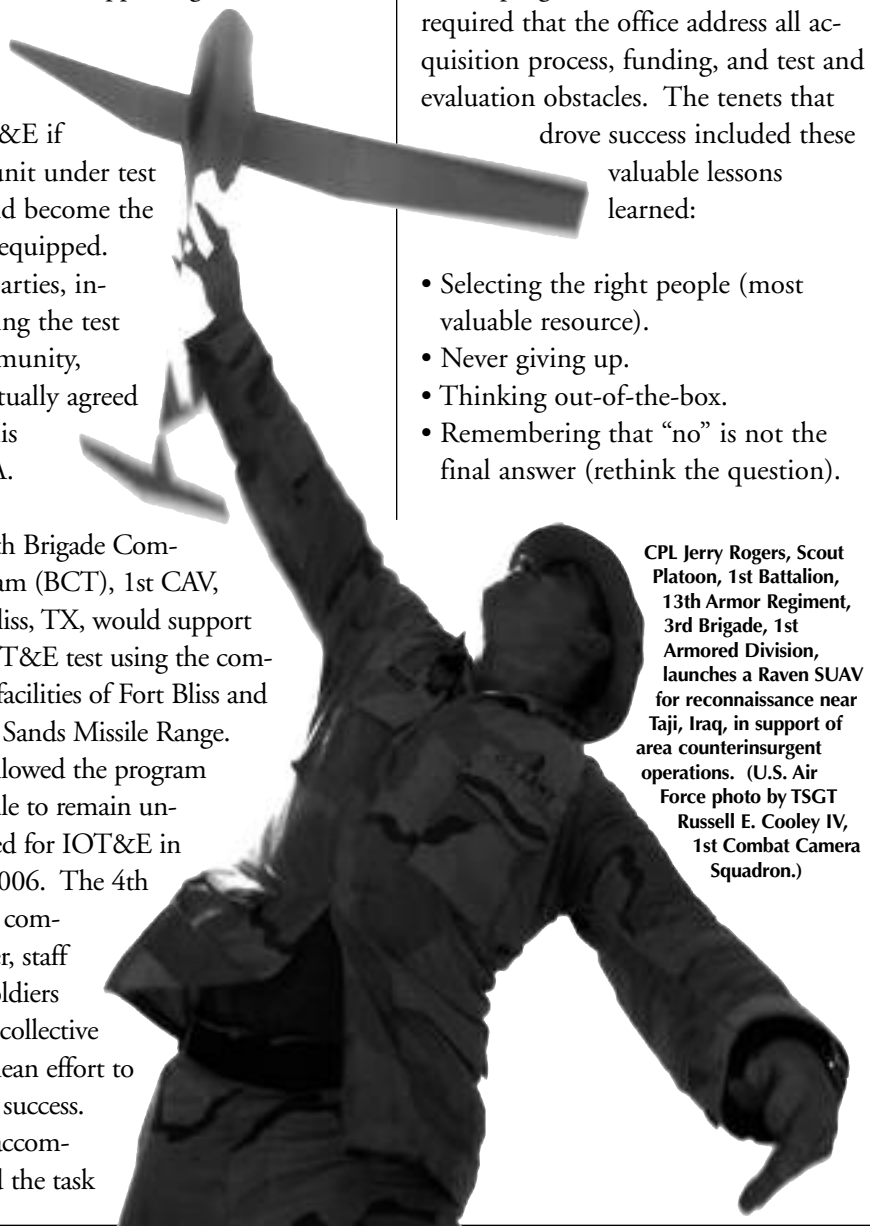
Success

There were many challenges for the SUAV program to overcome. Success required that the office address all acquisition process, funding, and test and evaluation obstacles. The tenets that drove success included these valuable lessons learned:

- Selecting the right people (most valuable resource).
- Never giving up.
- Thinking out-of-the-box.
- Remembering that "no" is not the final answer (rethink the question).
- Soliciting senior leaders to become program champions (information flow).
- Working with and helping organizations (ABO, G-8, G-3, etc.) understand your system's validity.
- Making reasonable demands (don't ask for the moon).
- Linking the program to other services (powerful stakeholders).
- If it is someone else's lane and they can't do it, do it yourself.

These tenets are not new. However, by being aggressive in their application, the SUAV program was able to overcome many challenges. A successful IOT&E maintained the original timeline and resulted in a positive report from both ATEC and the Director, Operational Test and Evaluation. This led to plus-ups in the SUAV program's budget. Fortunately, all lost funds were recovered in the POM-build process.

In short, the SUAV PO has been able to react to early demands for fielding and training of units for the Raven-B SUAV. SOCOM and the USMC were fielded Raven-B ahead of schedule. UAS requirements from commanders in the field are growing exponentially, and the PO continues to exceed the demands placed on it for SUAV systems by meeting Soldiers' needs Armywide.



CPL Jerry Rogers, Scout Platoon, 1st Battalion, 13th Armor Regiment, 3rd Brigade, 1st Armored Division, launches a Raven SUAV for reconnaissance near Taji, Iraq, in support of area counterinsurgent operations. (U.S. Air Force photo by TSGT Russell E. Cooley IV, 1st Combat Camera Squadron.)

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CSI

Common Systems Integration —

Bringing It All Together

LTC Jennifer Jensen and John Kaczynski

Imagine you are an infantry company commander leading your Soldiers against a terrorist safe house to kill a high-value target. You are about to launch your assault when you receive communications that the target location has moved a block north of your original plan. You've planned this mission for days. Suddenly your target proves elusive. Or is it?

With one click you are instantly viewing a tactical map showing the insurgent's new location, including all available coalition assets in the immediate area. Next, you notice that a Shadow Unmanned Aircraft System (UAS) is loitering in your area. You click on the Shadow icon to pull up real-time video and targeting information for the building. Another click and you're listening to a satellite communication conversation on your laptop about your target. You learn the target's about to move again. With this cutting-edge technology and real-time communication, tracking the enemy has never been easier.

CSI

The Program Executive Officer for Aviation recently stood up the CSI Product Office in the UAS Project Office (PO) to ensure that commanders and troops on the ground have access to all the military assets in their area. CSI PO's objective is to achieve Joint interoperability among all military services' UAS and develop common solutions to support unmanned systems through horizontal integration. Ultimately, this goal will reduce life-cycle costs and increase system interoperability throughout the Joint operational environment. The CSI mission is to develop and deploy "one system" that builds upon existing ground support equipment, such as the ground control stations (GCS) and remote video terminals from other product offices within PM UAS. PM CSI's ultimate goal is to centrally manage the ground equipment to ensure that each GCS has standard interfaces and is interoperable with existing UAS platforms and future unmanned and manned aircraft. This consolidation of effort on a common GCS will significantly reduce life-cycle costs since each new technology upgrade or modification would only be made once rather than multiple times on each type of ground station. CSI's goals are to:

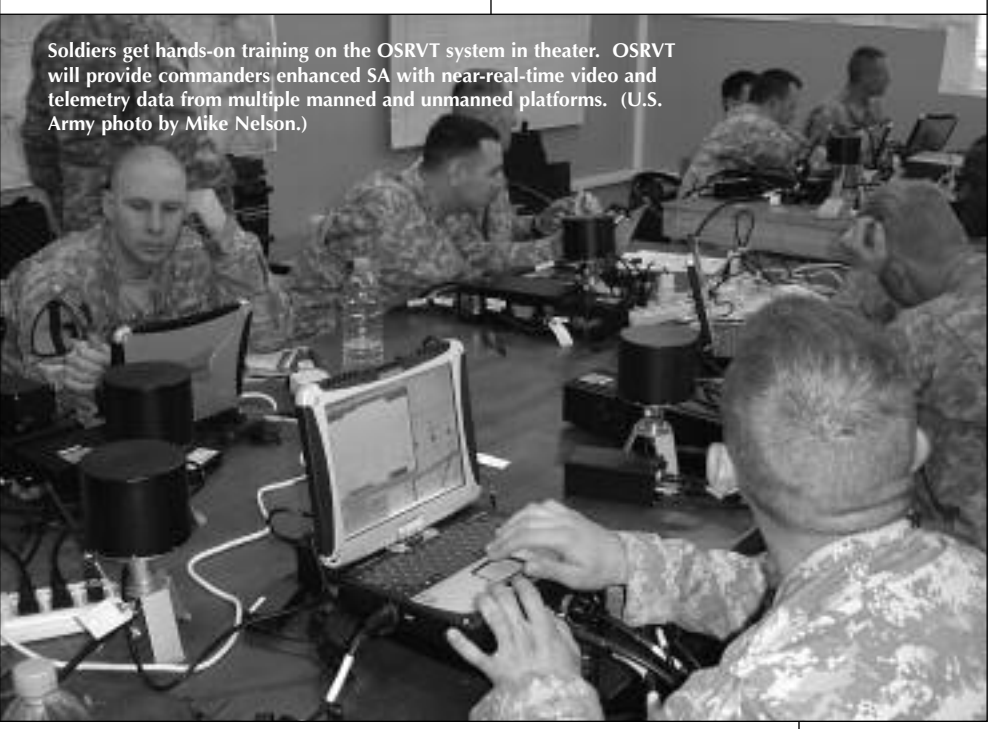
- Provide guidance to UAS product managers and their prime contractors to overcome deficiencies and achieve interoperability and commonality through contractual requirements and performance specifications.
- Develop horizontal integration of interoperability and commonality across the Army UAS fleet.
- Develop interoperability with manned aviation platforms.
- Provide dominating situational awareness (SA) to the Army and Joint forces through standard dissemination means.
- Develop common airspace integration solutions.
- Bridge the gap between Current and Future Modular Forces.
- Develop and implement common and cost-effective supportability and logistics.

CSI has released interoperability specification Version 1.0, which will be implemented by 2008. It focuses on defining the standardized communication protocols and message formats across interfaces, as well as moving forward with an interoperable GCS controlling various types of UAS platforms. This initial specification is the basis of the Joint interoperability specification being developed in conjunction with the U.S. Air Force (USAF) and U.S. Marine Corps.

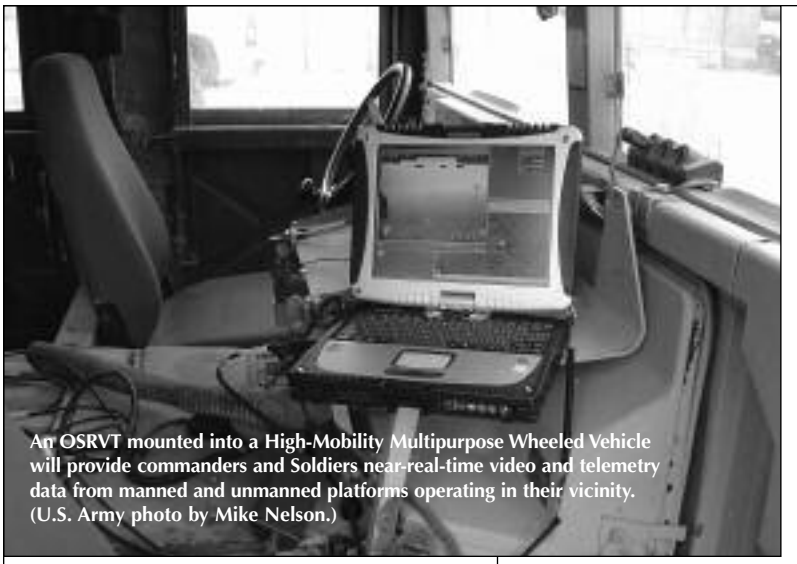
CSI PO's objective is to achieve Joint interoperability among all military services' UAS and develop common solutions to support unmanned systems through horizontal integration.

CSI is also working the first edition of the Joint Interoperability Profile that is geared toward Level 2 interaction of manned and unmanned platform sensors by defining a fixed subset of "end-to-end" specification variables into one interoperable mode of operation. The goal is for every user to be served at a uniform minimum. The levels of interaction are defined as follows:

- Level 1 = Indirect receipt of platform sensor's product.



Soldiers get hands-on training on the OSRVT system in theater. OSRVT will provide commanders enhanced SA with near-real-time video and telemetry data from multiple manned and unmanned platforms. (U.S. Army photo by Mike Nelson.)



An OSRVT mounted into a High-Mobility Multipurpose Wheeled Vehicle will provide commanders and Soldiers near-real-time video and telemetry data from manned and unmanned platforms operating in their vicinity. (U.S. Army photo by Mike Nelson.)

- Level 2 = Direct receipt of platform sensor's product.
- Level 3 = Command and control platform's sensor.
- Level 4 = Command and control of platform.
- Level 5 = Launch and recovery operations for unmanned platforms.

The next step is releasing Version 2.0 of the interoperability specification, which is planned for an FY11 implementation. It will focus on controlling multiple platforms of the same type through a digital network. Step three, Version 3.0, implemented by FY13, will support control of up to eight air vehicles of different types in a system network. Ultimately, the vision is to create one system that warfighters can use by clicking on an icon to display different platforms. This would allow users to send and receive information in their desired format. The goal is to provide the right product to the right users through the right pipeline. The U.S. Army's UAS mission and technology with its highly flexible, rapidly changing and ever-increasing demand, make a "one-system" solution ideal for Army aviation. New uses are continually being developed for both the UAS platforms and their product dissemination.

CSI is responsible for transferring emerging technology from research and development and integrating it into the GCS. Potential technologies include advanced payloads that will include multi- and hyper-spectral cameras, minefield detection systems and low-cost common digital data links. In addition, CSI will manage common product processors capable of compression mosaicing and aiding target recognition algorithms. The current funding level for technology transfer is approximately $15 million-$20 million annually.

CSI leads the effort to develop a common One System GCS that allows a single GCS to fly both a Shadow and Warrior UAS. Having this One System GCS provides enhanced flexibility to our combatant commanders. The common GCS will provide additional operational capabilities including:

- Interoperability.
- Commonality.
- Airworthiness certification.
- Weapons control.
- Laser designation.
- Digital processing.
- A gateway to Future Combat Systems (FCS).

A common GCS holds many benefits for Army aviators, including significantly simplifying training, reducing the logistics supportability requirements and reducing life-cycle costs across all systems. Likewise, the open system architecture would simplify incorporation of future upgrades and interoperability requirements for FCS.

Simulation and Training

A GCS trainer is being developed that will allow the air vehicle and payload operators to hone their skills without having to actually launch an aircraft. The GCS trainer is very similar to how manned aircraft simulators operate today. CSI is ensuring commonality, interoperability and reuse of existing UAS training capabilities by guiding continued development and sustainment of the simulation training systems used for introductory, crew and proficiency training of Army aircraft operators and payload operators.

The simulation systems comprised the Multiple Unified Simulation Environment (MUSE)/Air Force Synthetic Environment for Reconnaissance and Surveillance that is developed and maintained by the Joint Technology Center/Systems Integration Laboratory (JTC/SIL). It simulates the air vehicle, the payload(s) visual scenery and the data link while directly interfacing with tactical UAS equipment. It provides the capabilities to teach pre-flight/flight operations mission execution; weapons engagement; emergency operations; and command, control, communications, computers and intelligence messaging.

MUSE interfaces directly with tactical hardware in a classroom environment and is loaded in each Army UAS GCS as an embedded trainer. It currently has common hardware and software for teaching both Hunter and Shadow operations, and it will include Warrior UAS capability later this year. Additionally, the MUSE training system is interoperable with many simulation systems across the services to include manned and unmanned platforms.

One System Remote Video Terminal (OSRVT)

Tactical commanders have a significant and growing need for real-time UAS video and intelligence dissemination. This capability is the key to expanding use of UAS to support our warfighters through an OSRVT. With OSRVT, communications and video/intelligence from all the Joint services' UAS will be available in tactical operations centers across the battlefield. CSI has Logistics Assistance Representatives and contractor logistics support onsite to support OSRVT training, fielding and sustainment operations in theater.

CSI is currently in Iraq and Afghanistan fielding the OSRVT to provide enhanced SA with near-real-time video and telemetry data from multiple manned and unmanned platforms including: Hunter, Shadow, Predator, Pioneer, IGNAT, Raven and other UAS and manned Litening Pod platforms. The OSRVT kit consists of ultra-high-frequency modem, cables, software and an optional extended range antenna. Software supports decoding telemetry and metadata from multiple UAS, links data onto FalconView maps and supports off-target calculations. OSRVT capabilities include:

- Real-time video — analog 30 Force Protection Systems (FPS) and digital — reduced rate 8-15 FPS.
- Icons on the map for geospatial awareness.
- Off-target calculations anywhere on video window.
- Intuitive presentation for best grasp of SA — both map and video.

The OSRVT is currently not a Program of Record and receives funding through the individual services, unit transfers and Department of the Army supplementals. The OSRVT is scheduled for multiple upgrades to include bidirectional control, Precise Precision Service and Selective Availability Anti-Spoofing Module Global Positioning System upgrade, and ultimately expand to embedding the capability into current and future battle command systems.

CSI works in partnership with the JTC/SIL Certification Center. The JTC/SIL Certification Center is developing hardware-in-the-loop (HWIL) simulation that will be used to certify compliance with the interoperability profiles. The current efforts include:

- Integrate Tactical Common Data link hardware.
- Integrate Extended Range/Multi-Purpose (ER/MP) Warrior avionics.
- Demonstrate Shadow and ER/MP interoperability.
- Prototype and test network interoperability.
- Develop radio frequency simulation to interface with HWIL and control data-link emulator.
- Conduct trade studies as required.

Maintaining operational perspective is essential for framing user requirements and then considering the entire doctrine, organization, training, materiel, leadership and education, personnel and facilities spectrum to translate these warfighter needs into system performance requirements. CSI continues to translate requirements for interoperability at every echelon thoughout the Army as well as the other services. Additionally, CSI continues to develop products that bridge the gap between the Current and Future Modular Forces. While this task is not easily attainable, CSI has the right people and the right strategies in place to pave the way to the future for UAS.

Bruce Ottenwess, a General Atomics Aeronautical Systems airframe and power plant mechanic, conducts preflight checks before launching a Predator MQ-1 UAS at Balad Air Base, Iraq, Jan. 31, 2007. OSRVT is providing enhanced SA to operational units supporting ongoing combat operations in Iraq and Afghanistan. (USAF photo by SSGT Michael R. Holzworth, 31st Communications Squadron.)

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JOHN KACZYNSKI is the Deputy Product Director for CSI within the U.S. Army UAS PO. A retired USAF lieutenant colonel, he holds a B.S. in electrical engineering from Norwich University and an M.B.A. from Golden Gate University. Kaczynksi is Level III certified in program management and systems engineering, and Level I certified in test and evaluation.

Medium Altitude Endurance Unmanned Aircraft Systems (UAS) — Fielding a UAS in Record Time

LTC(P) Jeffrey Gabbert and Steve Capps

On June 8, 2006, the Tactical Concepts Product Office (PO) was established within the UAS Project Office to help support the U.S. military fight against improvised explosive devices (IEDs) in Iraq and Afghanistan. The Extended Range/Multi-Purpose (ER/MP) UAS is the Army's Program of Record for medium altitude systems but will not be fielded to the Army's 10 divisions until 2009. In the interim, Tactical Concepts PO is charged with providing a current capability.

A UH-60 Black Hawk helicopter flies over Balad Air Base, Iraq, Feb. 11, 2007. (U.S. Air Force photo by SSGT Michael R. Holzworth, 31st Communications Squadron.)

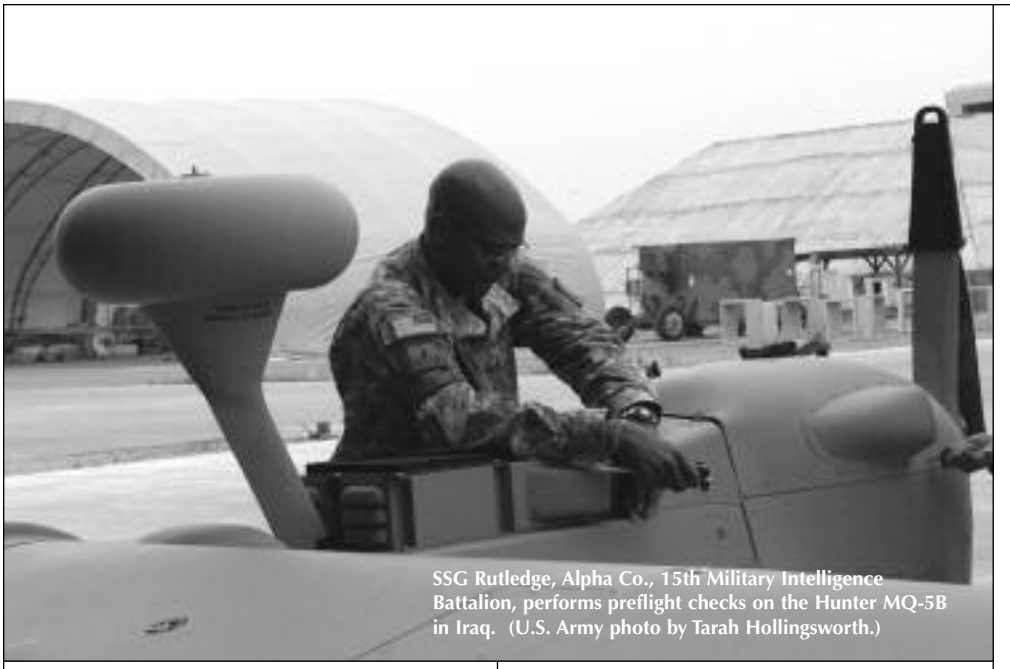
Their initial mission was to field three complete production representative systems, called Warrior A, in 6 months. This effort included procuring and producing the aircraft, providing support assets and spares as well as training Soldiers and preparing them for their deployment. Typically, this effort requires 24-28 months to complete, but the PO completed it in only 6 months. Once the aircraft deployed into theater, their follow-on mission required working with the combat aviation brigade (CAB) to validate the impact UAS had on the division's fight against IEDs.

The System

The Warrior A is a UAS composed of two aircraft, day/night camera, laser illuminator, laser designator, synthetic aperture radar, communications relay package, ground control station, satellite antennas, video dissemination equipment, and associated ground and maintenance equipment. The system is capable of both line-of-sight (LOS) and beyond-LOS operations. The aircraft's gross take-off weight is 2,250 pounds. It has a cruise speed of 70 knots, a dash speed of 125 knots, a service ceiling of 25,000 feet and an endurance of 30+ hours. The Warrior A UAS is in the ER/MP UAS class and typically performs long dwell zone, route and area reconnaissance, surveillance, target acquisition (RSTA) and analysis missions.

Getting to the Warfighter

The process of acquiring and deploying the three systems in only 6 months was a phenomenal effort and a testament to sheer determination and cooperation between the Tactical Concepts PO, other Army acquisition organizations and defense contractors. Every opportunity was exploited for pulling the program forward in the schedule, bit by bit. The entire PO team worked as a sharply focused



SSG Rutledge, Alpha Co., 15th Military Intelligence Battalion, performs preflight checks on the Hunter MQ-5B in Iraq. (U.S. Army photo by Tarah Hollingsworth.)

group to accomplish this task in such short order. PO personnel kept in constant contact with vendors to expedite the process for various subsystems and components. The PO team successfully worked through all acquisition, engineering and logistics challenges and was able to field these urgently required systems and provide a true force multiplier to combatant commanders in their immediate fight against terror. The Warrior A's RSTA capabilities would soon become the weapon of choice within the operational commanders' arsenal.

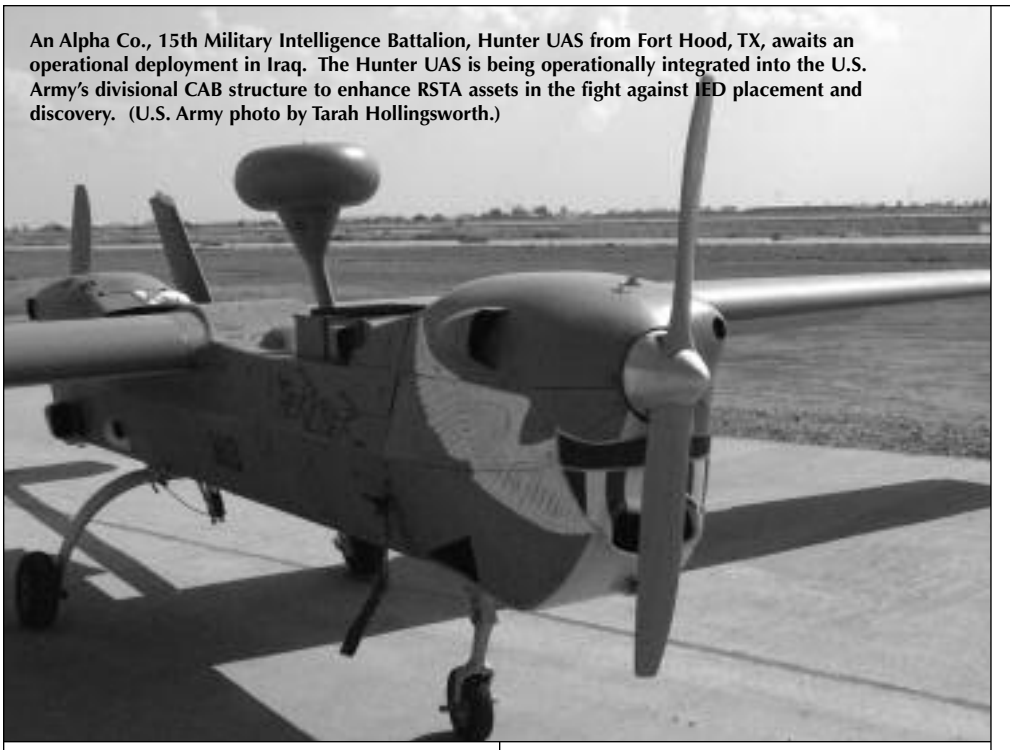
Integrating the UAS Into the CAB

Simultaneously with the Warrior A effort, we worked jointly with the 25th Infantry Division's CAB to employ a 5-phase operation to integrate the Hunter UAS and validate the various reasons divisions require dedicated RSTA assets in their fight against IEDs. *Phase I* involved integrating UAS into the Army divisional CAB structure. This was accomplished by employing the Hunter UAS in the CAB in the same manner as the ER/MP, but 2 years sooner. This resulted in two immediate benefits:

- Allowed early development of tactics, techniques and procedures (TTPs) to facilitate fielding of ER/MP companies.
- Conclusively demonstrated that dedicated UAS in direct support of tactical commanders are more effective than other task-organized relationships. Under a direct support relationship, the tactical commander can be reasonably assured he will have the assets he needs when he needs them. The UAS can be integrated into the scheme of maneuver and dynamically retasked as the operation unfolds.

Phase II involved using UAS for reconnaissance and security operations. An important finding was that the UAS mission must be tied to a new "find-fix-finish" construct rather than just being used in the historical intelligence, surveillance and reconnaissance mode. In this effort, the UAS follows the flight plan formulated during mission planning. Each UAS has a manned attack aircraft asset responsible for providing supporting fires. The manned asset is either on strip alert or conducting operations in the same zone as the UAS. Instead of merely relaying the discoveries to a central command location for disposition, the intelligence information is provided as a target handover directly to a manned attack aircraft that can provide the force necessary to neutralize or eliminate the enemy target(s). A critical advantage to this approach is decreasing the sensor-to-shooter time or kill chain. Previously, when manned attack aircraft located a target, they would have to complete the rules of engagement (ROE) while being exposed to potential enemy fire. But with this manned/unmanned mission scheme, once the UAS locates the target, ROE can be completed while the

A Warrior A UAS sits fueled and ready to deploy to assist troops in Iraq. (U.S. Army photo by Tarah Hollingsworth.)



An Alpha Co., 15th Military Intelligence Battalion, Hunter UAS from Fort Hood, TX, awaits an operational deployment in Iraq. The Hunter UAS is being operationally integrated into the U.S. Army's divisional CAB structure to enhance RSTA assets in the fight against IED placement and discovery. (U.S. Army photo by Tarah Hollingsworth.)

manned aircraft is en route. As a result, once the attack aircraft is in range, it merely has to verify the appropriate target before launching missiles or other means of attack, thereby minimizing its exposure to counterattack and significantly increasing the aircrew's survivability.

Phase III consisted of fielding the first Communications Relay Payload in UAS history while conducting combat operations. This significant accomplishment increased the commander's command and control, and extended the range of communication across the operational environment by an additional 195 kilometers, greatly enhancing situational awareness.

Phase IV provided for using UAS as part of laser operations. This activity provided an enhanced laser designation capability for manned aircraft in combat operations. Previously, when enemy targets were located by UAS, manned attack aircraft were sent to the intended destination to locate the target, laser designate it and then fire missiles to eliminate the target. While it was a very useful technique, it inherently exposed U.S. aircraft to enemy fire. However, through a manned/unmanned teaming approach, the risk to our manned aircraft is greatly reduced. In performing its normal mission, the UAS can locate the target a great distance forward of the manned aircraft, laser designate the target and allow our attack aircraft to launch its laser guided missiles without exposing crews to hostile fire. Employing UAS in this manner serves as a force multiplier and provides warfighters with other methods to tactically engage enemy targets.

> Each UAS has a manned attack aircraft asset responsible for providing supporting fires. The manned asset is either on strip alert or conducting operations in the same zone as the UAS.

Phase V provided for direct UAS attack operations. This involved fielding a Viper Strike munitions capability on the Hunter UAS for the first time in a war zone. This demonstrated that the UAS can provide the commander the ability to engage high-value fleeting targets, as well as those that require long dwell times before they expose themselves.

"Providing these enhanced capabilities to our combatant commanders and their Soldiers has proven to be such a resounding success that the Army has funded another system to provide dedicated tactical assets that can be employed at the division level," explained COL Don Hazelwood, Project Manager UAS PO, Program Executive Office for Aviation. "While this 5-phase approach is helping the Army define its TTPs for UAS employment, the full benefits that UAS bring to the warfighter today will not be known for years to come."

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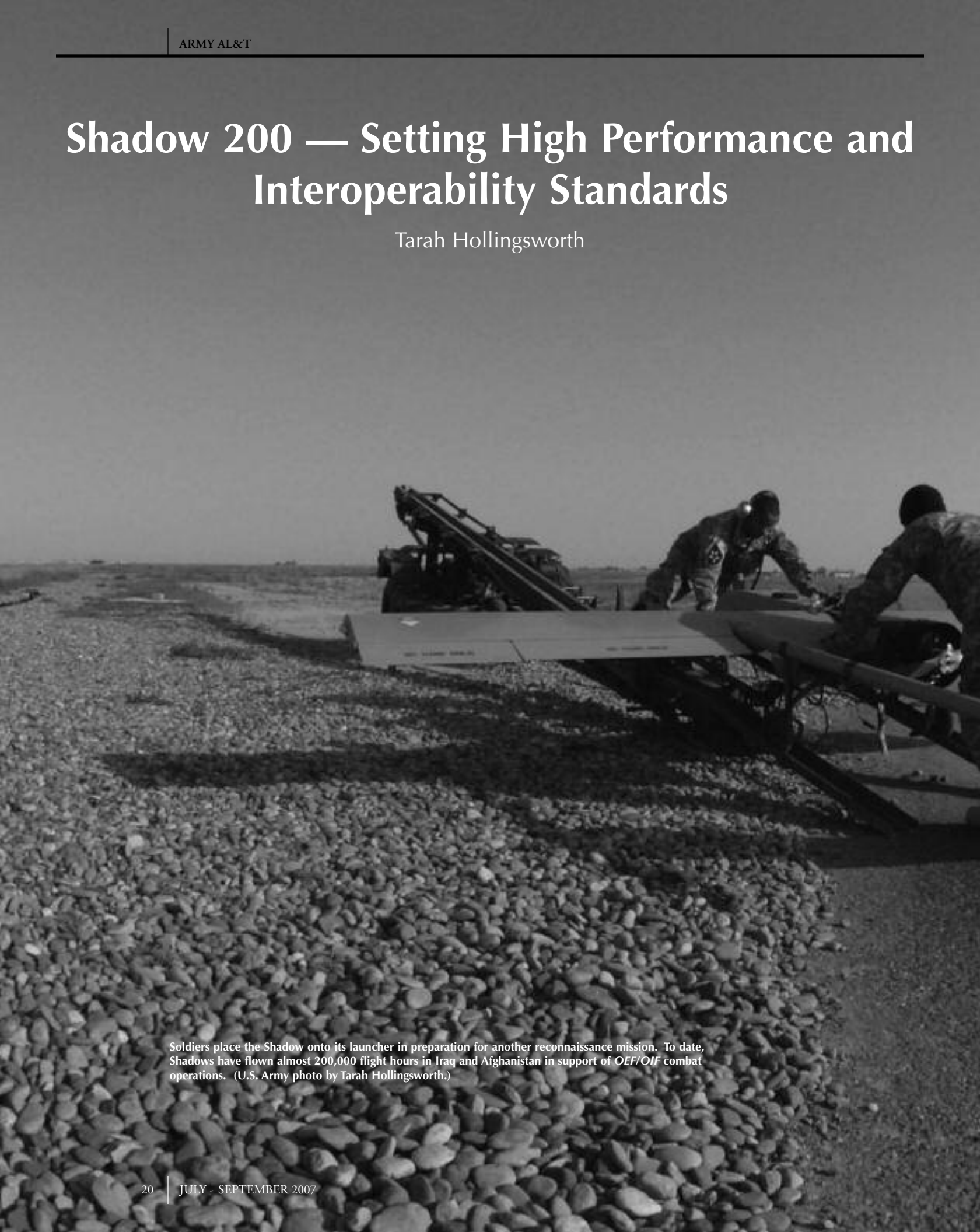
STEVE CAPPS is an Engineer in the Business Management Division, UAS PO. He holds a B.S. in industrial engineering from Tennessee Technological University and is Level III certified in program management. Capps has more than 21 years' experience in the development and acquisition of Army UAS.

Shadow 200 — Setting High Performance and Interoperability Standards

Tarah Hollingsworth



Soldiers place the Shadow onto its launcher in preparation for another reconnaissance mission. To date, Shadows have flown almost 200,000 flight hours in Iraq and Afghanistan in support of *OEF/OIF* combat operations. (U.S. Army photo by Tarah Hollingsworth.)

The Shadow 200 RQ-7B Unmanned Aircraft System (UAS) has blazed a path in the UAS industry. What once was a concept has now become the most flown UAS in the world, racking up more than 170,000 flight hours, with over 150,000 combat hours in Iraq and Afghanistan. The surge of military troops in Iraq has created an even bigger surge in Shadow flight hours. With no slow down in sight, units are now flying more than 8,000 hours per month, a number that was unfathomable just 2 years ago. With units flying 6 to 10 times the operational rate anticipated, it is the dedicated acquisition and logistics professionals using proven processes that are delivering the latest technology to our warfighters where and when they need it most.

Since being fielded in 2003, the Shadow program has moved to the forefront of military technology and integration, creating a product that consistently exceeds warfighter expectations. In the last 2 years, Shadow Platoon fieldings have tripled to the point where the Army now has fielded more than 50 Shadow Platoons (over 216 aircraft), is operational on 4 continents and is directly supporting *Operations Enduring* and *Iraqi Freedom (OEF/OIF)*. A Shadow system includes three aircraft (plus one operational float), two ground control stations, a launch trailer, support vehicles for equipment, and additional equipment spares and parts.

Shadow users are experiencing exciting times as U.S. Army units find new uses for this versatile technology. In 1999, the Army granted a contract to AAI Corp. to fulfill its requirement for a tactical UAS that could loiter for a minimum of 4 hours, had daylight and infrared optics and had a range of approximately 50 kilometers. By August 2002, Shadow RQ-7A was in low-rate production. It soon became the first Army UAS to complete Initial Operational Test and Evaluation.

In 2003, Shadow deployed to Iraq to support the global war on terrorism. Commanders were enthusiastic about

SPC Williams preflights a Shadow UAS prior to launching. The Army has fielded more than 50 Shadow Platoons to meet commanders' operational requirements on 4 continents. (U.S. Army photo by Tarah Hollingsworth.)

the synergy gained with UAS watching over the troops on the ground. As one of the most requested unmanned aircraft in theater, the Army made improvements to the system and introduced the RQ-7B in 2004. The most significant upgrades were improving the onboard computer system that improved target acquisition capabilities. In addition, the wing span was expanded by approximately three feet, which increased endurance to almost 6 hours. The wing extension meant more fuel could be stored in the wings. The improvements increased the range to 125 kilometers. Later, the camera package was upgraded to the POP 300 with the Laser Pointer. As the Shadow's military utility became more apparent, commanders insisted on getting more tactical UAS imagery fed into their tactical operations centers (TOCs).

Identifying possible improvised explosive device emplacements, monitoring known or suspected enemy insurgents and guiding ground troops out of harm's way is a daily mission for dedicated Shadow crews in theater. The Laser Pointer (not to be confused with a Laser Designator) was fielded with the POP 300 camera package. The Laser Pointer allows the Shadow to display a laser light, visible only through night vision goggles, that is approximately three feet in diameter on the ground. The Laser Pointer has proven to be one of the most effective tools for saving troops in battle, especially in complex urban terrain. Shadow teams have led many Soldiers around enemy strongholds and have positively identified targets that are attacked by air or ground assets.

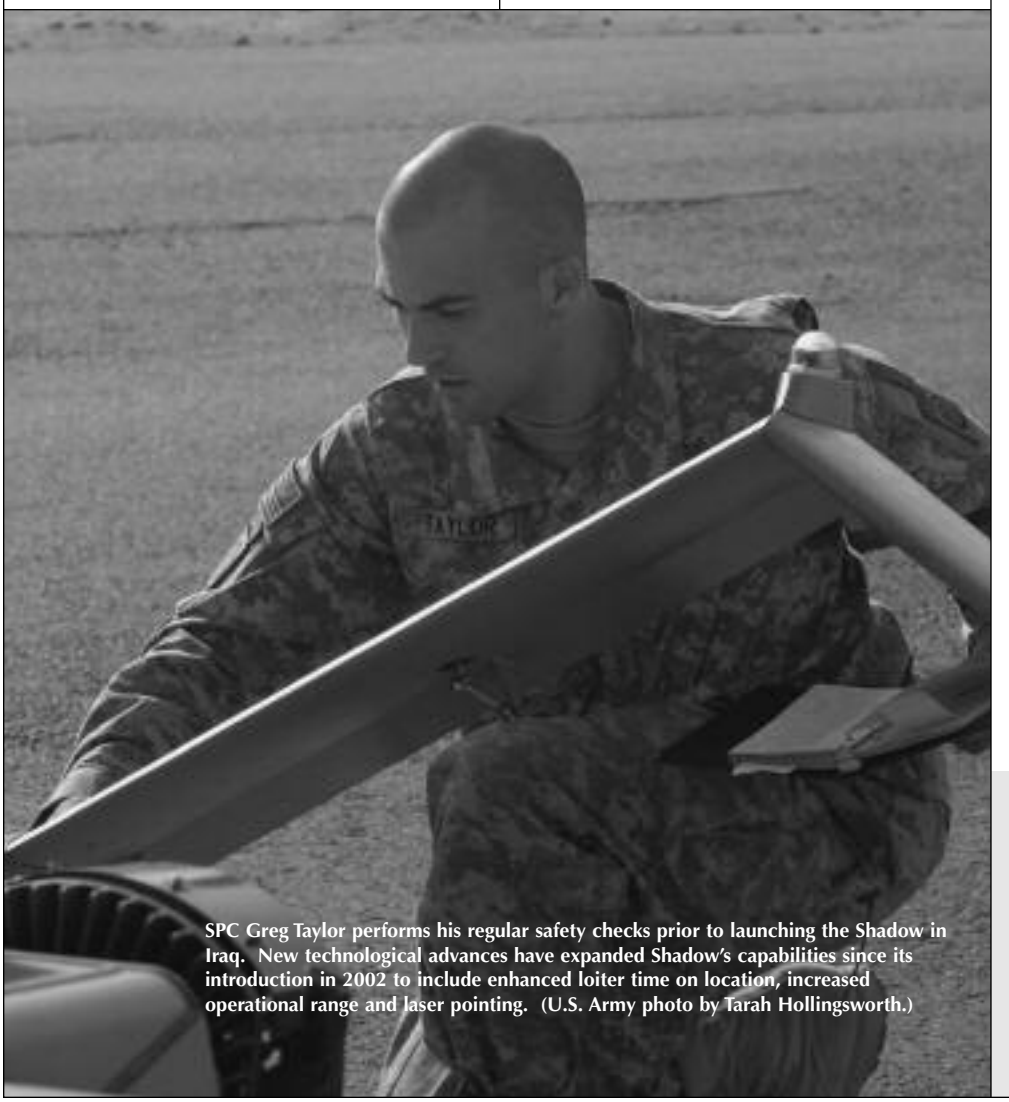
> Since being fielded in 2003, the Shadow program has moved to the forefront of military technology and integration, creating a product that consistently exceeds warfighter expectations.

With the increasing demand for Shadow's full-motion video, the program relies heavily on the involvement and commitment of the entire UAS Project Office (PO). While sustaining Shadow systems in Iraq and Afghanistan, the Shadow program has become a recognized leader in making a Performance-Based Logistics (PBL) strategy work during war time

and in harsh desert and mountain environments. This could not have been done without the PO's strong focus on Total Life Cycle Management. Shadow was one of the first programs to adopt PBL at the system level and has achieved significant cost avoidance and high operational readiness while meeting the unforeseeable demands of war.

> Shadow was one of the first programs to adopt PBL at the system level and has achieved significant cost avoidance and high operational readiness while meeting the unforeseeable demands of war.

The Shadow program's success has the other services and foreign militaries lining up to purchase the Shadow and emulate the Army's approach to Shadow management and employment. In early 2007, the U.S. Marine Corps (USMC) decided to acquire Shadow to replace an aging Pioneer UAS fleet. Shadow's capabilities and capacity are similar to Pioneer, so the transition should go smoothly. In addition to the USMC announcement of its initial Shadow acquisition plan, the U.S. Navy's VC-6 Squadron will operate two Shadow systems in support of *OIF*. The Army trained the Navy Pioneer operators in late Spring 2007.



SPC Greg Taylor performs his regular safety checks prior to launching the Shadow in Iraq. New technological advances have expanded Shadow's capabilities since its introduction in 2002 to include enhanced loiter time on location, increased operational range and laser pointing. (U.S. Army photo by Tarah Hollingsworth.)

OEF and *OIF* are really the first battles in which such dependable unmanned aircraft support has been available. The Shadow is seen as a breath of fresh air for those who remember previous wars and the communication breakdowns that are often experienced in the heat of battle. Currently, Shadow imagery is streamed into TOCs around Iraq and Afghanistan. SSG Larry Bennett works in the TOC at Mosul, Iraq. He said, "The first thing I do every day is check that the Shadow video feed is on the big screen so I maintain immediate situational awareness."

It isn't surprising that the Army has been the UAS leader. It flies 90 percent of the UAS missions in Iraq. The Shadow System is fielded at the brigade combat team level, which makes it highly accessible to warfighters and fellow aviators alike. CW3 John DePalo, Kiowa OH-58 pilot, flies every night in Northern Iraq. "I use them [Shadow] every single day. By using Shadow, I've reduced the time to track, launch and destroy targets to as little as 17 minutes, a task that used to take an hour or more," DePalo concluded. The Shadow is reducing the potential risks that pilots in Iraq might have to take to accomplish their mission. Aircrew safety and improved lethality is something you can't put a price tag on. Shadow's demonstrated performance and interoperability capabilities are dramatically enhancing U.S. force responsiveness theaterwide.

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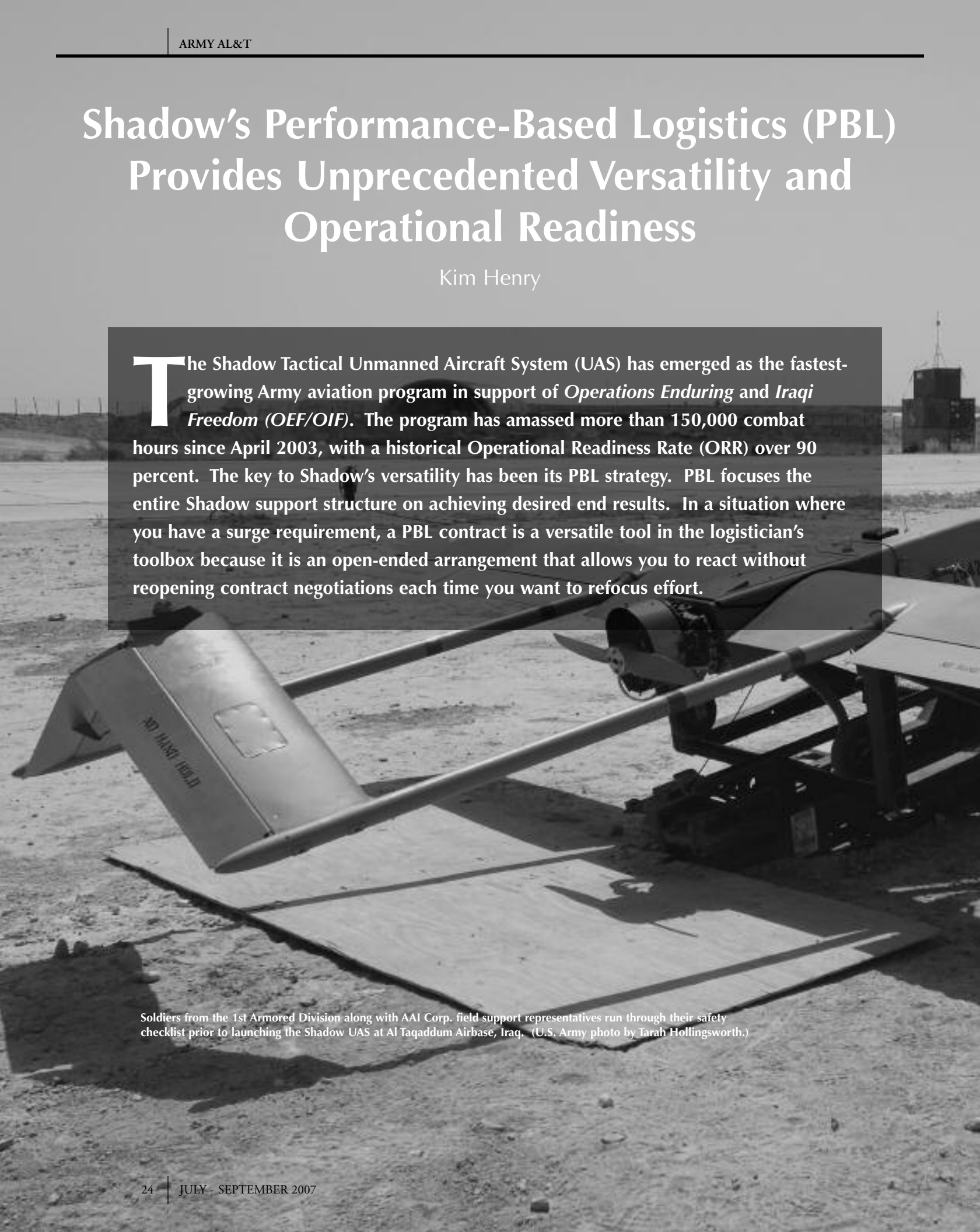
Shadow's Performance-Based Logistics (PBL) Provides Unprecedented Versatility and Operational Readiness

Kim Henry

The Shadow Tactical Unmanned Aircraft System (UAS) has emerged as the fastest-growing Army aviation program in support of *Operations Enduring* and *Iraqi Freedom (OEF/OIF)*. The program has amassed more than 150,000 combat hours since April 2003, with a historical Operational Readiness Rate (ORR) over 90 percent. The key to Shadow's versatility has been its PBL strategy. PBL focuses the entire Shadow support structure on achieving desired end results. In a situation where you have a surge requirement, a PBL contract is a versatile tool in the logistician's toolbox because it is an open-ended arrangement that allows you to react without reopening contract negotiations each time you want to refocus effort.



Soldiers from the 1st Armored Division along with AAI Corp. field support representatives run through their safety checklist prior to launching the Shadow UAS at Al Taqaddum Airbase, Iraq. (U.S. Army photo by Tarah Hollingsworth.)

"The unique thing about Shadow is how much we've been able to do in Iraq because of PBL," said LTC Keith Hirschman, Shadow Product Manager (PM). "We are quicker to react because of PBL."

Improving Business Processes

To fully understand PBL, it helps to look at Contractor Logistics Support (CLS), which is a common method of doing business today and is one of many product support methods the PM has at his disposal. The classic method for using CLS is transaction-based. How many items do you think you'll need — here's the amount. For example, you may buy 10 engines for repair, based on historical data that you hope to use. This can cause a lot of supply chain waste or inventory that must be managed and accounted for.

"In order for CLS to work well, you have to be excellent at forecasting demand in a turbulent environment with many unknowns," explained Tim Steckel, Westar Corp. contractor, Shadow Maintenance and Supply Chain Management Chief.

"Efficient CLS relies on perfect information but can lead to the stockpiling of 'just in case' amounts," Hirschman reiterated. "For example, I think I need 10 engines, but I will buy 5 more just in case. It can also lead to lag times in product support."

The transition to PBL from CLS is one based on metrics and incentives. Larry Welker, Northrop Grumman contractor and Logistics Specialist with Shadow PM, uses a house painting analogy to illustrate the PBL process. "You want your house painted, so you

Soldiers from the 4th Infantry Division perform regular maintenance on the Shadow UAS at Camp Taji, Iraq. (U.S. Army photo by Tarah Hollingsworth.)

have a number of people bid on doing the job. You select the guy with the lowest bid. After a year the paint starts to peel, so you go back to the painter and say you want it repainted and you shouldn't have to pay because it has only been a year," Welker explains. "The painter replies that you didn't specify what kind of paint you wanted or how long you wanted the paint job to last." Had he known your priorities, he would have chosen a different kind of paint or different painters for the job.

Welker quickly points out that before looking for a paint contractor, the homeowner has to ask himself: "Do I paint the house every 3 years with lower quality paint for less or do I paint it every 10 years with a higher quality paint for more money? Should I maintain the paint job with regular touchups and regular cleaning?" In the long run there is a cost savings by going with the higher quality paint and routine care. The analogy for the PM is that the house's constant stellar appearance is the performance standard that is desired.

PBL Integration

In PBL you choose the Product Support Integrator (PSI), which could be an industry partner or an organic depot, to maintain responsibility for your product line over time. During the selection process, the PM does a core depot assessment and business case analysis to decide who should do the work. In Shadow's case, the 2003 analysis showed that the vendor, AAI Corp., would be the best choice at the time for PBL. This process is reexamined every 5 years.

"As a part of the business case analysis, we anticipated 18 to 25 percent cost reduction over the total system's life cycle," Welker remarked. Since 2003, the program has finally normalized and the PM is beginning to see the value of PBL. "For FY07 there was a 28 percent reduction. We're now beginning to see the result of our efforts, but it doesn't happen overnight," Welker said.

For Shadow, the end goals contracted through PBL were 85 percent readiness, a constant reduction in accident rates, rapid turnaround time for repairable items and overall cost reduction. Each of these incentives plays off of the others. For readiness, there are two ways the PSI can accomplish the 85 percent rate — through spares or maintenance. Buying too many spares would drive up costs, but relying exclusively on maintenance would result in long lag times in the repair chain and cause unit ORRs to falter. Within a PBL framework, the PSI must find the right balance if he is to win all of his financial incentives. Using spares just in time, and finding the right maintenance capacity, Shadow's PSI, AAI Corp., regularly achieves the PM's stated support goals for the system.

For Shadow, the end goals contracted through PBL were 85 percent readiness, a constant reduction in accident rates, rapid turnaround time for repairable items and overall cost reduction.

"We are already above a 90 percent readiness rate, but through PBL there is inherent efficiency," said Steckel. "There is also a cost reduction because you don't buy as many spares and you manage through a combination of

Soldiers from the 1st Armored Division and field support representatives from AAI Corp. prepare a Shadow UAS for launch at Al Taqaddum Airbase, Iraq. PBL implementation through the PSI has resulted in improved ORR, total life-cycle cost reduction, and greatly improved field maintenance and responsiveness. (U.S. Army photo by Tarah Hollingsworth.)

Soldiers perform post-recovery checks on a Shadow Tactical UAS after an operational mission in Iraq. Shadow lands automatically using a tactical automated landing system and is captured on the ground by an arresting gear system similar to landing onboard a ship with a tail hook. (U.S. Army photo by Tarah Hollingsworth.)

maintenance and supply. Supply chain management requires us to focus on capacity and throughput."

To reduce incident rates, there is an implication of ownership. The PSI is incentivized to exercise his own initiatives to improve product reliability and quality. In early 2006, the Shadow PM instituted an incident rate reduction metric as part of the PBL contract. The goal was to cut the incident rate by half every year, for the next 5 years. Previously, if a Shadow crashed, another aircraft was built in its place, and the Army alone bore the cost. Through the PBL contract incentives, the Army and AAI shared in the burden of incidents. AAI doesn't profit unless they achieve the metric of incident reduction. "It made our goals, their goals," Hirschman pointed out.

A great illustration of this incentive at work is the problem of unmanned aircraft crews inadvertently launching an aircraft at idle. Because the PM added the incentive to reduce incidents, AAI had to take ownership of this problem and they created a software fix that detected the air vehicle moving down the ramp at idle. The system now automatically changes to launch mode and increases to maximum revolutions per minute to maintain a safe launch. This may seem like a simple software fix, but it will play a major role in reducing mishaps and instituting corresponding cost savings.

What Does PBL Mean for the Field?

Every unit in the field has one to two depot-level support contractors to keep them going daily. The Soldiers in the field have a "maintenance mentor," an expert on the system, working next to them on site and evacuating parts as needed. Platoon leaders can talk to depot maintainers daily and get responses in a day.

"The success of Shadow is due to AAI growing their depot-level technical support in the field," Hirschman said. Even with the assistance in the field, PBL's ultimate goal is tying the PSI's profit to the customer's satisfaction. "PBL is transparent to the Soldier, as it should be. The Soldier should focus on flying," Steckel stated. "And since the Soldiers are flying at a higher OPTEMPO [operations tempo] because of war, it's important the PBL contract allow for surges in support."

"The amazing thing is that we are achieving this while we're at war with every unit flying 6 to 10 times more than we thought they would," recounted Hirschman.

"To meet all of the metrics, the PSI has to have a cost-effective process in place to meet the goals every time," Welker said. "Under PBL, when the number of systems increases, the total sustainment cost per system decreases because performance and efficiency are rewarded."

"We have a consistently high level of readiness," Hirschman remarked. "We maintain certain levels higher than most systems and haven't seen the usual time needed to move up the learning curve. Even when we have to ramp up, readiness doesn't fluctuate. There have been no huge spikes or drops and we are able to implement changes while effectiveness still remains high," he concluded.

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PM Aviation Systems — Building the Army's Strategic Interoperability Assets

COL Michelle Yarborough

The Berlin Wall's fall in 1989 symbolized the Cold War's end. As the U.S. Army addressed new types of operational warfare and actively reviewed current strategy and the lessons learned from *Operation Just Cause* in Panama (1989) and *Operations Desert Shield/Storm* in the Persian Gulf (1990/91), analyses prompted then Army Chief of Staff GEN Gordon R. Sullivan to question the Army's strategic direction for the foreseeable future. He challenged the Army to enter the Information Age through a series of small experiments that led to the Army Digitization Master Plan in January 1995.

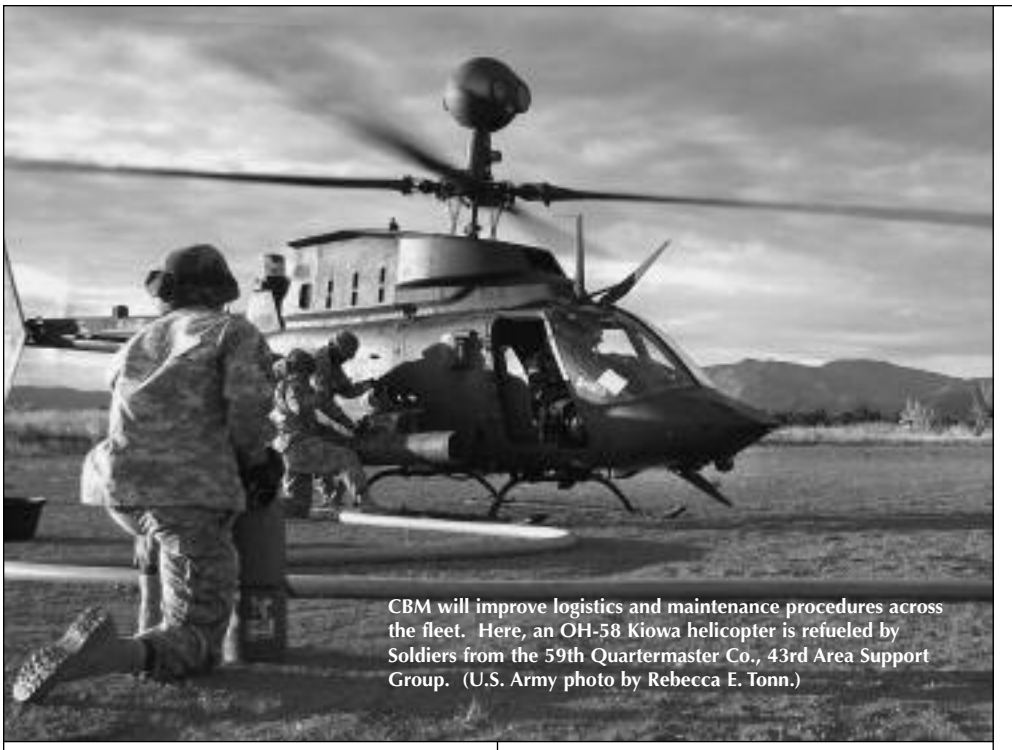
Technological advances and digital enhancements ensure helicopters like the UH-60 Black Hawk depicted here will continue to perform reliably and safely, even in the harsh operational environments found in Iraq and Afghanistan. (U.S. Army photo by SFC Robert C. Brogan.)

Although many of the terms and much of the equipment has changed since Sullivan's early vision, one cornerstone has been the Army aviation community's continuous and consistent contributions toward its success. Building upon 10 years' experience sending tactical fire text messages between scout helicopters and field artillery batteries, Army aviation has participated in nearly every field event with the OH-58D Kiowa and AH-64D Longbow Apache helicopters. Today, with more than a decade of interoperability experience, Army aviation is building upon that success as the Army begins fielding the CH-47F Chinook and UH-60M Black Hawk models with enhanced digital capabilities.

Continuing the forward-looking tradition, Army aviation has partnered with the Future Combat Systems (FCS) Program Manager to outline the path ahead for World Wide Web-like interoperability with both manned and unmanned Future Force elements while remaining compatible with Current Force systems. Leading the aviation community's interoperability efforts is Project Manager Aviation Systems (PM AS).

PM AS is the architect for Army aviation's Future Force Interoperability Strategy and is working closely with the U.S. Army Aviation Warfighting Center to bring the Aviation Data Exploitation Concept to fielded warfighting capability. Together, these organizations have developed three major initiatives toward achieving interoperability across the fleet:

- Migration to a common, compatible, transport layer enabled by the Airborne, Maritime, Fixed Joint Tactical Radio System.
- Integration of an FCS System-of-Systems (SoS) Common Operating



CBM will improve logistics and maintenance procedures across the fleet. Here, an OH-58 Kiowa helicopter is refueled by Soldiers from the 59th Quartermaster Co., 43rd Area Support Group. (U.S. Army photo by Rebecca E. Tonn.)

Environment to provide shared network-centric interoperability services with ground forces.

- Integration of FCS Battle Command and Army aviation to develop a Web-enabled environment conducive to such futuristic warfighting capabilities as Automated Network Fires.

Bringing the power of interoperability technology and integration to the logistics domain, Army aviation is implementing DOD's directions for condition-based maintenance (CBM) and Military Flight Operations Quality Assurance (MFOQA) programs to improve logistics and maintenance procedures and reduce losses through improved risk management for both manned and unmanned aerial systems. Key components of PM AS' responsibility are the installation of diagnostics and prognostics capabilities — digital source collectors (DSCs) — onboard aircraft to standardize automated transfer of data to the Standard Army Management Information System, Unit Level Logistics System-Aviation Enhanced (ULLS-AE), aircraft component analysis and an integrated aviation training, operations and logistics process to improve mission capability and mitigate risk. Ongoing projects include equipping Combat Aviation Brigades (CABs) deploying to *Operations Enduring* and *Iraqi Freedom (OEF/OIF)* with DSCs to support CBM and MFOQA and conduct an aviation Common Logistics Operating Environment Proof of Enablers demonstration. The goals are simple: increase readiness, reduce cost and maintenance man-hours, and improve safety.

In addition, PM AS manages the acquisition of three, and coordinates the roles of five, other major aviation assets to include participation in a series of large-scale SoS interoperability tests required for Army Software Block implementation at the Aviation Multi-Mission Technical Integration Facility. This capability is further enabled through the aviation community's remotely located Software Integration Labs. Aviation weapons systems undergo a series of risk-reduction test events prior to executing the interoperability evaluation conducted by the Central Technical Support Facility at Fort Hood, TX. The PM AS serves a vital role in ensuring that Program Executive Office (PEO) Aviation assets are successful in completing the Intra-Army Interoperability Certification, a key requirement for all Army systems.

The Army will soon field the CH-47F fleet of helicopters to replace the aging fleet of troop and supply carriers. Here, U.S. Army Soldiers from 3rd Battalion, 187th Infantry Regiment, 101st Airborne Division (Air Assault) conduct a joint raid with their Iraqi counterparts from the 4th Army Division last spring near Samarra, Iraq. (U.S. Army photo by SSG Alfred Johnson.)

Tactical Airspace Integration System (TAIS)

An excellent example of a key interoperability "enabler" managed by PM AS is the AN/TSQ-221 TAIS. Its purpose is to extensively automate and improve situational awareness of the Army Airspace Command and Control and Air Traffic Services (ATS) for warfighting commands and ATS companies. TAIS is an Army Battle Command System (ABCS) SoS component and provides linkage to the Joint airspace management processes within the Theater Air Ground System. TAIS automates airspace deconfliction processes from brigade to theater levels, thereby reducing to minutes a procedure that previously took hours to accomplish. Interface is coordinated through the Theater Battle Management Core System (TBMCS), the key system at the Joint level. TAIS is certified as an extension of the U.S. Air Force's (USAF's) Air Operations Center (AOC) Weapons System baseline and "plugs in" to the Joint or combined AOC network without any additional certifications or approvals, seamlessly interfacing the Army's requests for airspace with TBMCS.

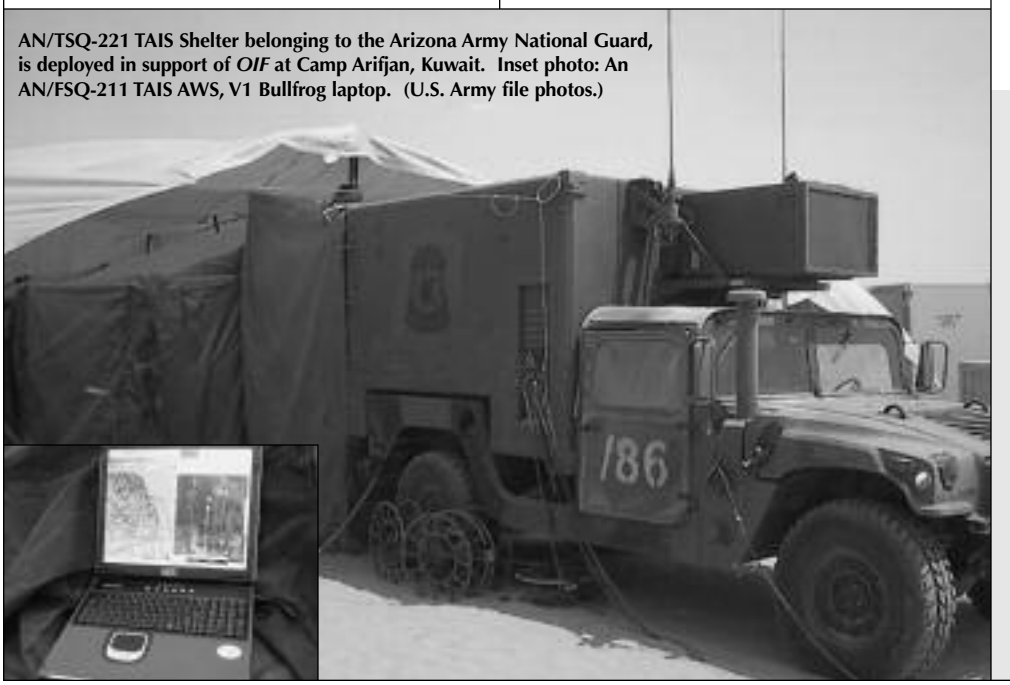
> PM AS manages the acquisition of three, and coordinates the roles of five, other major aviation assets.

The AN/TSQ-221 consists of the TAIS shelter, mobile communications, generator and various antennas. The AN/FSQ-211 TAIS Airspace Workstation (AWS) provides the same functionality as the workstations in the TAIS shelter, but without the large footprint, for deployment at locations such as Battlefield Coordination Detachments, static headquarters and training centers.

TAIS is fully interoperable with other ABCSs and battle command enablers via U.S. Message Text Format (USMTF)/Variable Message Format messaging and through publish and subscribe functionality with the battle command server. TAIS uses USMTF messaging as the primary means of interoperability for airspace control means requests, airspace control orders, air tasking orders, free text messaging and battlefield geometries. TAIS has the ability to forward and receive Multi-Tactical Data Information Link (TADIL) Air Tracks in Links 11A, 11B and 16 to support near-real-time airspace deconfliction. It can also receive, process and display Blue Force Tracker-Aviation (BFT-A) and High Frequency Tracker air tracks and, through a cursor on target interface, TAIS can forward Army BFT-A tracks to the Joint Data Network as a TADIL-J message.

TAIS has two critical interfaces that improve clearance of fires and integration of Army aviation mission planning. These are the Advanced Field Artillery Tactical Data System Missile Flight Path interface and the Aviation Mission Planning System interface, respectively. Finally, TAIS incorporates a Web-based interface that provides any command, regardless of echelon, with the capability to request airspace clearance, via the network through a Web browser. This cross-platform capability provides a net-centric and service-oriented approach to airspace management.

PM AS is heavily involved in changing the face of aviation interoperability and, through partnerships with other aviation platforms, including FCS, ULLS-AE and Army airspace command and control systems, will continue to push ahead the Army's goal of achieving maximum battlefield interoperability.



AN/TSQ-221 TAIS Shelter belonging to the Arizona Army National Guard, is deployed in support of *OIF* at Camp Arifjan, Kuwait. Inset photo: An AN/FSQ-211 TAIS AWS, V1 Bullfrog laptop. (U.S. Army file photos.)

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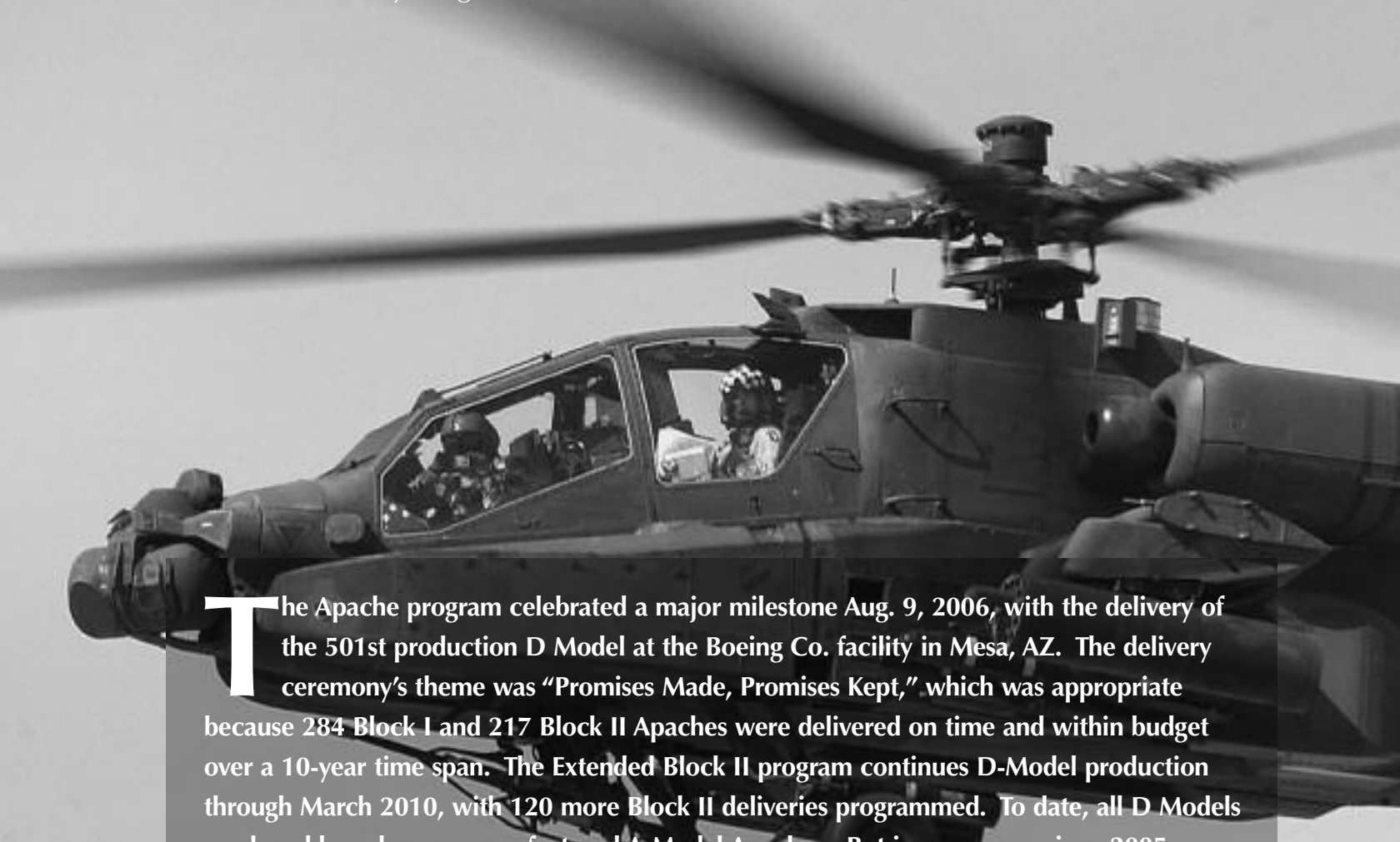
Apache Program Modernization Provides Combat Overmatch

LTC Jeffrey Hager, LTC Robert J. Johnston and MAJ Jason W. Ross



The Apache program celebrated a major milestone Aug. 9, 2006, with the delivery of the 501st production D Model at the Boeing Co. facility in Mesa, AZ. The delivery ceremony's theme was "Promises Made, Promises Kept," which was appropriate because 284 Block I and 217 Block II Apaches were delivered on time and within budget over a 10-year time span. The Extended Block II program continues D-Model production through March 2010, with 120 more Block II deliveries programmed. To date, all D Models produced have been remanufactured A Model Apaches. But in every year since 2005, Congress has appropriated and authorized the procurement of "new build" wartime replacement aircraft. In July 2007, the Army accepted the first-ever new-build D Model Apache, and 45 replacement aircraft have been approved through supplemental funding. Those aircraft will be delivered concurrently with remanufactured aircraft over the next 2½ years.

AH-64D Longbow Apache helicopter manufacturing upgrades include Fire Control Radar, enhanced Hellfire air-to-ground missile capacity, updated T700- GE 701D engines, M-TADS/PNVS system and overall improved survivability, communications and navigation capabilities. Here, U.S. Army Soldiers from Bravo Co., 1st Battalion, 101st Aviation Regiment, provide security from an AH-64D during an air assault mission near the Syrian border in Iraq, March 6, 2006. (U.S. Air Force photo by SSGT Aaron Allmon, 1st Combat Camera Squadron.)

Throughout the production run, improvements to the Apache fleet were incorporated. In the last 4 years alone, a digital map, a high-frequency (non-line-of-sight) radio, Blue Force Tracker radio/display, GE 701D engines, Internal Auxiliary Fuel System and the Modernized Target Acquisition Designation Sight (M-TADS) have been cut into the production line. The software has been updated to stay in communication on the digital battlefield in accordance with the Army's Software Blocking program. Other important software enhancements have also been incorporated with lessons learned from the global war on terrorism (GWOT). Critical wartime enhancements, such as the Common Missile Warning System, have been retrofit to Apaches in the field. The Modernized Signal Processing Unit is reducing the workload on the Soldier and is the "black box" to enable Condition-Based Maintenance on the Apache. The Aircraft Survivability Product Improvement has incorporated passive measures to significantly reduce the aircraft's vulnerability to threat systems.

To keep the Apache the most lethal attack helicopter in the world, additional enhancements are programmed for the Extended Block II program. The most significant enhancement planned is the integration of all aircraft survivability equipment information into a single display that will allow for the immediate targeting of threat systems. Another enhancement planned for post-production modification is the incorporation of the ARC-231 satellite radio. Plans to receive video from unmanned aircraft systems (UAS) (Level II UAS control) and send M-TADS video to ground stations are also underway.

The Longbow Crew Trainer (LCT) continues to serve as the only aircrew simulator deployed to combat. The LCT provides Apache commanders a unique capability to rehearse an actual mission in a cockpit or to review critical emergency procedures that cannot be conducted in the aircraft. Just like the aircraft, enhancements to the LCTs are taking place on a continuous basis. A new threat server, M-TADS functionality and an integrated Iraq geographical database have been incorporated in the past few years.

New 'Eyes' for Apache

Since the mid-1980s, Apache helicopter crews have completed their missions using the Targeting and Designation Sight[ing], Pilot Night Vision Sensor (TADS/PNVS). This technology serves as the platform's "eyes," enabling its aircrews the ability to fly the aircraft and detect and destroy enemy targets in night and adverse weather conditions. Over the years, this technology has clearly proven to be a combat multiplier but has not kept pace with advancements in sensors technology. Senior Army leadership, in response to warfighting lessons learned, field commanders' input and Army logisticians' input, responded by prioritizing and resourcing an effort to modernize the legacy TADS/PNVS Apache system.

Based on Standard Advanced Dewar Assembly I detector technology, the M-TADS/PNVS is the most technologically advanced and capable sensor in any helicopter worldwide.

The acquisition process responded and — in a little more than 7 years — created, produced and is now fielding a brand new set of "eyes" for the Apache known as the M-TADS/PNVS system. Based on Standard Advanced Dewar Assembly I detector technology, the M-TADS/PNVS is the most technologically advanced and capable sensor in any helicopter worldwide. To date, the Army has fielded two M-TADS-equipped battalions and is in the process of fielding two additional battalions to operate in *Operations Enduring* and *Iraqi Freedom (OEF/OIF)* by November 2007. At the current production rate, the Army expects to have its entire Longbow fleet retrofitted with M-TADS by the end of 2010.

The M-TADS/PNVS modification program is the Army's initiative to:

- Provide our Apache aircrews 2nd generation forward looking infrared technology.
- Reduce fleetwide operations and support costs.
- Reduce the maintenance burden on our Apache maintainers.

The Army achieved its M-TADS First Unit Equipped in June 2005. The first unit has amassed well over 15,000 operational flight hours, and the pilots and maintainers are thrilled with the system's performance. A second equipped unit is now outfitted and is preparing for an upcoming deployment. Aviation commanders have reported that the effect of this modernization is so great that new tactics, techniques and procedures are under evaluation to better exploit this tremendous capability. Commanders on the ground are equally impressed and are learning that the Apache can now support them at significantly greater standoff distances.

Maintenance of the M-TADS/PNVS system is enhanced and made easier by an improved built-in test (BIT) and a 2-level maintenance concept. By contract and by design, the BIT is required to identify the failed component — Line

The LCT provides Apache pilots a unique capability to rehearse actual missions from the cockpit of their helicopters. This aircrew simulation trainer is currently deployed to Iraq and Afghanistan. (U.S. Army file photo.)

Replaceable Unit (LRU) — in the first callout 90 percent of the time. The 2-level maintenance concept is a significant paradigm shift wherein a unit will no longer have to stock a significant number of LRUs. M-TADS is supported under an "it takes one (a turned-in component) to get one (new component) system." This support concept also recently became a contractual agreement between the Apache Project Management Office and Lockheed Martin, the M-TADS manufacturer. The contract is a performance-based logistics (PBL) agreement and includes the entire M-TADS product line as well as all legacy system components. PBL will greatly enhance the logistical system's responsiveness and coverage. Soldiers will turn in failed sensor components at their designated Supply Support Activity (SSA) and receive a replacement within an incentive-based performance goal. For example, an 01 to 03 priority must be filled (part available at the SSA) within 48 hours.

Clearly, M-TADS/PNVS provides our Apaches of today with a new set of "eyes." This system, along with many other planned/programmed upgrades, postures the aircraft for many more years of success in providing our aircrews with the technological supremacy they need to survive and win the GWOT.

Apache Block III (AB3)

AB3 is the Apache's next generation aircraft and is in development now. AB3 will address obsolescence issues and add capability, thereby ensuring that the aircraft is a viable combat multiplier within the Army's Future Combat Force through 2030. The cornerstone to the AB3 program is the insertion of mature technologies into a proven weapon system platform. Consequently, AB3 is primarily an integration effort and not a new technology development. AB3 will address current and future system shortfalls by integrating:

- Level IV UAS control with targeting and data transfer capability.
- Improved situational awareness.
- An upgraded communications suite.
- Improved drive and propulsion systems.
- Improved targeting capability.
- An electronic system re-architecture with enhanced computer processing capability.
- Improved navigation systems.
- Improved diagnostics and maintainability.

Because the AB3 effort is not specifically developing new technologies, the DOD Acquisition Executive allowed the program to bypass Milestone A and enter System Development and Demonstration (SDD) at Milestone B. This critical milestone was achieved with a successful Defense Acquisition Board on June 28, 2006. Subsequently, SDD contracts were awarded to the Boeing Co. on July 14, 2006, and the Longbow Limited (LBL) Liability Corp. (a joint venture between Lockheed Martin and Northrop Grumman) on Sept. 29, 2006.

As the aircraft manufacturer, Boeing is the lead systems integrator, whereas LBL will specifically address obsolescence and system improvements associated with the Fire Control Radar (FCR). Additionally, LBL will develop the UAS

To date, the Army has successfully fielded two M-TADS-equipped battalions and will field two more by November 2007 to support *OEF/OIF* combat operations in Afghanistan and Iraq. Here, a 10th Combat Aviation Brigade, 10th Mountain Division (Light) AH-64 Apache helicopter refuels in Jalalabad, Afghanistan, last January. (U.S. Army photo by SSG Marcus J. Quarterman, 982nd Signal Co. (Combat Camera).)

M-TADS, AB3 and other technological advancements ensure that the AH-64D Longbow Apache helicopter remains the world's preeminent attack helicopter. Here, SPC Kevin Jones talks to a 1st Battalion, 101st Aviation Regiment aircrew before they take off from Forward Operating Base Speicher, Iraq. (U.S. Air Force photo by TSGT Andy Dunaway, 1st Combat Camera Squadron.)

control capability and integrate it within the FCR Electronics Unit and the associated Mast Mounted Assembly.

Limited computer processing capability is the primary factor preventing electronic improvements or enhancements within the current Block I and Block II Apache fleets. AB3 will design the onboard mission computing network to an open system standard and replace six technologically obsolete computers with two powerful new mission processors. This single improvement will save weight and address equipment obsolescence, opening the door for other major electronic enhancements that would otherwise be impossible to implement in older Apaches. The AB3 improvements not dependent on aircraft computer upgrades are new composite main rotor blades, a new main transmission system and the 701D engine for commonality with the UH-60M Black Hawk. The combination of these three improvements will be the primary factors enabling AB3 to meet its Key Performance Parameter mandating increased aircraft performance.

The primary AB3 enhancement actually allowing warfighters the flexibility to change how Apache fights is Level IV control of UAS. The benefits of UAS capabilities are being proven on a daily basis in real-world combat operations. With actual UAS imagery displayed in the AB3 cockpit, a Hellfire missile can be launched as soon as an enemy target is verified by the Apache crew. Consequently, a complete level of communication coordination and the associated timelines are eliminated. The potential benefits of an AB3 with Level IV UAS control are tremendous and may not be fully realized until the system is actually fielded.

The Apache team continues to strive to modernize the aircraft by continuing to provide aircrews the combat overmatch for which the Apache is famous. M-TADS, AB3 and a host of other technological development efforts are either being fielded or are on the way to ensure the Apache retains its place as the world's preeminent attack helicopter today and well into the 21st century.

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LTC ROBERT J. JOHNSTON is the PM Longbow Apache. His holds a B.S. in mechanical engineering from the U.S. Military Academy and an M.S. in aeronautical engineering from the Georgia Institute of Technology. Johnston was an honor graduate from the U.S. Army's Aviation Flight School and now is a dual-rated Master Aviator with more than 2,500 flight hours in 28 different aircraft.

MAJ JASON W. ROSS is the Assistant Program Manager for Apache Sensors, which includes responsibilities for management of the M-TADS/PNVS. He has a B.S. in geopolitics from the U.S. Military Academy. Ross is a Ranger-qualified Infantry Officer and 2-time Iraq service veteran. He has also served one tour of duty in Afghanistan.

Lessons in Outsourcing — CH-47F Design and Production Effort Initiatives

Russ Dillard, Brian Hite and Chris Wilson

Since the late 1960s, the CH-47 Chinook has remained the Army's only heavy-lift helicopter on the battlefield. The new CH-47F Improved Cargo helicopter was developed and is beginning production to address the current age of the CH-47D fleet and close the technology gaps between its capabilities and warfighters' current needs for communication and situational awareness. The CH-47F includes improvements such as a digital cockpit, digital automatic flight control system, monolithic machined structure and reduced structural vibration. Boeing Helicopters, the prime contractor, is meeting the challenge of managing a mixed-model production line while producing our F model, the MH-47G model for the Technical Applications Project Office and a limited number of CH-47s for various foreign military sales (FMS) and direct sale customers.

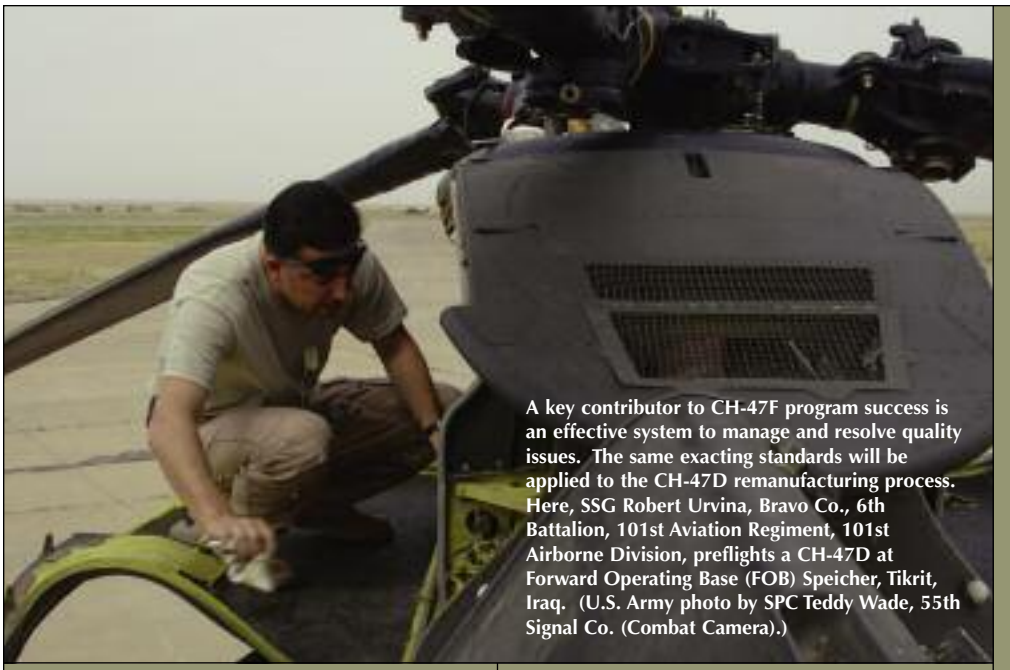
Continuing operational and environmental challenges have led to the development of a new CH-47F Improved Cargo helicopter to better address Soldier requirements. The new CH-47F has improved digital cockpits and digital automatic flight control systems. (Photo by Mark Casey, U.S. Army Aviation Technical Test Center Flight Test Engineer.)

Like most programs, product configuration has been changing since its inception. Initially, new-built aircraft were going to incorporate the newly designed monolithic machined frame, and remanufactured aircraft would use salvaged airframes from D model aircraft inducted from the field. After producing two CH-47F Engineering, Manufacturing and Development aircraft, plans were in place to produce seven more remanufactured F model aircraft during the program's low-rate initial production (LRIP) phase. However, because of a more immediate need for current CH-47 aircraft, LRIP was cut to one aircraft. Prior to the first LRIP F model, a business case was presented to have all CH-47Fs built with the new machined structure and eliminate the need for salvaged D model airframes. The production schedule shift afforded the CH-47F program the opportunity to take advantage of this change. Additionally, the prime contractor made the process more economically feasible by outsourcing specific areas.

Shifting this workload from the prime contractor to suppliers with specific core competencies has contributed directly to the CH-47F program's success. In this article, we discuss how open communication and early coordination can prevent potential problems with outsourcing in the areas of aircraft design, production and inventory management.

Communicate and Coordinate During System Design Outsourcing

The CH-47F program used varying design concepts in different airframe sections to incorporate past improvements



A key contributor to CH-47F program success is an effective system to manage and resolve quality issues. The same exacting standards will be applied to the CH-47D remanufacturing process. Here, SSG Robert Urvina, Bravo Co., 6th Battalion, 101st Aviation Regiment, 101st Airborne Division, preflights a CH-47D at Forward Operating Base (FOB) Speicher, Tikrit, Iraq. (U.S. Army photo by SPC Teddy Wade, 55th Signal Co. (Combat Camera).)

from direct commercial sales and new improvements designed to address structural issues the Army experienced. We enlisted support from an experienced aircraft design contractor for a redesign of the aft section. The contractor completed this new design using 3-D models created with Unigraphics®. The design methods for the cabin section differed in that we primarily used legacy designs, which used 2-D drawings that were shared with previous FMS, direct commercial sales and D model aircraft. We also chose to redesign some of the aircraft's cockpit sections at the prime contractor using Catia V4. The decision to use a combination of design sources and tools instead of a common method was influenced by funding and schedule requirements.

Prior to the work they performed on the CH-47F, the aft section designers had experience with fixed-wing aircraft design. The paradigms for designing fixed-wing aircraft aerodynamics are different than those of rotorcraft design, but these differences were not apparent until late in the assembly process. We found that the outside surface of the first few newly designed aft sections did not fit within tolerance when spliced to the cabin sections. If a common software package had been used for aft and cabin section design, we may have been able to prevent the mismatch of these major sections. In addition, increased coordination between the two design groups regarding the expected ground rules for structural design might have prevented the oversight earlier in the process. If the choice is made to outsource design, it is suggested that you should establish common tools and paradigms. If circumstance warrants that this is not possible, be aware that there may be some trade-offs with the need for greater coordination during the design process.

CH-47 Chinook helicopter integrated inventory management systems will significantly reduce lost, mishandled or late material. Here, a CH-47D crew chief preflights a CH-47D Chinook helicopter at FOB Summerall, Iraq, last summer. (U.S. Army photo by SSG Alfred Johnson, 55th Signal Co. (Combat Camera).)

Provide Continuous Feedback During Production Processes Outsourcing

Along with outsourcing some design effort, the prime contractor also chose to outsource some production processes as well. One outsourced process was the cabin section subassembly. Periodically, the subcontractor had difficulty interpreting the legacy drawings because they were not familiar with the prime contractor's system. However, they were required to manage structural part configuration for which they had production responsibility. Initially, the system used to manage the ongoing changes to configuration lacked the proper checks and balances. Because of this, we experienced some configuration issues involving fasteners and materials. The program's quality-monitoring processes captured these issues and drove corrective action back to the problems' origins. This emphasizes the importance that feedback occurs to acknowledge a change was received, understood and incorporated. An outsourcing effort of this nature requires significant engineering support and oversight early in the process to minimize problems during production start-up.

Shared Knowledge From Past Experience on Outsourced Production Processes

The prime contractor also chose to outsource the aft section subassembly. The subcontractor was provided with 3-D models from the recent aft section design. They were familiar with using these software models in the work they had performed for other programs and,

AMRDEC is leveraging the production, manufacturing and logistics maintenance capabilities of its industry partners to develop the new CH-47F Chinook helicopter and remanufacture the current fleet of CH-47Ds. Here, SPC Tim Parson, A Co., 7th Battalion, 158th Aviation Regiment, provides security aboard a CH-47D Chinook en route to several FOBs near Naray, Afghanistan, last January. (U.S. Army photo by SSG Michael L. Casteel, 982nd Signal Co. (Combat Camera).)

as a result, the aft section production contractor was able to apply lean concepts in a green field approach to the assembly process. Taking a fresh approach resulted in meeting the program's expectations for quality and schedule performance. However, one weakness in taking a new approach is that tribal knowledge of the production process is often missing and the loss of such knowledge may not be evident until production problems arise. During ramp-up to full-rate production, the CH-47F program experienced some of these production problems because of a lack of assembly process experience. Many of these problems may have been overcome earlier in the production process if experience with aft section assembly processes had been retained.

Integrate Systems for Resolving Quality Issues

One key contributor to the CH-47F program's success has been the use of an effective system to manage and resolve quality issues. The cabin and aft section assembly contractors are the two major suppliers for the program's structural parts, and both use systems that are integrated with the prime contractor's production quality system. The process is a formalized way of communicating, documenting and resolving any nonconformance that occurs in the manufacturing process. This process has allowed us to resolve discrepancies without a significant impact to the production line.

Integrate Inventory Management Systems When Outsourcing Logistics Functions

Inventory management was also outsourced. A third-party logistics contractor was tasked with warehousing the contractor- and government-furnished equipment used in CH-47F production. They also built up point-of-use kits for the prime contractor's assembly processes, enabling the workforce to easily determine what parts were needed for assembly based on work instructions. The transformation to point-of-use kitting has helped to eliminate time wasted searching for required material. Outsourcing these services also allowed the prime contractor to concentrate on its core competencies — rotorcraft design and assembly — rather than inventory management. As a lookout, it is essential to fully integrate the manufacturer's purchasing and manufacturing execution systems with the third party's logistics warehouse management system. If these systems cannot communicate correctly, there is an inherent potential for lost, mishandled or late material.

Open and early communication is a vital contributor to any program's success. Program managers and their teams must make a concerted effort at the program's beginning to break down barriers between the government and its respective contractors to ensure that communication lines are open and adequate. These lines of communication and relationships will require maintenance throughout the program's life cycle. When you choose to take advantage of the benefits of outsourcing, understand that communication becomes more difficult because of the natural barriers that exist between companies. Breaking down these barriers will help ensure that you leverage full advantage of your partnerships. In turn, this will help DOD develop and field effective products for our warfighters where and when they need them most.

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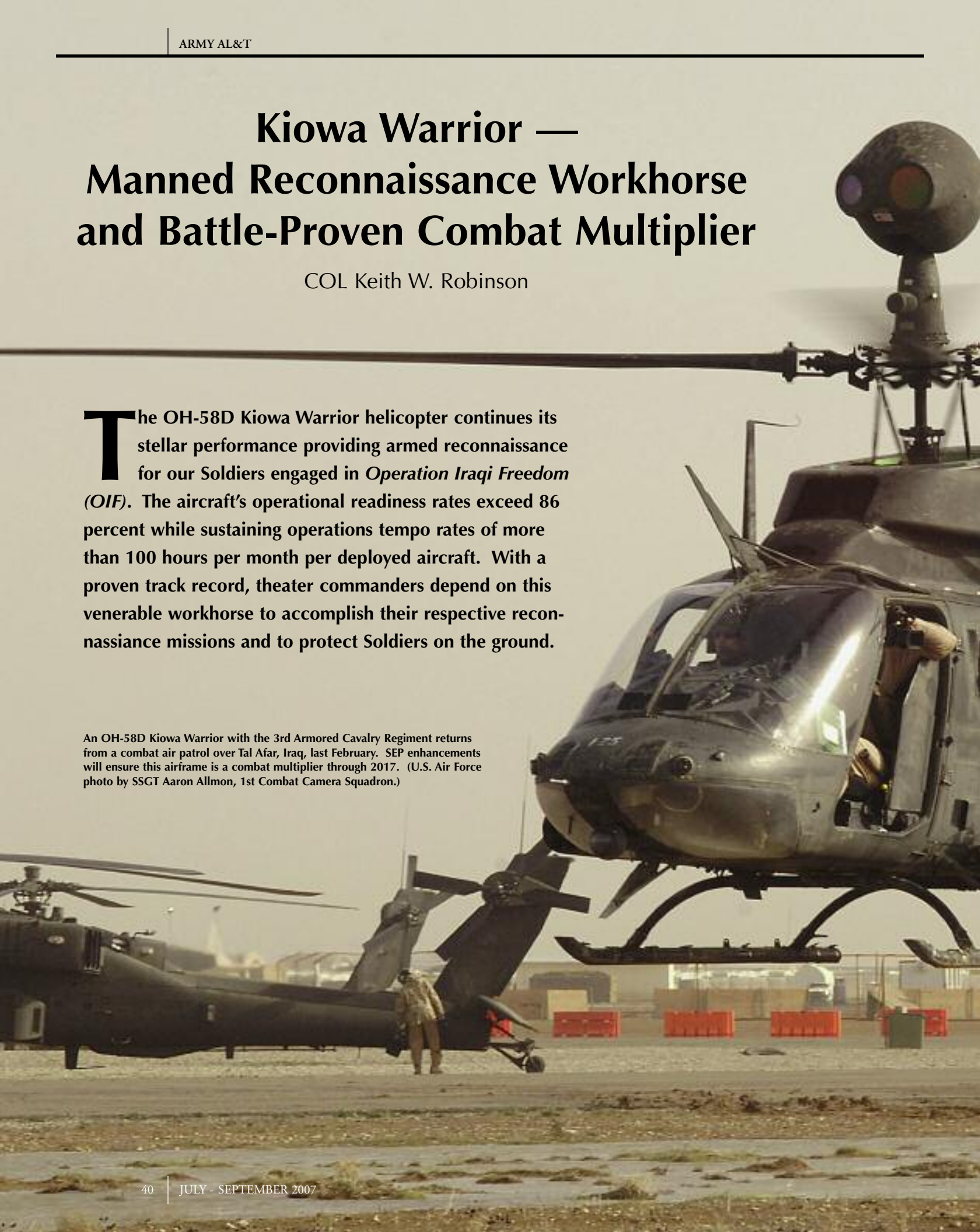
Kiowa Warrior — Manned Reconnaissance Workhorse and Battle-Proven Combat Multiplier

COL Keith W. Robinson

The OH-58D Kiowa Warrior helicopter continues its stellar performance providing armed reconnaissance for our Soldiers engaged in *Operation Iraqi Freedom (OIF)*. The aircraft's operational readiness rates exceed 86 percent while sustaining operations tempo rates of more than 100 hours per month per deployed aircraft. With a proven track record, theater commanders depend on this venerable workhorse to accomplish their respective reconnassiance missions and to protect Soldiers on the ground.



An OH-58D Kiowa Warrior with the 3rd Armored Cavalry Regiment returns from a combat air patrol over Tal Afar, Iraq, last February. SEP enhancements will ensure this airframe is a combat multiplier through 2017. (U.S. Air Force photo by SSGT Aaron Allmon, 1st Combat Camera Squadron.)

The Kiowa Warrior Safety Enhancement Program (SEP) at Bell Helicopter continues to modify and deliver aircraft ahead of schedule. The Kiowa Warrior SEP incorporates safety enhancements such as the Full Authority Digital Electronic Control R/3 engine, crashworthy seats and cockpit airbags. Digitization enhancements include an Embedded Global Positioning System Inertial Navigation System, Video Image Crosslink, Improved Master Controller Processor Units, Improved Data Modem, Improved Mast-Mounted Sight (MMS) Sensor Processor and Digital Map. To date, SEP modifications have been made to 248 of the Army's 350 Kiowa Warriors. The end state will be 279 of 350 aircraft. The Army expects to complete the SEP by December 2007, with aircraft deliveries to the 6th Squadron (Air), 17th Cavalry, Fort Wainwright, AK.

An OH-58D Kiowa Warrior SEP aircraft has newly integrated safety and performance enhancements that will increase the aircrew's lethality and survivability. (U.S. Army file photo.)

Aside from SEP modifications, the Product Management Office also has several ongoing product improvement initiatives to ensure the Kiowa Warrior remains relevant now and through 2017. Aircraft weight reduction and elimination of obsolescent technology are the primary product improvement initiatives.

> The Kiowa Warrior SEP incorporates safety enhancements such as the Full Authority Digital Electronic Control R/3 engine, crashworthy seats and cockpit airbags.

Current weight reduction initiatives include installation of the ALKAN weapon racks, CXP-118 Mode S transponder, new composite armor, lightweight liquid crystal displays, along with the aircraft stripping and repaint program, for a total of approximately 175 pounds. In addition, an approved engineering change proposal will extend life for the MMS while reducing more than 20 pounds from the Improved Master System Processor.

To ensure the Kiowa Warrior remains technologically compatible on the modern battlefield, numerous aircraft and system upgrades are underway. These will include upgrades and obsolescence management for the cockpit display system, MMS and other electronics. Meanwhile, the Kiowa Warrior continues to set the standard for software blocking and interoperability with the 2007 summer fielding of Software Block II.

The Army's decision to extend the Kiowa Warrior's fleet commitment until 2017 speaks volumes about the confidence and capability that combatant commanders and their Soldiers have in this battle-proven helicopter. The Kiowa Warrior will serve as a strong and capable bridge for our Soldiers as the Army begins fielding the Armed Reconnaissance Helicopter.

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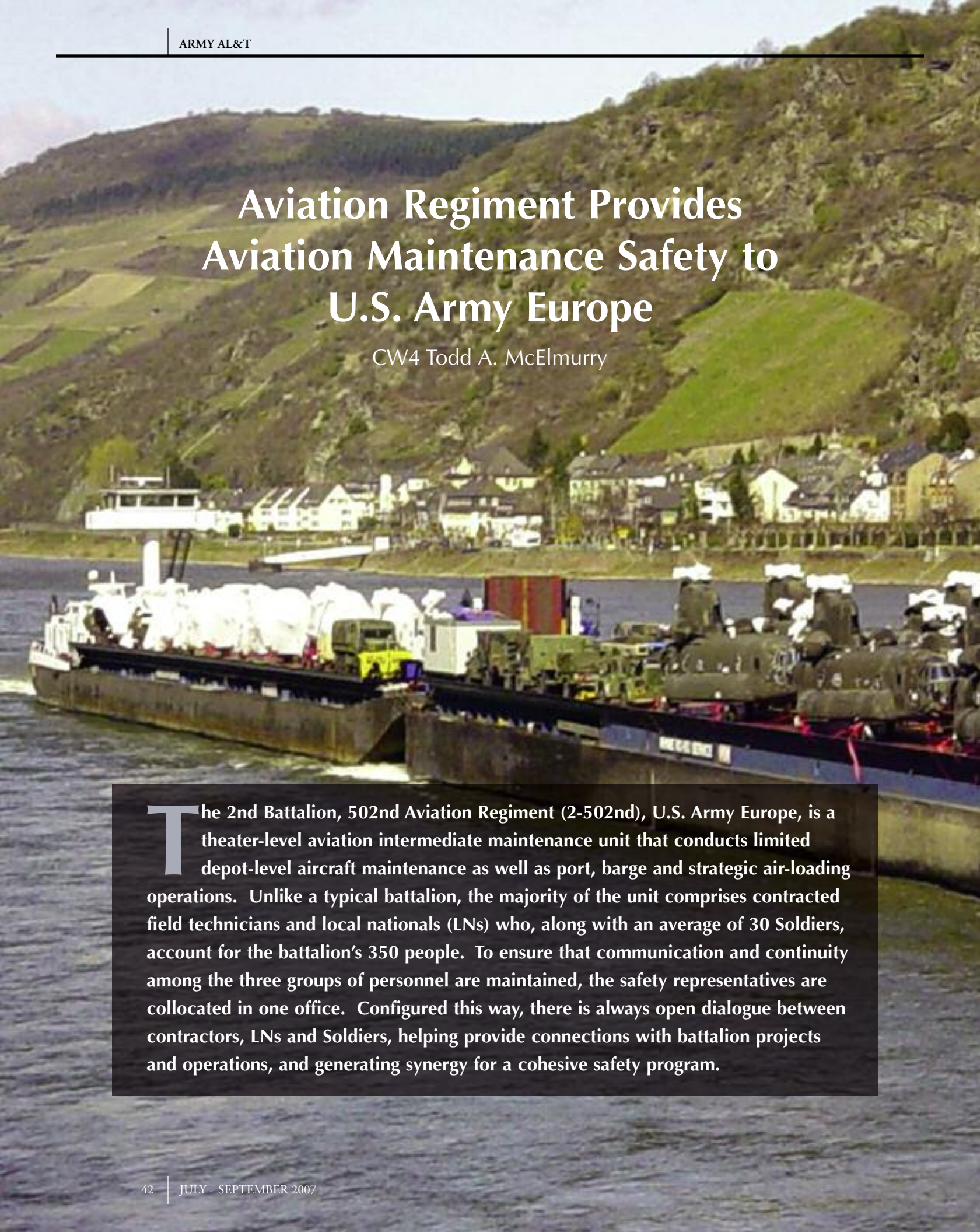


Aviation Regiment Provides Aviation Maintenance Safety to U.S. Army Europe

CW4 Todd A. McElmurry

The 2nd Battalion, 502nd Aviation Regiment (2-502nd), U.S. Army Europe, is a theater-level aviation intermediate maintenance unit that conducts limited depot-level aircraft maintenance as well as port, barge and strategic air-loading operations. Unlike a typical battalion, the majority of the unit comprises contracted field technicians and local nationals (LNs) who, along with an average of 30 Soldiers, account for the battalion's 350 people. To ensure that communication and continuity among the three groups of personnel are maintained, the safety representatives are collocated in one office. Configured this way, there is always open dialogue between contractors, LNs and Soldiers, helping provide connections with battalion projects and operations, and generating synergy for a cohesive safety program.

Composite Risk Management

Collectively, the three safety managers (military, contractor and LN) use composite risk management to identify and assess hazards in the workplace and, ultimately, select control measures to mitigate associated risks. Potential hazards are identified through regular inspections, surveys, safety meetings and councils. As with any safety program, the unit hazard inventory sheet is a critical tool that must be maintained and updated on a daily basis. Once a hazard is identified, it is logged onto the hazard inventory sheet and then a risk assessment is conducted on each hazard in terms of potential accident severity and probability of occurrence. The hazards are worked on a "worst-first" case basis, meaning that the worst hazards are corrected first. Hazards are monitored, ensuring that the control measures implemented are working, and constant supervision and evaluation is provided throughout the process.

> Potential hazards are identified through regular inspections, surveys, safety meetings and councils.

Training

Quality and realistic training is a critical control measure in the safety arena. Training and education can reduce 99 percent of all accidents in the workplace. The three safety managers regularly conduct performance-based evaluations to:

- Ensure that all workers are familiar and knowledgeable about their job requirements.
- Ensure that all workers understand the risks associated with their jobs.
- Manage and practice the proper safety procedures to keep workers safe.

To preclude potential water safety hazards during barge and ship operations, all personnel wear flotation devices and are trained how to properly use them. Here, barges carrying CH-47 Chinook helicopters, trucks and replacement parts head downriver for the port of debarkation. (U.S. Army photo courtesy of the 2-502nd.)

For example, safety managers monitor hangar, warehouse and shop facilities, and the LN safety specialist can make on-the-spot corrections to Soldiers regarding safety violations, and the contractor safety manager is authorized to make on-the-spot corrections to the LN employees. This one voice and one message implementation of safety programs is an important element in ensuring the unit maintains a safe work environment.

> Because of the inherent risks associated with these types of operations, regular safety briefings and rehearsals are conducted prior to each operation.

Controlling Movement Hazards

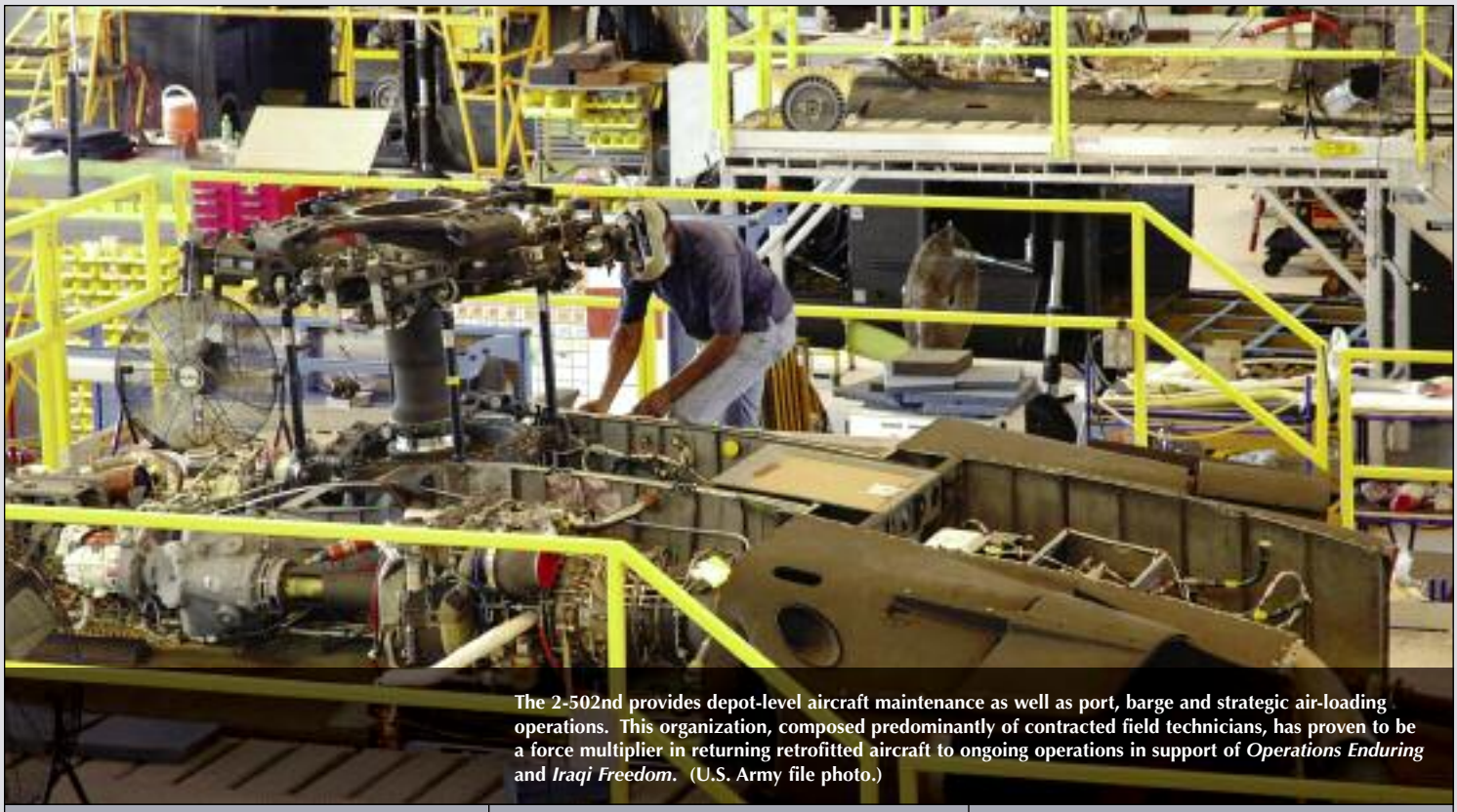
As an aviation maintenance battalion, the 2-502nd moves large quantities of aircraft in and out of the European theater. The battalion routinely tows AH-64 Apache, CH-47 Chinook and UH-60 Black Hawk helicopters on the German road network for extended distances to deliver aircraft either to the barge site or airfield. Battalion personnel also load or unload aircraft from ships either by towing them or lifting them with cranes. Along with towing aircraft and loading them on boats, the battalion also conducts strategic air load outs at its remote site at Ramstein Airbase, Germany, or personnel are sent to other airfields and ports in Europe to conduct these operations. Battalion leaders regularly conduct coordination staff meetings to identify risk mitigation techniques and develop controls for the many hazards identified when conducting movement operations.

Aircraft Towing Operations

When towing helicopters to the barge site, coordination with local international law enforcement authorities from two separate German states is critical to secure the route to the barge site. Also, the unit performs a route reconnaissance to remove any overhead obstacles or other types of barriers before executing the operation. Contracted civilian vehicles are used to tow the aircraft from the maintenance facility to the barge loading site. Safety oversight is most critical during the hookups and the actual pull of aircraft.

Aircraft brakes must be off prior to the pull, and a pace vehicle must lead the convoy to ensure that aircraft are not being towed too fast. Coordination with both the American and German fire departments is executed to provide an emergency vehicle in the event of a wheel fire and also to provide one fire extinguisher per tow aircraft for immediate response. In preparation for tire blowouts, vehicle breakdowns or other maintenance issues, a maintenance contact team follows the convoy as the trail vehicle. This precaution has

The 2-502nd's safety managers use composite risk management to identify and assess potential hazards. Here, an AH-64D Longbow Apache helicopter mechanic, SPC Judson McNamara, Charlie Co., 1st Battalion, 101st Aviation Regiment, checks technical data on his laptop while performing routine maintenance. (U.S. Air Force photo by TSGT Andy Dunaway, 1st Combat Camera Squadron.)



The 2-502nd provides depot-level aircraft maintenance as well as port, barge and strategic air-loading operations. This organization, composed predominantly of contracted field technicians, has proven to be a force multiplier in returning retrofitted aircraft to ongoing operations in support of *Operations Enduring* and *Iraqi Freedom*. (U.S. Army file photo.)

proven to be the best time-tested technique to address potential transportation issues en route to the delivery destination.

Port and Airfield Operations

During barge and ship operations, the greatest identified hazard is the danger of personnel falling into the water. All personnel wear flotation devices and are trained to use them. Flotation rings are strategically placed for quick and easy access. The battalion coordinates with local authorities to provide shore patrol boats for security and rescue operations. Other control measures include minimizing the numbers of personnel that must board these vessels (barges and ships) and ensuring that they wear rubber-soled shoes with serviceable tread. Personnel are equipped with whistles to stop all movement when a serious hazard or risk is identified, an especially important element in the safety program considering existing language barriers. Similar to the technique of calling cease fire on weapons firing ranges when unsafe acts are observed, all personnel are briefed that when a whistle blows, all movement stops. Other safety measures include wearing high visibility vests and hard hats for head protection.

As with port operations, many safety measures also apply to airfield operations when loading helicopters onto U.S. Air Force strategic aircraft. Experienced and trained tow vehicle operators are vitally important to this type of operation. During loading onto aircraft, personnel must listen to the cargo load masters and take all commands from them. Because of the inherent risks associated with these types of operations, regular safety briefings and rehearsals are conducted prior to each operation. Mission and safety briefings are also executed prior to conducting any strategic air requirement, similar to a convoy briefing prior to departure. This exemplifies the education and awareness process and reinforces good safety practices.

Safety Oversight From the Top Down

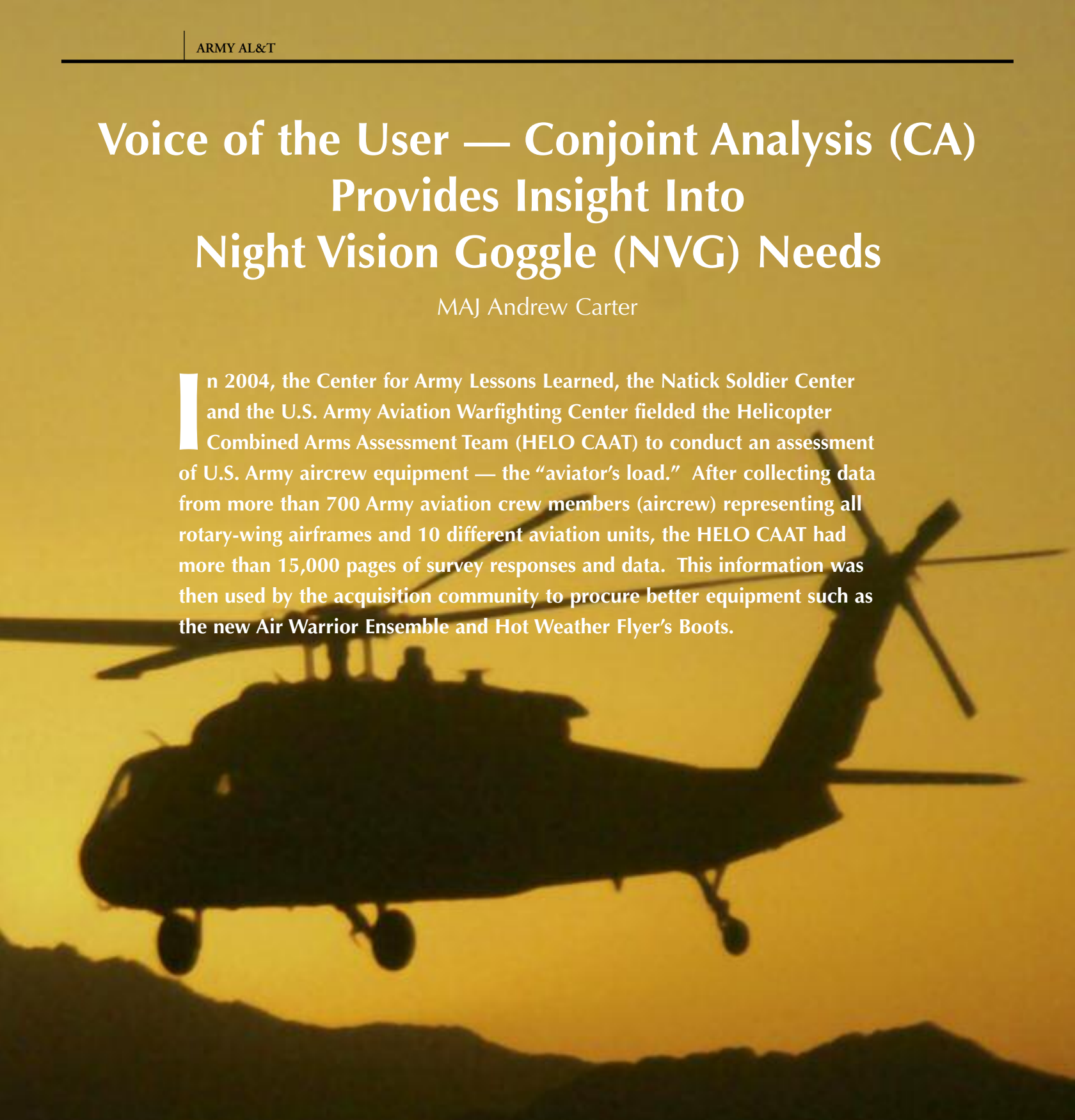
Safety must always be emphasized from the top down and managed by everyone in the organization. The 2-502nd has an active and fully involved command safety program. The only way to develop a successful safety program is to ensure that each team member takes an active role, accepting complete ownership of program responsibilities. Safety professionals understand that their mission is to promote this concept to all personnel, including those who work to maintain and move helicopters in this command. This emphasis and focus ensures our warfighters are getting the best equipment that can be provided to them, delivered in a safe and efficient manner.

CW4 TODD A. MCELMURRY is the Battalion Aviation Safety Officer, 2-502nd, Coleman Barracks, Germany. He has an associate degree in general studies from Lansing Community College.

Voice of the User — Conjoint Analysis (CA) Provides Insight Into Night Vision Goggle (NVG) Needs

MAJ Andrew Carter

In 2004, the Center for Army Lessons Learned, the Natick Soldier Center and the U.S. Army Aviation Warfighting Center fielded the Helicopter Combined Arms Assessment Team (HELO CAAT) to conduct an assessment of U.S. Army aircrew equipment — the "aviator's load." After collecting data from more than 700 Army aviation crew members (aircrew) representing all rotary-wing airframes and 10 different aviation units, the HELO CAAT had more than 15,000 pages of survey responses and data. This information was then used by the acquisition community to procure better equipment such as the new Air Warrior Ensemble and Hot Weather Flyer's Boots.



A UH-60 Black Hawk helicopter departs on a transportation mission from Bagram Air Field, Afghanistan, last October in support of *Operation Enduring Freedom*. Departing at dusk, the pilots fly with a sense of security despite the developing low-light conditions because they know their AN/AVS-6 NVGs will help them navigate safely and effectively in the dark. (U.S. Army photo by SFC Dexter Clouden, 55th Signal Co. (Combat Camera).)

Unfortunately, despite the time and expense involved, the assessment of aircrew needs was relatively unconstrained. While the team identified what Army aircrew wanted, it failed to identify the relative importance of those needs in terms of resource allocation. For instance, what would the aircrew pick if they had to trade off one thing for another? Hence, the data, while informative, did not fully help the acquisition community with the difficult decisions of how to apply the resources available. The Aviation Directorate of Combat Developments (DCD) was commonly asked in response to the HELO CAAT data, "I can do that, but I would have to decrease this — is that acceptable?" Though the question could not have been asked were it not for the HELO CAAT information, the question suggests a need for requirements assessments that can help in resource allocation decisions. In this article, I will demonstrate how current business techniques such as CA can provide a much more complete assessment of aircrew needs.

One area the HELO CAAT assessment analyzed was NVGs. One portion of the survey asked the aircrew to rank 8 NVG attributes on a scale of 1 to 8, with 1 being the "most important" and 8 being the "least important." The rankings and their corresponding average scores were:

1. Wider field of view (FOV) (2.5)
2. More resolution (2.8)
3. Contrast (3.5)
4. Less weight (4.8)
5. Less noise (4.9)
6. Brightness (5.0)
7. Less glare (5.2)
8. Human factors (7.0)

The HELO CAAT captured the rankings to determine true importance and help focus research and development initiatives on areas of value to the aircrew. Additionally, these results appeared to answer the question of whether FOV or weight is more important. Unfortunately, when the same aircrew was asked to choose between a lighter version of their current goggles or an NVG that included a wider FOV but with slightly greater weight, the results were split, thus confusing the answer. Even if the results had been conclusive, the data would have only justified the choice between those exact NVGs presented in the survey. The reason for the split choices was that, while the aircrew valued a wider FOV more than weight reduction, they valued avoiding a weight increase almost as much as an increase in FOV. Only through the use of this most recent CA study were we able to discover that answer. We now understand the specific HELO CAAT results, and we can answer that question for any combination of changes. We can also answer how those changes will impact aircrew mission effectiveness compared to their current NVGs.

Although there are several different CA methods, the essence of CA is that respondents are forced to make choices between different product features.

Accurately measuring and quantifying user needs and preferences for equipment is a daunting task. Even more challenging is using this information to design equipment that appropriately matches needs and resources. In *Models and Heuristics for Product Line Selection*, authors Paul E. Green and Abba M. Krieger describe the two conflicting problems as Buyer's Welfare and Seller's Welfare. As the end users, Soldiers (buyers) want to maximize the utility they receive from a product. In providing the equipment, the acquisition community (sellers) wants to maximize the value provided. More simply stated, the acquisition community wants to appropriately match resources to needs, while Soldiers are just looking for the best equipment the Army will buy for them.

Explaining CA

CA is a technique for obtaining buyers' true preferences of products or services. Although there are several different CA methods, the essence of CA is that respondents are forced to make choices between different product features. Could this technique have provided more accurate and actionable information than the traditional methods used by the HELO CAAT team? To answer this question, I used a commercially available CA software package and fielded a Choice Based Conjoint (CBC) analysis survey form. A CBC survey asks the respondents to choose

Black Hawk pilot CW3 Randy Martin demonstrates how AN/AVS-6 NVGs work. In a recent HELO CAAT survey, aircrew members ranked FOV, resolution and contrast as their most important criteria for NVGs. (U.S. Army file photo.)

Army aviators operating fixed-wing aircraft and rotary helicopters rely on NVGs for low-light and night flight operations. HELO CAAT's CA study forced aircrew members to make choices between product features so the acquisition community could appropriately match resources to aircrew needs. Here, a CH-47 Chinook helicopter lands to pick up supplies. (U.S. Army photo by SSG Jose L. Rodriguez, 55th Signal Co. (Combat Camera).)

their preferred "product" from a group, where each specific product includes a combination of features or attributes. Once the data is collected, CA then calculates user preferences and assigns "utility scores" to reveal how users value particular levels and combinations of product attributes. In a commercial transaction, "willingness to pay" is a metric that helps resource allocation decisions, but because Soldiers do not pay for items, this utility score from the CA survey can provide a surrogate metric for willingness to pay. This information can also be used to match actual user preferences with available resources. Furthermore, CA can use the individual utility scores to identify segments and opportunities for modular or versioned products.

Using CA

In cooperation with the DCD and the Night Vision Devices Branch at Fort Rucker, AL, the CBC was completed by 146 Army rated and nonrated aircrew (78 percent and 22 percent respectively). On average, the aircrew had 13 years of aviation experience and more than 2,700 flight hours (742 of which were under NVGs). Additionally, 64 percent had *Operations Enduring* and/or *Iraqi Freedom* experience. The surveys had 17 choice questions and 5 validation questions, and they took an average of 15 minutes to complete, with 94 percent of the respondents finishing in less than 20 minutes. One of the NVGs listed as a choice on every question was the current AN/AVS-6, defined by characteristics such as 40 degrees, 21 ounces, same contrast and 20/40. The inclusion of the status quo — choosing the current NVG over a new one — allows for the evaluation of new equipment compared to what is currently fielded.

This CA was able to evaluate how the aircrew would value each of 630 possible NVGs. By comparison, the HELO CAAT survey limited the preference choice to only three different NVGs. The aggregate CA data shows that aircrews get the most utility out of an increase in FOV from 40 to 60 degrees (30.31 utils). However, the next biggest utility gain comes from a weight reduction to 15 ounces (19.7 utils). This is an important insight that features absolute rankings, such as those that the HELO CAAT study failed to capture. By applying cost and technological constraints for the various NVG features, developers can determine "optimal" NVGs that maximize utility based on available resources and production constraints. If the constraints change, a re-optimization is possible without having to field another survey.

Validating Results

The software's simulation tools, specifically Hierarchical Bayes estimation, calculated the average utility scores for

	Field of View	Weight	Visual Acuity	Contrast
Level 1	160 Degrees	9 Ounces	20/20	More Contrast
Utility	9.72	49.67	52.53	23.09
Level 2	140 Degrees	15 Ounces	20/30	Same Contrast
Utility	3.82	50.73	32.11	15.00
Level 3	120 Degrees	21 Ounces	20/40	Less Contrast
Utility	9.54	31.03	17.37	-38.09
Level 4	100 Degrees	27 Ounces	20/50	
Utility	16.09	3.01	-45.47	
Level 5	80 Degrees	33 Ounces	20/60	
Utility	1.48	-55.42	-56.54	
Level 6	60 Degrees	39 Ounces		
Utility	-5.18	-79.01		
Level 7	40 Degrees			
Utility	-35.47			

Attribute Levels, Utility Scores and Mission (Msn) Effectiveness Relationship

The HELO CAAT survey indicated that future NVGs need to improve FOV and reduce the weight of the device. Here CW2 Brent Byington, a Chinook helicopter pilot from Bravo Co., 2nd Battalion, 4th Aviation Regiment, performs his preflight procedures before a mission from Camp Taji, Iraq. (U.S. Army photo by SPC Creighton Holub.)

each of the NVG attributes, and the five validation questions provided an average mission effectiveness score. A simple regression of the utility scores versus average mission effectiveness across all respondents for each of the five NVGs provided a good-fit model (indicated by a high R2). To determine how well the regression equation for utility scores could predict mission-effectiveness ratings, I conducted 30 simulation runs, each with 100 randomly selected respondents in the trial group used for the regression equation and the remaining 46 respondents in the cross-validation or prediction group. The model proved to have good predictive power, particularly for the NVGs representing an improvement in mission effectiveness (likely due to the curvilinear nature of the data). An example of one of the runs with the average relationship equation is depicted in the figure.

> Using technological and budgetary considerations to constrain the utility model, product developers can now get a much more accurate idea of the "value" achieved by allocating resources to particular product attributes.

Implementing Results

One way to use this data is in considering a requirement to replace the current NVG with a new one. If the requirement was written for a 95-degree FOV and 26 ounces (holding acuity and contrast the same), we could first use the data and linear interpolation to get a utility score of 10.96 for 95 degrees and 7.68 for 26 ounces. Adding the scores for acuity (17.37) and contrast (15.00), we can determine that the new goggle would have a utility score of 51.01 (3.65 mission-effectiveness score). Thus, the utility scores quantify how the Soldier would value the increase in FOV and increase in weight, to get a net benefit gain. This example NVG is almost identical to one of the NVGs presented to the aircrew during the HELO CAAT study. The other option presented (reduced weight with 40 degree FOV) has a utility score of 47.63 (3.61 mission-effectiveness score). Aircrew choices were split because of indifference between the two choices, and if increasing FOV requires a weight increase, Soldiers would get as much value from a weight reduction of the current NVGs.

Getting input from Soldiers and developing equipment that meets their needs while prudently spending taxpayer dollars can seem like an impossible task. However, a few modifications to current marketing survey approaches can provide more accurate information about specific Soldier needs and preferences. Using technological and budgetary considerations to constrain the utility model, product developers can now get a much more accurate idea of the "value" achieved by allocating resources to particular product attributes. At the same time, decision makers can get a much more accurate feel for the impact that reallocations of resources will have on Soldiers and, ultimately, the equipment that is procured to meet their operational requirements.

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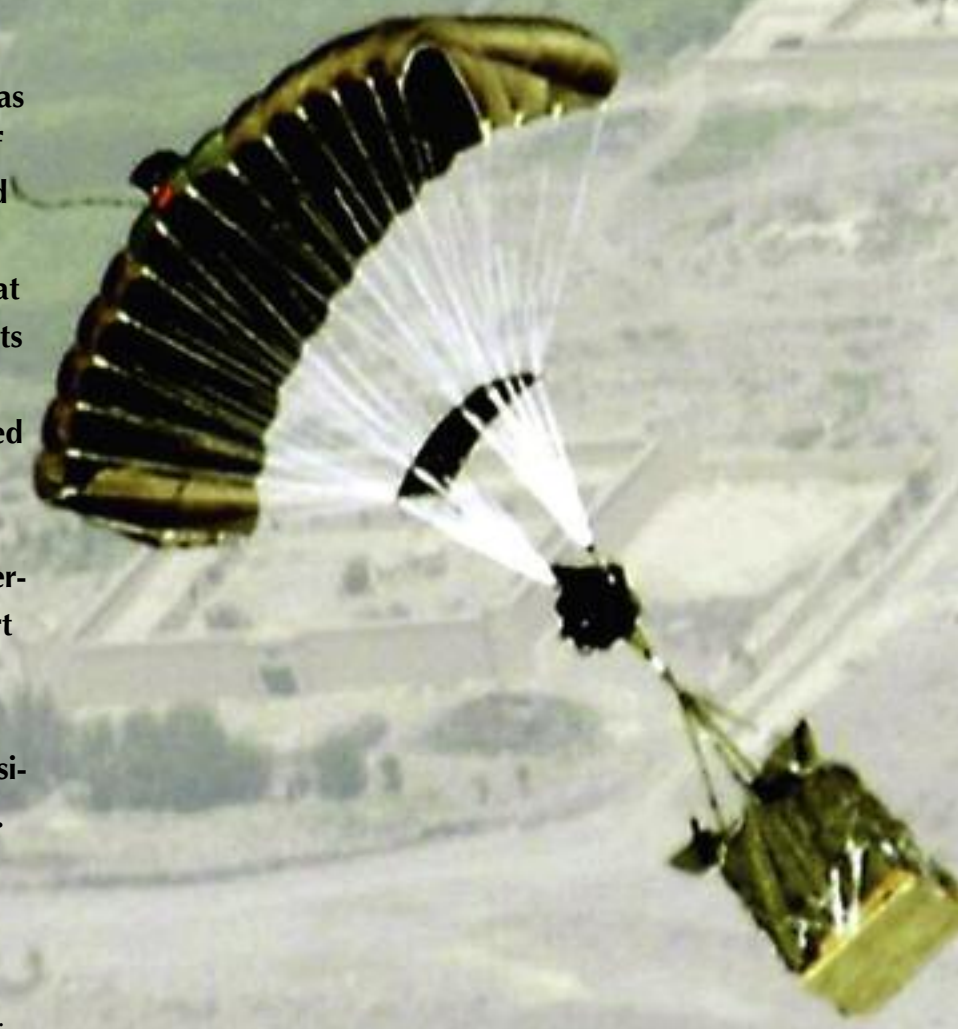
Army Research, Development and Acquisition Projects in Support of NATO

Rita Hassinger and David Diamond

Since the end of the Cold War, NATO has redefined itself through the addition of new members from Eastern Europe and its increasing role as an operational military force in supporting peacekeeping and combat missions worldwide, most recently through its large-scale deployment to Afghanistan. This increasing operational footprint has prompted NATO to reexamine the key technology and interoperability and standardization (I&S) enablers that its national militaries require to operate effectively in NATO coalitions. Much effort has occurred under the auspices of the NATO Council of National Armaments Directors (CNAD), which comprises national level acquisition representatives from each member nation.



The first USAF/Army combat JPADS airdrop leaves a C-130 Hercules aircraft for U.S. Army warfighters on the ground in Afghanistan on Aug. 31, 2006. JPADS will allow conventional military aircraft to accurately drop sensors, munitions and a huge range of critical supplies to Soldiers on the battlefield while minimizing risk to the aircraft and aircrew, while also lessening the possibility of enemy detection of aircraft drop zones. This drop was made from 17,500 feet above sea level. (USAF photo by SRA Brian Ferguson.)

These representatives direct their work through Main Armaments Groups dealing with air, land and sea warfare. Through its participation in the CNAD and associated groups, the United States is able to both influence and respond to the requirements for the development of key enabling technologies and I&S initiatives. Within the CNAD, the NATO Army Armaments Group (NAAG) is focused on developing land force capabilities. The Deputy Assistant Secretary of the Army for Defense Exports and Cooperation (DASA(DE&C)) — within the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology — serves as the U.S. representative to the NAAG.

CNAD Defense Against Terrorism (DAT) Initiatives

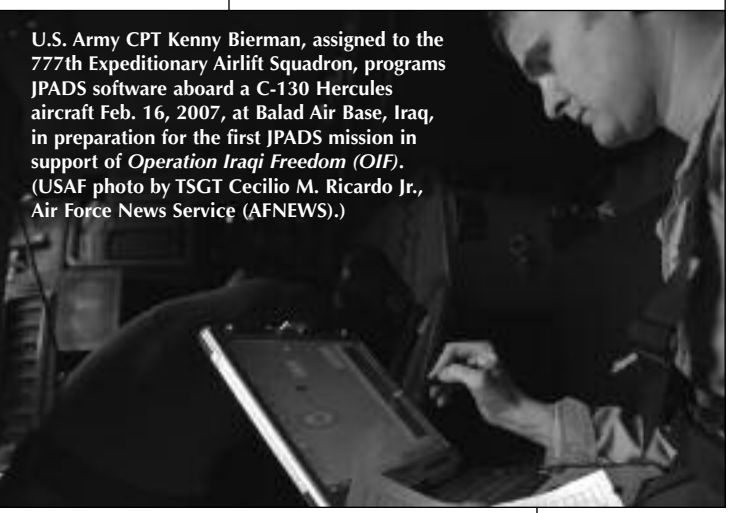
CNAD initiated DAT projects in 2004 to better support the NATO coalitions in current and future operations. DAT's goal is to identify near-term solutions for technology challenges and rapid technological breakthroughs to counter specific forms of terrorist attacks, and provide coalition forces with new cutting-edge capabilities to detect, disrupt and pursue terrorists. Furthermore, at a 2005 NATO ministerial meeting, the U.S. Secretary of Defense agreed that DOD would take the lead on the NATO DAT initiative encompassing the Joint Precision Air Drop System (JPADS). The U.S. Army Natick Soldier Center (NSC) was designated the lead, and DASA(DE&C) and the U.S. Air Force's (USAF's) NATO Air Force Armaments Group (NAFAG) are coordinating its support. The U.S. has also been active in the DAT initiative for Defense Against Mortar Attacks (DAMA). The following sections describe these two efforts in greater detail.

JPADS

JPADS provides a range of capabilities to accurately and affordably resupply Soldiers on the ground by high-altitude parachute drops. JPADS has emerged as a key enabling capability for the ongoing global war on terrorism. Currently, the military primarily relies on low-altitude airdrops, helicopters or convoys to resupply U.S. troops and coalition forces. While these methods are all viable for many situations, convoys are often slow moving and leave the supplying forces vulnerable to insurgent attack by improvised explosive devices (IEDs), rocket-propelled grenades and small-arms fire, while low-altitude airdrops and helicopters are exposed to man-portable missiles (MANPADs) and small-arms fire. Recent combat operations illustrate the need to resupply forces via parachute, from aircraft that can rapidly reach their assigned areas and fly high enough to avoid most ground-based threats. In the U.S., the Army and USAF have collaborated on developing JPADS since 1993. Most of these efforts are currently managed and executed by a team from the U.S. Army Research, Development and Engineering Command; NSC; Office of the Secretary of Defense (Advanced Systems and Concepts); USAF Air Mobility Command and Air Mobility Warfare Center; U.S. Joint Forces Command; Program Manager, Force Sustainment Systems; U.S. Transportation Command; U.S. Marine Corps; U.S. Special Operations Command; and others.

The U.S. JPADS is a family of systems consisting primarily of "self-guided" cargo parachute systems and heads-up displays for military free-fall (MFF) systems all linked wirelessly to a common JPADS mission planner that uses forecast and "in-situ" weather measurements to support accurate release points and update the "smart" systems with planned impact coordinates and best weather estimates just prior to deployment. While most of these systems are currently still in the concept development stage, the USAF and Army have been using rapidly fielded prototype systems for successful operational JPADS delivery in Afghanistan since August 2006. The JPADS Mission Planner is also being used to deliver ballistic parachute systems more accurately from high altitudes. The result has been exceptional, with more than 120 combat airdrop missions and over 1 million pounds of supplies delivered to U.S. and NATO forces between August 2006 and January 2007. Battlefield commanders are increasing their requests for more aerial resupply capability.

The U.S. is leading the way with a number of converging JPADs programs, but is also actively collaborating with NATO and coalition partners to encourage foreign investment in PADS to ensure that members of current and future coalitions will have interoperable resupply capability. The U.S. leads an ad hoc Joint Precision Airdrop Capability Working Group (JPACWG) to bring together subject matter experts from other NATO member nations



U.S. Army CPT Kenny Bierman, assigned to the 777th Expeditionary Airlift Squadron, programs JPADS software aboard a C-130 Hercules aircraft Feb. 16, 2007, at Balad Air Base, Iraq, in preparation for the first JPADS mission in support of *Operation Iraqi Freedom (OIF)*. (USAF photo by TSGT Cecilio M. Ricardo Jr., Air Force News Service (AFNEWS).)

Six 1,200 pound bundles of water and food are dropped from a C-130 Hercules aircraft Feb. 16, 2007, to support the Army's 82nd Airborne Division. This mission is the first time the USAF employed JPADS in support of *OIF*. (USAF photo by TSGT Cecilio M. Ricardo Jr., AFNEWS.)

that are developing PAD systems, including the U.S., France, Germany, Italy, Netherlands, Norway, Spain and the United Kingdom (UK), among others. The JPACWG is producing the following:

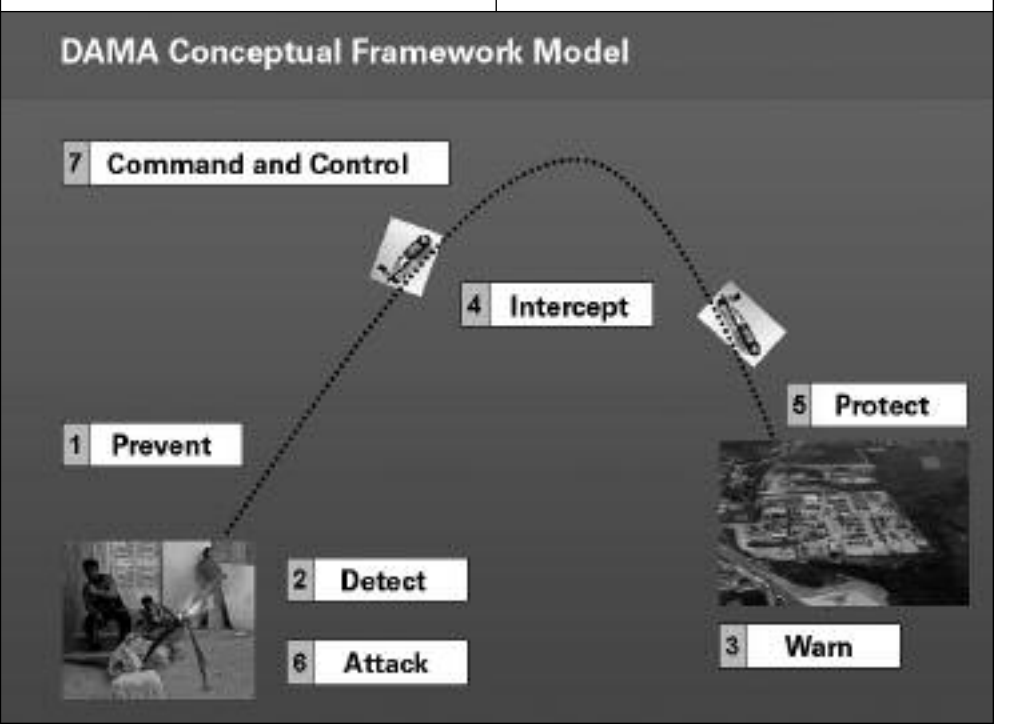
- PAD technology road map and a matrix of national PAD capabilities/systems.
- A better understanding of this capability for NATO nation investments in PAD technology/systems.
- Concepts of operations for NATO use.
- Recommendations for NATO Standardization Agreements for PAD.
- Information sharing for national programs.

The JPACWG has executed two international demonstrations within the last 2 years. The first major event was a 16-nation Precision Airdrop Technology Conference and Demonstration (PATCAD) on Oct. 17-21, 2005, at Yuma Proving Ground (YPG), AZ, which exposed the NATO community to state-of-the-art PAD technologies, further fostering information exchange and cooperation. Another demonstration was held in France July 3-7, 2006. The next PATCAD capability demonstration is scheduled to be held in the U.S. on Oct. 22-26, 2007, at YPG. For more information about JPADS, contact Richard Benney at **richard.benney@us.army.mil**.

DAMA

DAMA is another key NATO DAT initiative. Terrorists working in small teams can launch mortar attacks from built up areas using improvised launchers. While these attacks are often inaccurate and involve poor-quality ammunition, they still have the potential to inflict casualties and damage equipment. The basic DAMA concept is shown in the figure below. Through demonstrations and cooperative efforts, member nations are exploring methodologies to integrate existing sensor command and control (C2) systems to help rapidly prevent, detect and counter mortar attacks during current and future combined operations. Once sensors detect an attack, the system should have the capability to warn personnel in the area — allowing them to protect themselves and their equipment — as well as to intercept the incoming round. The integration task is particularly challenging because of the different technologies employed by each nation, which include radar, acoustic and wireless sensors.

The Netherlands is the lead NATO nation for DAMA, but the U.S. is providing leadership and actively participating through the U.S. Army National Proof of Concept (POC) Counter Strike Task Force (CSTF) from Fort Sill, OK. The CSTF and Fort Sill Fires Battle Lab hosted a NATO DAMA conference and experiment in April 2006, at Fort Sill, which demonstrated the ability to successfully integrate seven different NATO sensor systems from France, the UK, Netherlands, Denmark and Norway using the FireSim XXI simulation. FireSim uses a standard Ethernet interface to exchange variable format messages to provide a common operating picture between national C2 systems. The experiment also provided the opportunity to develop tactics, techniques and procedures for future NATO Command Post Exercises. DAMA WG members developed systems requirements criteria for future real-world



U.S. and coalition forces are exploring new methodologies to rapidly prevent, detect and counter insurgent mortar attacks through DAMA and NATO DAT initiatives. Here, SPC Ricky Halterman, Alpha Co., 5th Battalion, 20th Infantry Regiment, begins loading a 120mm round to fire that will illuminate Mosul, Iraq. The unit is conducting illumination missions to deny the enemy the ability to mass indirect fire mortar attacks on Forward Operating Base Marez. (USAF photo by SSGT Cindy Haught, 1st Combat Camera Squadron.)

deployments. The DAMA WG also hosted a meeting in September 2006 at YPG in conjunction with U.S. Army testing of the Counter-Rocket, Artillery and Mortar program, to observe a limited view of the testing in preparation for the POC Demonstration that was hosted by Germany and the DAMA WG in March 2007.

Although challenging, the DAMA DAT efforts will help the U.S. gain insight into the capabilities and limitations of our coalition partners when deployed with U.S. forces, help limit potential technical risks of system integration efforts and may provide the basis for a NATO Standardization Agreement for future DAMA system integration. Possible spinoffs from DAMA include defense against other types of indirect fires and the protection of slow-moving vehicles and convoys. For more information about DAMA, contact LTC Hayes Ellis at **hayes-ellis@us.army.mil**.

The Road Ahead

JPAD and DAMA project work each involve separate technologies and address different interoperability capability shortfalls, but they are all part of ongoing efforts by the U.S. to ensure that NATO and its member nations can actively participate in coalition operations as a unified force. As these two examples demonstrate, the U.S. must take a multifaceted approach to improving NATO capabilities, by participating in international cooperation I&S initiatives and maintaining a high level of communication among all nations. U.S. capability demonstrations offer an opportunity for other NATO nations to view other national systems and equipment and how they can potentially contribute to critical key shortfalls for current and future operations. U.S. leadership in the CNAD provides a vehicle for implementing this 3-pronged strategy, and will provide a return on U.S. investment by allowing NATO to play an active role in conducting peace and stability operations around the world.

As technology matures and C2 systems are integrated, U.S. and coalition forces will be able to respond more quickly to potential or actual mortar attacks. Here, Soldiers from 3rd Squadron, 4th Cavalry Regiment, 25th Infantry Division, prepare to enter a compound in Tal Afar, Iraq, following a mortar attack on a local Iraqi Army post. (USAF photo by SSGT DeNoris Mickle, 30th Space Communications Squadron.)

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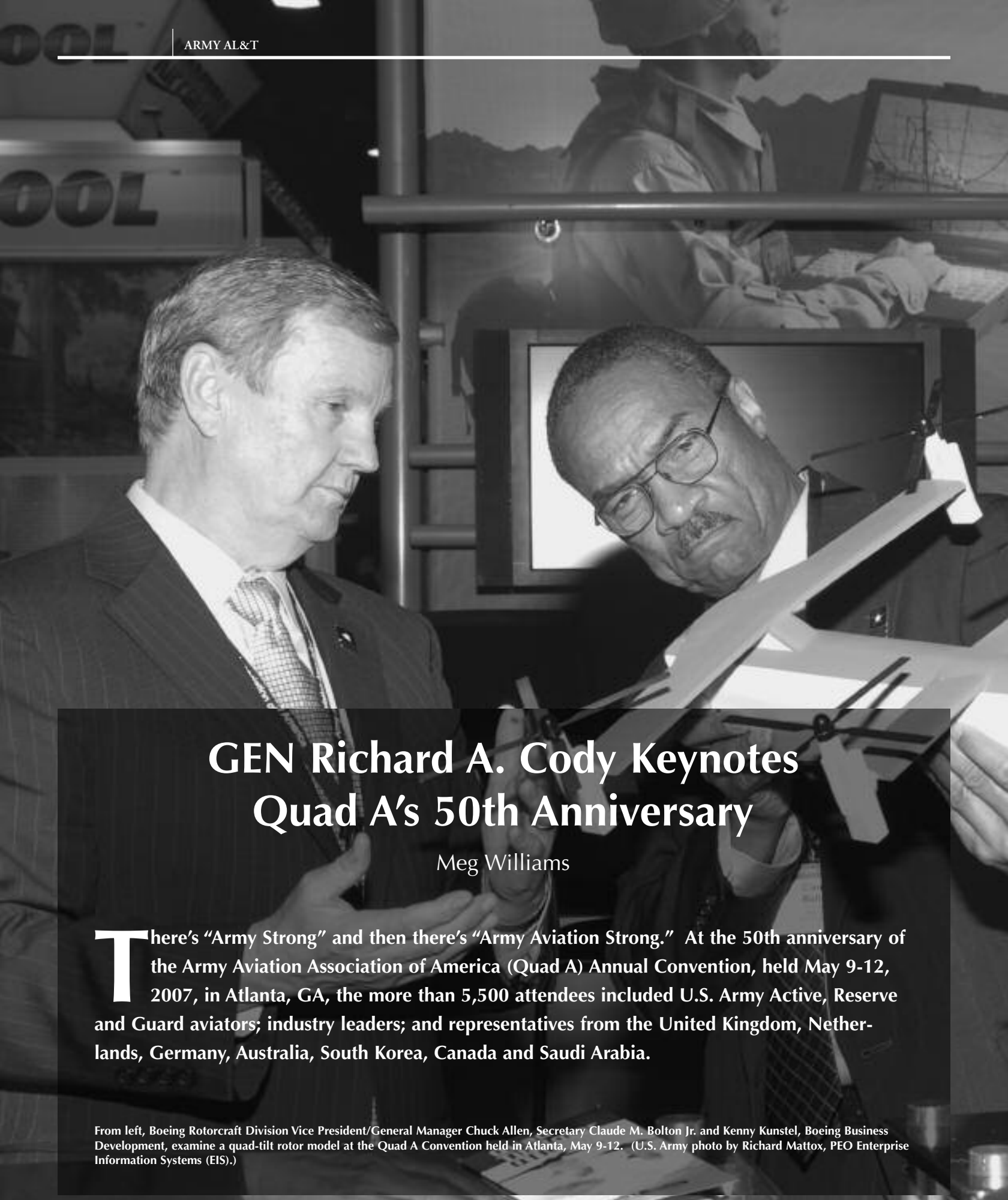
DAVID DIAMOND is a Research Fellow at LMI Government Consulting, who supports DASA(DE&C) on international armaments cooperation activities and policy. He has a B.S. in mechanical engineering and an M.E. from Rice University, and he is a Ph.D. candidate in public policy at George Mason University. He is also a Lieutenant Commander in the U.S. Navy Reserve, currently assigned as Commanding Officer, Naval Submarine Support Center Reserve Detachment, New London, CT.



GEN Richard A. Cody Keynotes Quad A's 50th Anniversary

Meg Williams

There's "Army Strong" and then there's "Army Aviation Strong." At the 50th anniversary of the Army Aviation Association of America (Quad A) Annual Convention, held May 9-12, 2007, in Atlanta, GA, the more than 5,500 attendees included U.S. Army Active, Reserve and Guard aviators; industry leaders; and representatives from the United Kingdom, Netherlands, Germany, Australia, South Korea, Canada and Saudi Arabia.

From left, Boeing Rotorcraft Division Vice President/General Manager Chuck Allen, Secretary Claude M. Bolton Jr. and Kenny Kunstel, Boeing Business Development, examine a quad-tilt rotor model at the Quad A Convention held in Atlanta, May 9-12. (U.S. Army photo by Richard Mattox, PEO Enterprise Information Systems (EIS).)

Keynoting the convention was Army Vice Chief of Staff GEN Richard A. Cody, who reported on the status of Army aviation while the United States fights a persistent conflict for the next 10-20 years, and while the Army modernizes its air and ground forces, repositions its forces from the European plains and Korean peninsula, grows by 65,000 and restructures the U.S. Army Training and Doctrine Command (TRADOC).

Cody gave high marks to the restructure and redesign of combat aviation brigades (CABs). At the same time, he is asking his commandants and LTG Thomas F. Metz, TRADOC Deputy Commanding General and Chief of Staff, if this structure will survive full fire-and-maneuver warfare on the distributed battlefield.

Aircraft Survivability

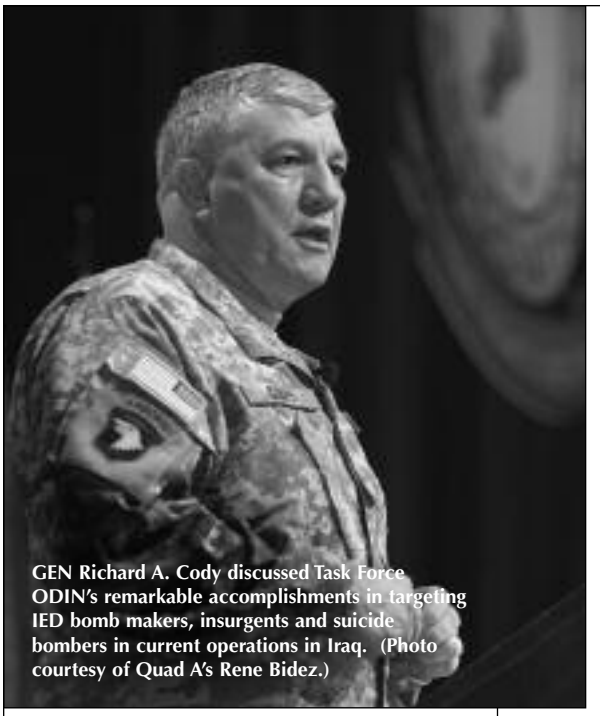
Aircraft survivability rated well, but Cody will not be satisfied until there is Advanced Threat Infrared Countermeasure on helicopters. "I've told our program executive officers [PEOs] and everybody else that I don't want to wait until 2010," Cody said. He added that he is happy with the Common Missile Warning System and flares.

> Task Force ODIN was built around a C-12 airplane and Warrior UAS with special mission packages in them, and a common operating system that was built to allow a common operating picture between CABs and ground units.

Cody listed and reviewed the aircraft in development or being modified. "What's keeping this thing going are the great PEOs and program managers we have teaming with industry," he explained.

Task Force Observe, Detect, Identify and Neutralize (ODIN)

Cody spent significant time talking about unmanned aircraft systems (UASs) as well. The UAS component is working with the military intelligence branch, the signal



GEN Richard A. Cody discussed Task Force ODIN's remarkable accomplishments in targeting IED bomb makers, insurgents and suicide bombers in current operations in Iraq. (Photo courtesy of Quad A's Rene Bidez.)

branch and the artillery branch. "The Small UAS Program of Record — our Raven — is doing great things over in theater," Cody remarked.

Cody discussed the Army's Task Force ODIN, which worked on manned/unmanned teams that went after improvised explosive device (IED) bomb makers, insurgents who placed bombs and suicide bombers. Task Force ODIN was built around a C-12 airplane and Warrior UAS with special mission packages in them, and a common operating system that was built to allow a common operating picture between CABs and ground units. [See Page 12, *Common Systems Integration — Bringing It All Together.*] This combination allowed persistent surveillance on the battlefield as AH-64 Apache and OH-58D Kiowa helicopters no longer had to patrol at night and troll for insurgents placing IEDs. This increased CAB and convoy crew survivability and increased operational ready rates for the helicopters.

"We are on the cusp of fully understanding how to get 'persistent stare' by the way Task Force ODIN is managing different sensor packages — manned and unmanned — and by the way brigade commanders are using the Shadow UAS," Cody continued. "This was just a piece of paper and a few briefings 12 months ago. Task Force ODIN is really showing us why we need to put UASs inside the CABs and move very quickly to a common ground station for air-ground coordination. Any time you can see the enemy and he doesn't know you're watching is a good thing — but not good enough. You also must be able to do something about it and that's what we've been able to do."

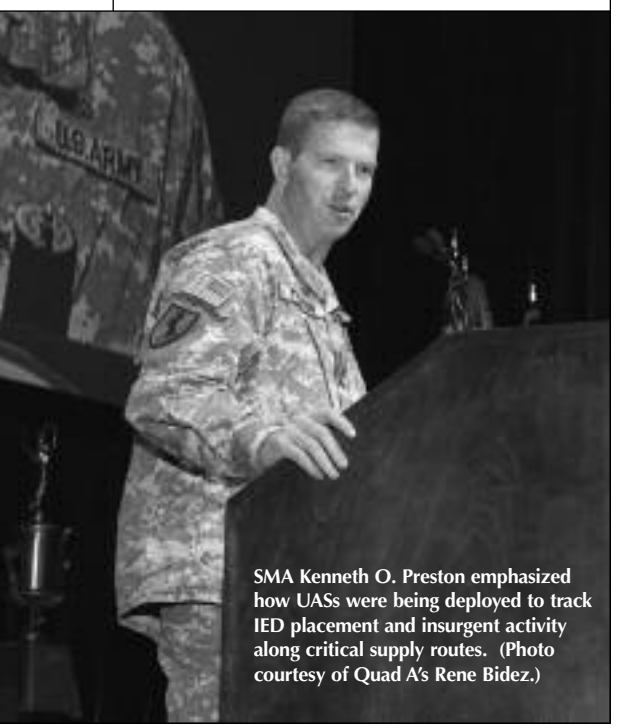
Throughout the conference, nearly every speaker had good things to say about Army UASs. "UASs are making a major impact on success of taking down terrorist cells and saving thousands of Soldiers' lives," Sergeant Major of the Army (SMA) Kenneth O. Preston explained. "They are giving us eyes in places we've never had before. They're helping us monitor for IED placement and helping to keep major supply routes clear."

Adapting Army Aviation

"There's some real energy here," remarked MG Virgil L. Packett II, Commanding General, U.S. Army Aviation Warfighting Center and Fort Rucker, AL. "We are adapting Army aviation, we're staying tied to the field in every geographic region of the world, we're adapting our organizations, we're integrating new aircraft systems, developing strategy, leveraging resources and exploring the possible through science and technology and research and development." Packett was energized about the many projects Army aviation is working on, including Task Force ODIN. "This is a remarkable capability that's growing in use in the Middle East theater," Packett continued.

He also expounded on the simulation training capabilities at Fort Rucker and its Flight School 21. "Every aviation outfit that's going into harm's way will come to Fort Rucker to train." Army aviation's training strategy is tied into the Army Campaign Plan. Fort Rucker is linking its operations with the maneuver training center at Fort Benning, GA, and the Fires Center at Fort Sill, OK. Mobile training teams are also going to the field to train aviators who have been redeployed so that they don't have to leave their home base to train between deployments.

"Our technology is allowing us to explore the possible," Packett explained. "Whether it's composite materials, common engines or common cockpits — we are engaged with industry. This



SMA Kenneth O. Preston emphasized how UASs were being deployed to track IED placement and insurgent activity along critical supply routes. (Photo courtesy of Quad A's Rene Bidez.)

whole idea of manned and unmanned technology is an explosion."

Army aviation is doing the heavy lifting with 60,000 aviation Soldiers around the world in every theater. "We're hauling hundreds of thousands of Soldiers through the air if we don't own the ground," Packett said. "We're hauling tons of supplies and logistics. And while we're doing that, we're also right here in the homeland bringing huge capabilities such as medical evacuations."

Failure Is Not an Option

Army Acquisition Executive and Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT) Claude M. Bolton Jr. spoke at the convention's first light breakfast on May 12. Bolton pointed out that Army aviation had 8,348 aircraft in 1990, 3,558 today and plans to have 3,337 in FY20. "And we're expected to do a better job than we were with the 8,000 aircraft," Bolton quipped. "Our pilots, crew, and tactics, techniques and procedures all must be more capable because we're asked to do more."

Bolton echoed other Army leaders who are pushing for the Joint Cargo Aircraft, which is in source selection now, and the Armed Reconnaissance Helicopter, which has had an issue with the contractor, Bell Helicopter Textron. "If we stumble, the money disappears," Bolton said. "It's phenomenal that we have been able to keep the resources [after the Comanche program was terminated]."

MG Virgil Packett addresses the 50th Anniversary Quad A audience in Atlanta. (Photo courtesy of Quad A's Rene Bidez.)

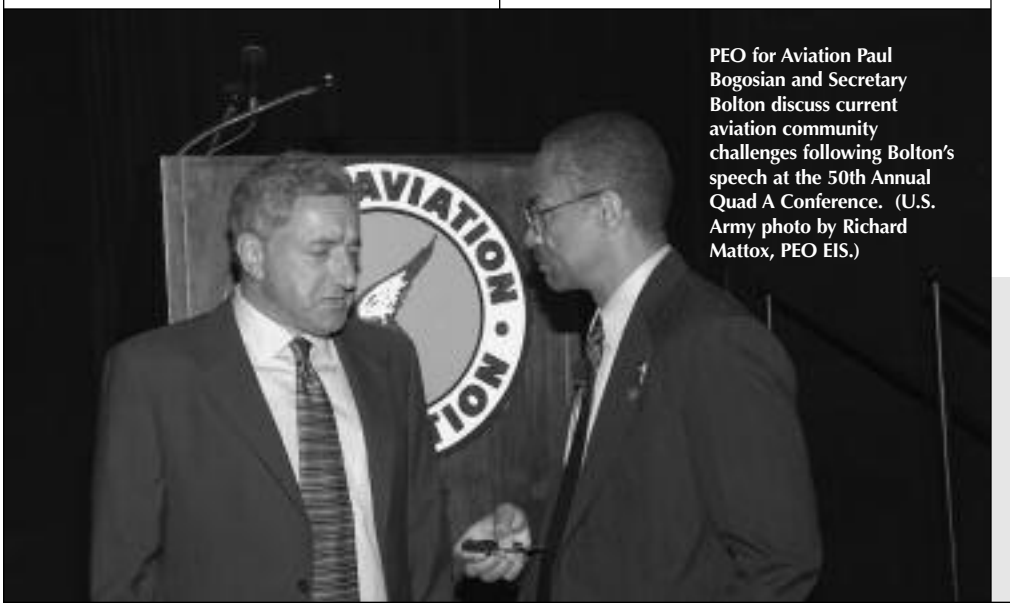
Teamwork Creates Legacies

During the final presentation, BG Stephen D. Mundt, Director, Army Aviation Task Force, made an impassioned plea to industry to work together to advocate for Army aviation, the Army and all of the Armed Forces. "It's about teamwork," he said. "From the general officers leading our aviation organizations, to PEO Aviation, to industry — the message is clear — the legacy lives on."

Mundt reminded his audience that the Army was allowed to use the funds from the terminated Comanche program — $14.6 billion — to work on retrofitting current aircraft and developing other aircraft. "Don't think for one minute that there aren't people circling around you looking for that money. There are people out there who are trying to get into our coffers."

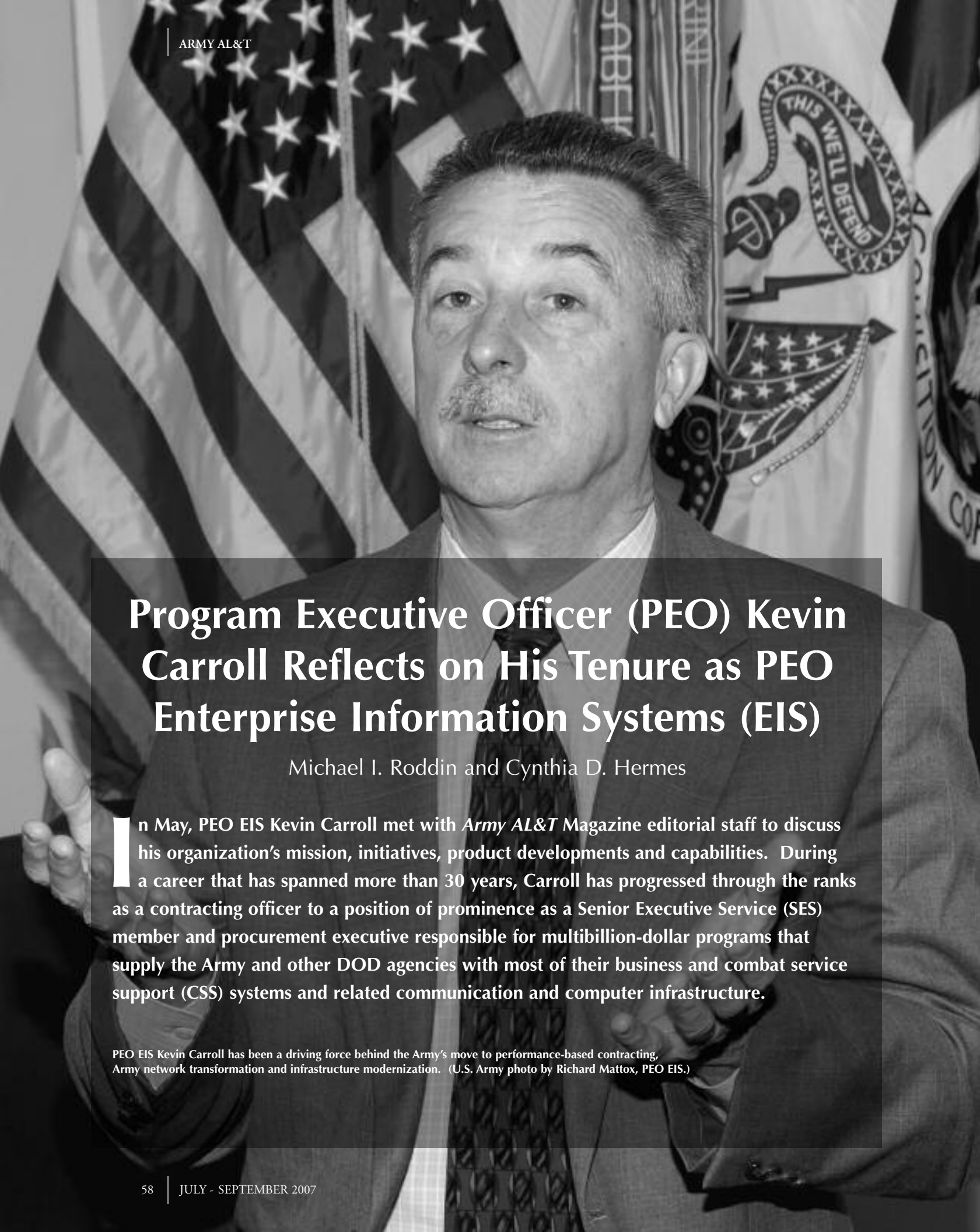
From the use of supplementals to fund the Army's needs to fight the global war on terrorism to Congress not allowing the Army's subject matter experts to run its programs, Mundt listed numerous items that the entire aviation community must attend to, chiefly, funding the Nation's defense.

"This Nation is spending less than 3.5 percent of its total gross domestic product on its national defense. Everyone in this room should be concerned. We all must stand up and be heard. We have had 50 years of a great legacy, and in order to have another 50 years, we must have a strong national defense and a strong budget. We have the talent in our young men and women in uniform and the talent in industry to support us. Be committed to our future," Mundt concluded.



PEO for Aviation Paul Bogosian and Secretary Bolton discuss current aviation community challenges following Bolton's speech at the 50th Annual Quad A Conference. (U.S. Army photo by Richard Mattox, PEO EIS.)

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



Program Executive Officer (PEO) Kevin Carroll Reflects on His Tenure as PEO Enterprise Information Systems (EIS)

Michael I. Roddin and Cynthia D. Hermes

In May, PEO EIS Kevin Carroll met with *Army AL&T* Magazine editorial staff to discuss his organization's mission, initiatives, product developments and capabilities. During a career that has spanned more than 30 years, Carroll has progressed through the ranks as a contracting officer to a position of prominence as a Senior Executive Service (SES) member and procurement executive responsible for multibillion-dollar programs that supply the Army and other DOD agencies with most of their business and combat service support (CSS) systems and related communication and computer infrastructure.

PEO EIS Kevin Carroll has been a driving force behind the Army's move to performance-based contracting, Army network transformation and infrastructure modernization. (U.S. Army photo by Richard Mattox, PEO EIS.)

PEO EIS' information technology (IT) acquisitions directly support logistics, medical, finance, personnel, training and acquisition business operations. From hand-helds, laptops and servers to satellites and wireless communications, Carroll has been a driving force behind the Army's move to business transformation and infrastructure modernization. For his lifetime contributions to the federal government and the IT industry, Carroll was recently presented the American Council for Technology and the Industry Advisory Council's 2007 John J. Franke Award for Public Service during their 27th annual Management of Change Conference.

AL&T: We have had a chance to profile some of the individual systems your organization has fielded over the last several years in *Army AL&T* Magazine, with particular emphasis on communication on the battlefield, but we have never captured your perspective as the senior acquisition and procurement leader for the IT and business systems community. As the principal executive responsible for the program management of DOD and Army CSS enterprise information systems, as well as the Army's communications and computer infrastructure, what have been your most critical challenges over the last 5 years in spiraling technology to our combatant commanders and their Soldiers prosecuting the global war on terrorism [GWOT]?

Carroll: Well, as an introduction, PEO EIS has basically organized itself using a customer service model, similar to industry. We have a division that delivers IT infrastructure and communications solutions for the Chief Information Officer [CIO]/G-6 — our principal customer. About one-third of our work is in support of the G-6. Then we organized a division focused on logistics and finance. This division has a very close relationship with the G-4, U.S. Army Materiel Command [AMC], U.S. Army Combined Arms Support Command and Assistant Secretary of the Army for Financial Management and Comptroller. We are helping them in business systems modernization by reengineering their business processes. In the third division, we put all the other business systems that deal with the acquisition programs we handle for the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT), as well as the medical, personnel, National Guard Bureau and the force management systems that we work for the G-3.

So we have three big divisions focused on our customer base, and we're really trying to help our customers move into one of our biggest challenges — *enterprise integration*. For example:

> We have these three big divisions focused on our customer base, and we're really trying to help our customers move into one of our biggest areas — *enterprise integration*.

- How do we integrate a business domain, like logistics, with historically stovepiped systems that have grown independently for more than 30 years?
- How do we merge them together and change the business practices to make a more efficient operation?
- How do we bring these diverse systems together so that we can help customers use these Web-based systems more easily, allowing people to do their jobs more effectively, while delivering services to Soldiers better, faster and more efficiently?

Our second biggest challenge is cross-domain integration, such as linking our logistics and finance systems together across these domains in a seamless way. Are we duplicating business processes between systems? Can we streamline our methodologies so that Soldiers aren't looking at numerous data elements across different systems and making decisions that can sometimes be costly to the Army? How can we streamline the parts ordering process and ensure that the necessary financial resources are in place so that logisticians and maintainers can order parts faster and with confidence of quick delivery?

So our big challenge right now is helping our customers integrate their systems within the existing functional domains such as logistics, finance, personnel, medical and acquisition, and then making cross-domain integration work seamlessly.

A third big challenge is working for the CIO/G-6 in integrating all of our business systems on common IT platforms and developing standardization across the Army so that Soldiers operating in an office or in theater can plug in their business system and get the operational communications and information they need. We are trying to promote common standards and delivery systems that are easy to use, ready to go and are Army-approved by the G-6 and NETCOM [Network Enterprise Technology Command].

The Army Small Computer Program provides standard Army IT products and service procurement vehicles that solve a big part of this challenge. We've awarded a number of contracts this past year that provide Army-approved personal computers [PCs], laptops and servers. We have enterprise software license agreements

SPC Trumaine Cobb and CPT Monica Simpson, Headquarters and Headquarters Co., 64th Brigade Support Battalion, 4ID, are personnelists who handle all casualty reporting, accountability, awards and promotions via a secure wireless connection to a local or wide area network through the CAISI Client Module with the assistance of the CSS VSAT. Their unit trained at Command Operating Base (COB) King, Fort Irwin, CA, in May 2007. (U.S. Army photo by Richard Mattox, PEO EIS.)

available for home use. These products are already tactical-enabled and the security solutions are already built in. They are configured with the Army software applications installed and, most importantly, they can beat anyone on price.

We also have instituted IT solution contracts to enable organizations to consolidate data centers, operate a local area network [LAN], perform help desk support and much more across the Army. Some of these contracts are mandatory for the Army, such as laptop and desktop, as well as Microsoft® licenses. We've saved the Army money by doing bulk buying where the contractors offer specials during certain advertised sales periods. If you buy a Dell®, Hewlett Packard® or a Micron® PC or laptop during this period, you receive substantial bulk discounts, thereby saving the Army a lot of money.

> We are trying to promote common standards and delivery systems that are easy to use, ready to go and are Army-approved by the G-6 and NETCOM.

We are also performing a lot of infrastructure-related work for the CIO/G-6, including the IT implementation of the Pentagon renovation, expanding bandwith on installations, providing warfighter satellite communications, biometrics and much more. We're bringing these same standard, Army-approved capabilities to the theater of operations as well as the office on an installation.

For example, the medical, personnel and logistics Soldiers using our CSS systems in Iraq and Afghanistan today — all use our VSATs [Very Small Aperture Terminals] and our wireless system called CSS Automated Information Systems Interface [CAISI], which creates a LAN for the user. We've ensured that a common business system platform is being fielded in Iraq and Afghanistan. There are about 600 VSATs in theater, and they are bringing a commonality to operational communications and data flow that has never been experienced in a field environment before.

So, basically, we are developing one universal CSS network as a part of Warfighter Information Network-Tactical. This common network is easy to set up and maintain and allows us to run business applications around the world. We have already seen dramatic changes to logistics readiness personnel availability, and medical command and control, and our customers are happy with what we're doing for them in Iraq and Afghanistan. So the bottom line is we are really trying to install hardware and software that provide commonality across business lines.

AL&T: Working with the Army's CIO/G-6, PEO EIS is achieving unparalleled success while pursuing the additional Army and DOD goal for business process improvement. What

are some key enterprise and business transformation initiatives that PEO EIS is currently the lead for and how will these initiatives better serve Soldiers on the front lines?

Carroll: On the business systems side, we're fielding the Logistics Modernization Program [LMP], which is a national logistics system that is used by the depots, item managers and logistics personnel who manage every national-level item that the Army controls. This is a big, complicated enterprise resource planning implementation using SAP® — a commercial product that we are building upon and that's been fielded to CECOM [U.S. Army Communications-Electronics Command], Tobyhanna Army Depot, PA, and certain AMC Headquarters [HQ] elements. The implementation is working very well. The program had a bumpy start, but we've really helped turn that around. We got our first-ever financial certification without qualification this fiscal year, which may not seem like a big deal, but it is!

What is happening right now is that Tobyhanna has actually changed its business practices, including job descriptions, the organization structure and how they go about doing business. The system allows you to do things a lot smarter, and much more integrated. The Government Accountability Office, which is usually very critical, has just finished a review and gave us a thumbs up on what we have done.

So we are ready to begin fielding next year at the U.S. Army Aviation and Missile Command and then the U.S. Army Tank-automotive and Armaments Command the following year. That's proof that we can bring an integrated LMP using commercial systems into the Army and really help reduce costs and improve performance. So LMP has been a big hit.

We just demonstrated the finance General Funds Enterprise Business System [GFEBS] at Fort Jackson, SC. It, too, is a large SAP implementation. We used real property to show the capabilities that GFEBS is going to bring to the Army. At the demonstration, a lot of outside, independent reviewers gave us a positive finding, so we are moving into full development. This initiative will replace about 80 systems — including two really big financial systems that have been out there forever — and lead to a big change in how we do our financial business. It basically allows the Army to have a checkbook that balances — for the first time ever. It's a critical program and we aren't there yet, however, our first deliverable was completed within the program's first year, and people were saying "let's go, let's keep moving."

> We are developing one universal CSS network as a part of Warfighter Information Network-Tactical. This common network is easy to set up and maintain and allows us to run business applications around the world.

We have 16 logistics systems operating in Afghanistan and Iraq. We modify and upgrade them to address battlefield requirements. We have the MC4 [Medical Communications for Combat Casualty Care] system that we fielded prior to a milestone decision (with proper approvals). We took a risk and fielded it before we had all the "t's" crossed and "i's" dotted, and now MC4 has spread throughout Afghanistan and Iraq. For the first time ever, there is a digital medical record

From left, Simone Acha, LTG Jerry Sinn (since retired), Sheila Tilton, Pam Anderson and Lauren Baker conducted a GFEBS demonstration with real property at Fort Jackson in 2006. GFEBS will have full operational capability across the Army by 2011. (U.S. Army photo by Richard Mattox, PEO EIS.)

for individual Soldiers who receive medical support.

In the past, when Soldiers were wounded and airlifted to Germany or elsewhere with paper records attached hopefully, sometimes a doctor did not know what treatment had occurred. Now doctors have this complete medical record that allows them to access the wounded Soldier's health record and see what procedures were done and when. The information is then synched back to theater and CONUS for the Soldier's follow-on care.

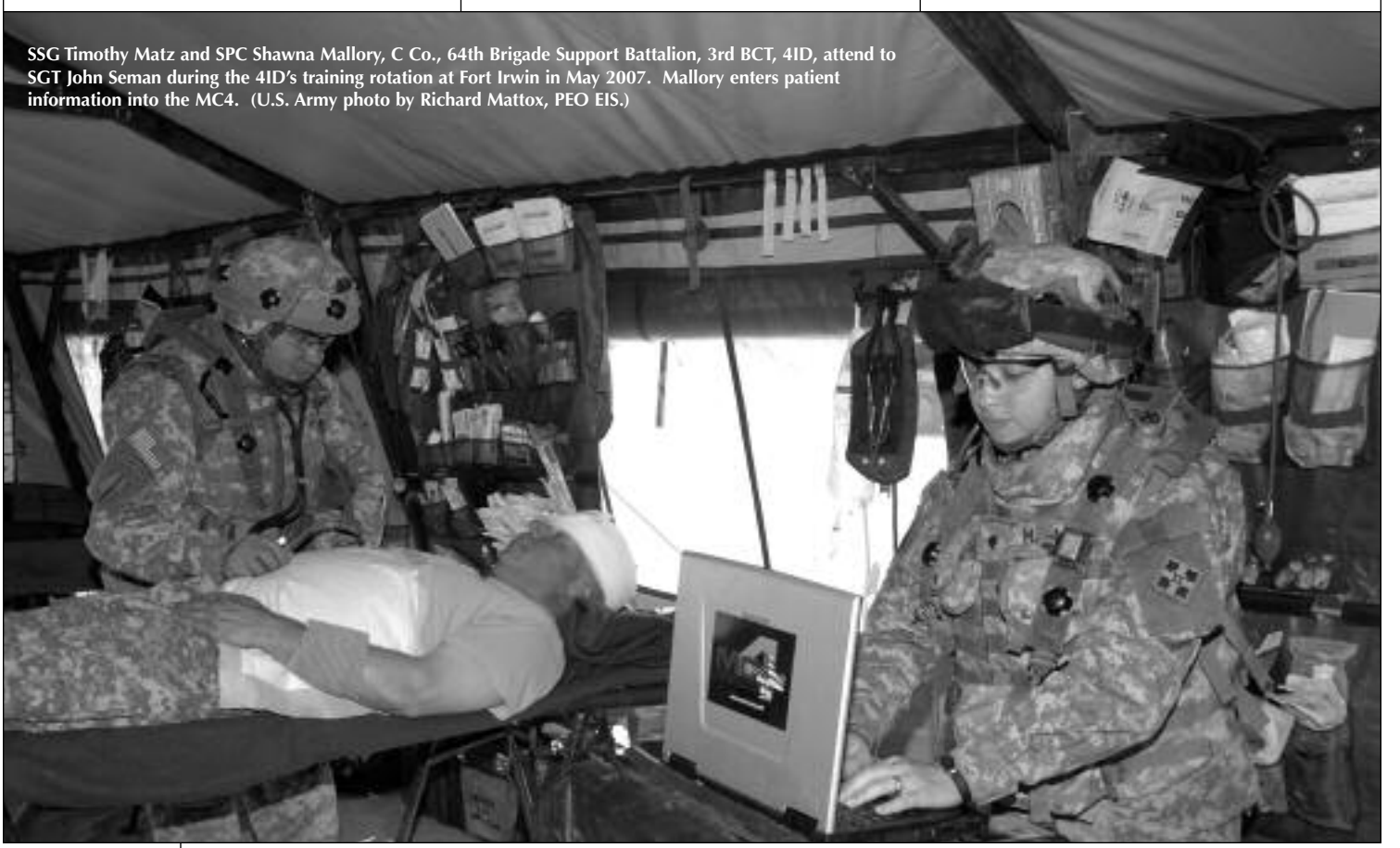
> We have grown from 10 people supporting *Operation Desert Storm* to the 650 people we now have in theater. Obviously, there has been a major shift in our workload and the importance of the direct support we provide to the units fighting the GWOT.

The MC4 has been a big success — the Army Surgeon General has been pushing it and the U.S. Navy and Air Force are also using it.

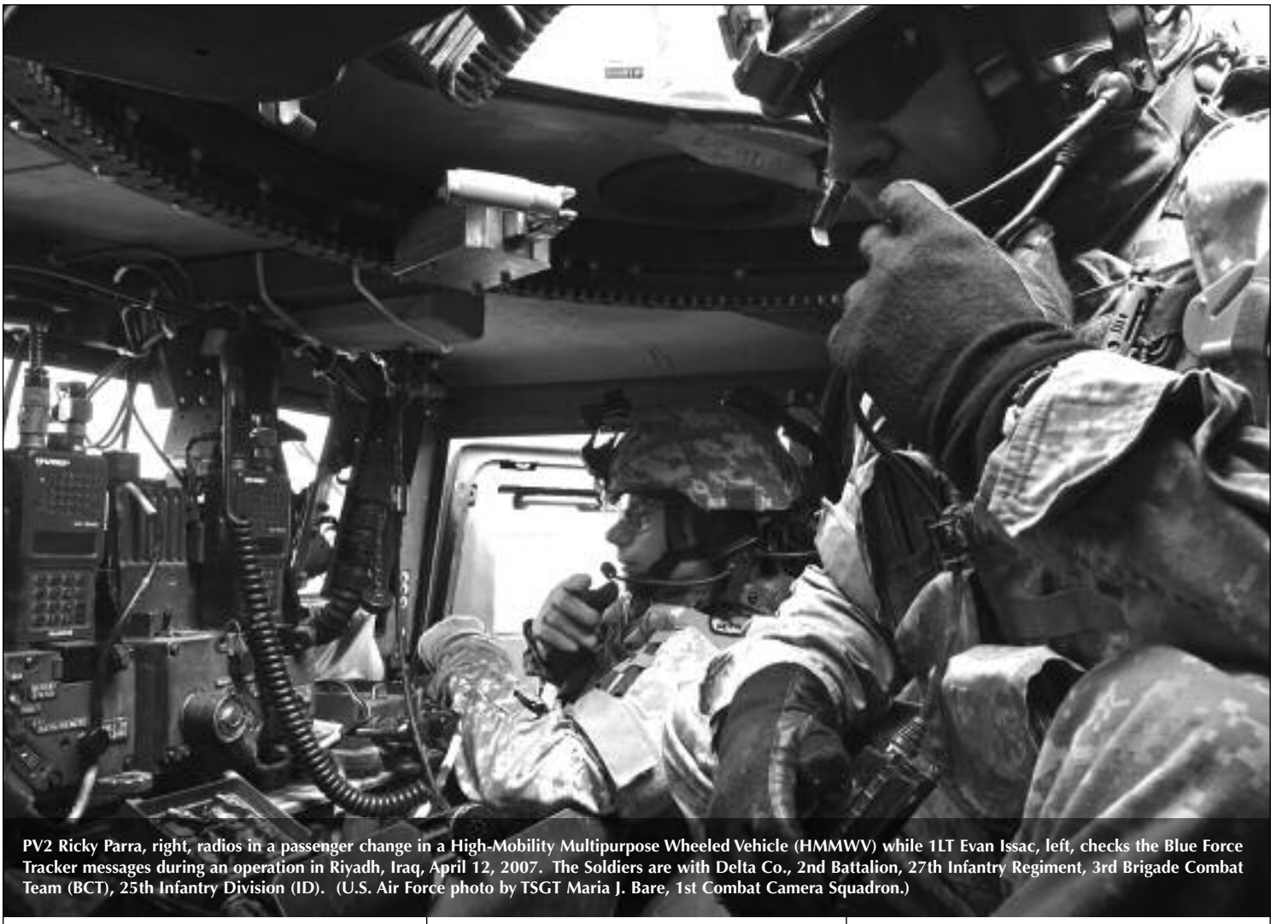
AKO [Army Knowledge Online] is our Army Web portal and the software applications that I just mentioned will all be behind AKO. AKO has delivered results, both for Army business and Soldier welfare. For example, we now have video e-mail allowing Soldiers to send video mails to their families whenever and wherever they can get access to a camera and PC or laptop. AKO will soon become DKO [Defense Knowledge Online], as Defense Information Systems Agency, DOD agencies and the other services join together to make AKO even better.

My cousin is on his third deployment to Iraq with the Maryland National Guard. I think it's pretty good feedback that he actually knows about many of our PEO EIS systems like the Movement Tracking System [MTS], which is a global positioning system for the logistics community and has been put in most of the HMMWVs. We are currently working closely with PEO Command, Control and Communications Tactical [C3T] and ASAALT to better integrate MTS with Blue Force Tracking.

I continue to see more overlap occurring between tactical and business systems. When I took over here, we had about five systems in the fight. We were an organization of about 170 people and now, 6 years later, we have approximately 630 employees, we manage about 120 systems today and we continue to grow. We have grown from 10 people supporting *Operation Desert Storm* to the 650 people we



SSG Timothy Matz and SPC Shawna Mallory, C Co., 64th Brigade Support Battalion, 3rd BCT, 4ID, attend to SGT John Seman during the 4ID's training rotation at Fort Irwin in May 2007. Mallory enters patient information into the MC4. (U.S. Army photo by Richard Mattox, PEO EIS.)



PV2 Ricky Parra, right, radios in a passenger change in a High-Mobility Multipurpose Wheeled Vehicle (HMMWV) while 1LT Evan Issac, left, checks the Blue Force Tracker messages during an operation in Riyadh, Iraq, April 12, 2007. The Soldiers are with Delta Co., 2nd Battalion, 27th Infantry Regiment, 3rd Brigade Combat Team (BCT), 25th Infantry Division (ID). (U.S. Air Force photo by TSGT Maria J. Bare, 1st Combat Camera Squadron.)

now have in theater. Obviously, there has been a major shift in our workload and the importance of the direct support we provide to the units fighting the GWOT.

AL&T: Is there a milestone rollout for the GFEBS?

Carroll: Yes. We conducted a demonstration with real property at Fort Jackson. We're now in the development stage — we call it the blueprinting and realization phase — for the next year. So at the end of next year, we will begin fielding GFEBS to stand as a replacement to the Standard Army Finance Information System and Standard Operation and Maintenance Army Research and Development System, and it will include the local Army National Guard and Army Reserve as well. So next year we have a big deliverable due. It's not the full GFEBS deliverable because the implementation is broken into chunks of functionality and will take time to migrate across the Army. By 2011, GFEBS is supposed to be a full operational capability finished product.

AL&T: The MTS, Defense Communications and Army Transmission Systems, CSS Satellite Communications systems, Deployed Theater Accountability System and VSATs have been lauded by Soldiers and commanders alike in their combined capabilities to disseminate data, information and voice communications to field units faster and more accurately. What are some of the key technology integration factors — from a research and development and science and technology perspective — that led to these successful system fieldings in Afghanistan and Iraq?

Carroll: We continue to field around 700 systems across the Army. A new program we are extremely proud of is "Connecting the Logistician." We're also working very hard to connect the medics and personnel specialists, and because we are trying to develop a common solution across the theater, we are now connecting the biometrics people as well. An important biometrics program element — fingerprinting — is being used to take fingerprints from both the Red Force people (prisoners) and the Gray Force people (local national workers) who are coming onto

our installations in Afghanistan or Iraq. We are using the same common solution to get those prints back quickly, have them checked to ensure that they are good guys and relay that information to the necessary security and law enforcement organizations.

To ensure success, we partnered with PEO C3T and awarded a World Wide Satellite System [W2S2] contract last year. W2S2 and its terminals are all mobile in the sense that you can pick them up quickly, move them and within a half hour, set them back up again wherever you are. The flexibility and mobility of both PEO EIS and PEO C3T provided that increased functionality. We wrote a common contract for terminals along the same lines as the PCs and laptops, creating common commodities. Through this contract — which we awarded to 5 or 6 different vendors — we can do turnaround times as short as 10 days, but I think 1 month will become the norm. Now we can get some good prices on common, standard modems and terminals and get the equipment to our users faster than we were doing before. So that has been a key effort for us to try and find a common solution while generating competition as well.

We are striving to provide the most modern technology but not lose the focus that anybody — a logistician, a medic, a personnelist or even an ASAALT staff person — must be able to use these systems.

As I previously mentioned, we are striving to provide the most modern technology but not lose the focus that anybody — a logistician, a medic, a personnelist or even an ASAALT staff person — must be able to use these systems. Case in point, we have modernized MTS over time. We have MTS+ that is working in theater today. It is getting a lot more functionality and capability from lessons we have learned from the war, but at some point, we really want to collaborate with PEO C3T in developing the software. We want to simplify communications through networked hardware solutions — anywhere from heavier solutions, like Force XXI Battle Command Brigade and Below to even lighter ones that are hand-held, and they all must interact and integrate together. That's our next step.

We have 1,388 government civilians, military and support contractors who provide direct program manager [PM] support to PEO EIS. There are many more contractor personnel supporting contracts and task orders in jobs such as developing, maintaining and deploying IT across the Army and DOD.

There is a new process set up called the Enterprise Risk Assessment Model [ERAM] and it is set up by the Business Transformation Agency, headed by Paul Brinkley and David Fisher. Under ERAM, for any software development effort of $1 million or more, the services must run the project through their own service review process, and then run it up through the Investment Review Board [IRB]. The IRB is comprised of functional and acquisition people. They determine the value or validity of your proposal and whether you keep going or stop. They'll give you the money, but they tell you whether you're allowed to spend it or not. That process involves another board — the Defense Science Board — headed by Deputy Secretary of Defense Gordon R. England. They, in essence, must approve everything over $1 million. All the systems PEO EIS oversees go through that review and they must be approved annually.

The other PEOs don't really go through that process. With ERAM, they send in experts whose mission is to help you get the approved system fielded. A little different mentality than the oversight we do with *DoD 5000*, which is "How do I make sure my boss doesn't get in trouble?" This process is more focused on the PMs getting the systems out the door and it is all focused on risk assessment. They ensure that we have the right documentation, but they are more interested in "What is the chance of getting this thing out onto the field, what are you doing right and wrong and how can we help you?" Sometimes, they bring in experts from corporate America to help us. The whole model is changing in this business from what we've done before. That makes us different from other PEOs because they don't have to go through that kind of focus or review.

The other thing that makes us different is our relationship with the G-6, which is heavily involved in our oversight and what we are doing. Likewise, our relationship with the Office of the Secretary of Defense (OSD) and the other services is very strong. We must comply with the "corporate" business enterprise architecture, so that when we develop architectures ourselves, they must sit within the overall OSD architecture. This is part of their review process, and we must ensure that we fit together. So, if we are building a finance system like GFEBS or a logistics system like LMP, it has to fit the architecture, which then allows us to talk to the Navy and Air Force. It helps ensure Jointness from the business system side, which is something that we never did before. In the future, once all these systems are fielded, it will truly bring a Joint, integrated solution to our combat systems.

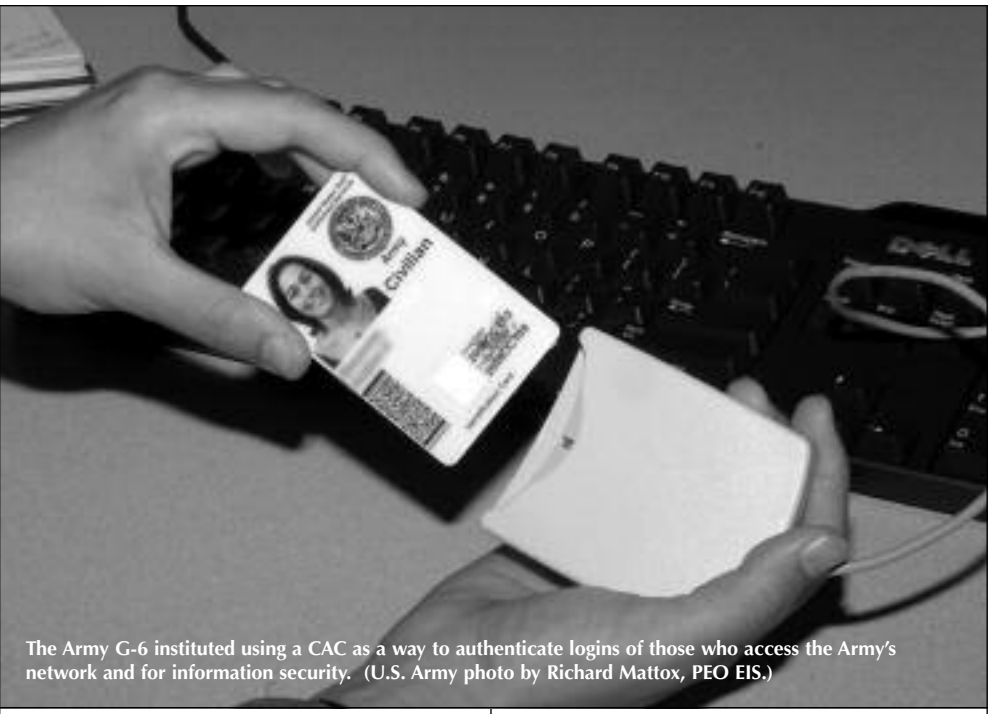
A great deal of what is happening in the Army has involved portfolio

management. The G-1 through G-8 have portfolio managers, and those portfolio managers are pulling these IT systems together and looking at them and saying "Isn't this a duplication? Why did Huntsville develop a personnel system and why did Fort Monmouth develop a personnel system? They look like they are doing the exact same thing, why are we spending all this extra money on this?"

So the portfolio managers now are starting first with inventory, and the next thing they are going through is "What don't I want, what are good ideas that should come into the enterprise and how can I pick up programs or integrate them together?" Portfolio management is going to bring more work into PEO EIS, because portfolio managers are going to realize that they have more control over the portfolio if they have a single PM working it. So we have a logistics PM, a personnel PM and an ASAALT PM. We have these programs so that we can bring all this together and help portfolio managers. So I predict that PEO EIS's workload will continue to grow over the next few years and not completely level out.

AL&T: Information security for IT products/applications and networked systems has received increasing scrutiny over the past few years as terrorists target potential vulnerabilities in U.S. information systems. From an information assurance [IA] perspective, what initiatives has PEO EIS undertaken to combat cyberterrorism against our critical information systems?

Carroll: The biggest complaints I get from the other PEOs — and they think we're the ones responsible, but it's really the Army G-6 — is security, especially mobile security, having to use a common access card [CAC] to get into a network when you're at home station or on travel and all the hassles that come with it. The new software and hardware systems have IA, but the sad truth is, the Army and DOD systems are still being accessed illegally. The Internet, in particular, has been a big focus of ours to protect and for PEO EIS, and the systems we put out there, we really increased our security posture. We tried to make the systems harder to access and ensure that we are compliant with both DOD and Army standards in the IA world. IA is playing a critical role. One of the best security processes that we have established is the requirement to have a CAC because although someone could steal your CAC, they won't know your personal identification number [PIN]. The CAC is a physical token of you accessing the machine with your own PIN, and it is a pretty good feeling to be able to observe who is entering our systems.



The Army G-6 instituted using a CAC as a way to authenticate logins of those who access the Army's network and for information security. (U.S. Army photo by Richard Mattox, PEO EIS.)

So we want to get everybody using the CAC. One problem we have is with AKO because not all family members have CACs. Additionally, a lot of our foreign military partners don't have CACs either. However, the Army is actually better than the other services about using the CAC. We think AKO is a big reason for that as well as installations requiring CACs for login authentication. That's a big step to have the CAC authentication process completed from a physical security standpoint. Soon, we will probably incorporate more fingerprint and biometrics as well.

Another thing is the protection we are installing in our systems such as firewalls, controls and network management capability, so we can track who is trying to get in and develop countermethods to stop unauthorized access. We work pretty closely with the NETCOM community to help us monitor our own systems. We scan our systems, try to break into them and try to do things to help protect ourselves from others. It's a big deal and IA is a big issue for us right now and for the foreseeable future. Years ago, we were more interested in functionality than security. Over the years, that has all changed, and now security is as important as functionality.

Most of our information is sensitive, not classified. There is a lot of talk about taking everything to the Secret

CW2 Joshua Marner (front), 64th Brigade Support Battalion, 3rd BCT, 4ID, and Department of the Army civilian Ricky Gant, the Standard Army Management Information System Logistics Assistance Representative, work from the Supply Support Activity at COB King, Fort Irwin, to set up a CAISI and VSAT during training in May 2007. (U.S. Army photo by Richard Mattox, PEO EIS.)

Internet Protocol Router Network, but that is not easy sometimes. With a lot of our data, we don't really need to do that. It's a question of the rollup of it, when it rolls up and becomes more sensitive. At some point it can move over from classified to unclassified — or vice versa.

AL&T: As you reflect on your tenure as the PEO, what do you think are some of your greatest challenges and what are some of the accomplishments you are most proud of?

Carroll: When I first joined PEO EIS, I would say that my greatest challenge was ensuring that we had a more customer-friendly PEO. That was a big concern of mine because as PMs, if we got a requirement and some money, we'd deliver something to you. You might not like what we delivered, but we would deliver something to you. I knew we had to change the way we viewed the products we were producing and our relationships with our customers.

> We are very open in our quarterly reviews and the things we do. We want our customers participating in the reviews, offering feedback and actively contributing to the decision process.

So with that challenge, we have done a good job of actually addressing our customers' requirements. Today if you talk to our customers — G-1, G-4, AMC, G-3 or G-8 — I think you'll find they feel they are a part of our team. We are very open in our quarterly reviews and the things we do. We want our customers participating in the reviews, offering feedback and actively contributing to the decision process. We really spend a lot of time on that. Our organization has changed so that we have a PM who is responsible for a specific customer. Additionally, there are deputies who are focused on certain outcomes as well.

So we really did restructure our whole process and the HQ staff is now rated on how the PMs use them. We changed the dynamics and we want the PMs to be successful in getting their systems fielded. PEO EIS is customer-oriented toward the PMs. I feel pretty good that we changed the culture while I was here. It is much more "entrepreneurish" for the PMs to go do their thing and make things happen, and our job is to support the PMs and try to find ways to remove roadblocks for them.

Another big challenge was removing stovepipes. We've broadened our work relationships and we're integrating our PMs and customers so that G-1, G-4, AMC and the logistics personnel all talk to each other. Enterprise integration is a big challenge and we are still a work in progress. Our customers see the value enterprise integration brings to the battlefield, and they are getting on board. I believe if I graded myself, I think that the customer focus has been a real big success, and I would say enterprise integration is probably an A. We are making good progress, but we still have a long way to go.

Another area where I think we have been very successful is communications. When I came here, we had no Web-based systems. I remember talking to the J4 and saying "I am surprised there are no logistics Web-based systems." The tactical guys take all the communications, so you have to build client-server environments. This means a big server down in the battlefield with PCs. Although we still have some of those left, all the new equipment we have been building is "in-fielded" already. They are all Web-based, and the reason that changed is the demanding communications environments we continue to find our Soldiers operating in.

We challenged ourselves on how to solve our own communications problems. We went to our G-1, G-4 and other communities and asked if they'd be willing to fund their own communications because, if it's available, they will get it. So we spent time with communications and came up with a very smart commercial, less expensive solution that was approved through the Army approval process. That communications piece has really been a dramatic change for the whole business. It allows us to take care of the Web, allows logisticians to place orders for parts and for medics to relay patient information back to their fellow caregivers. The communications piece has been a big plus. I feel comfortable that we got an A or A+ in that area, and I think our customers would agree with that.

AL&T: Do you consider yourself a technologist, a program acquisition executive or both?

Carroll: You know, I was a contracting guy, and I came up through the contracting career field. When I got promoted to SES, I was Director of the U.S. Army Information Systems and Selection Agency. In addition, I've served as the Assistant Deputy Chief of Staff for Research, Development and Acquisition, AMC; and Acting Director of the CECOM Acquisition Center, so I've had an opportunity to get into the PM side a little bit, but only because I was doing contracting and had to understand what they were doing and cross over. At AMC and CECOM, I learned a lot about communications and logistics. And then I was selected for this PEO job. So I am really cross-domain, but I have never actually worked as a PM.

I think that having broad knowledge in areas such as budget, program management and contracting is actually better than someone who was an engineer and came straight up through the PM ranks. They are expert at only that one program. As you know, our jobs widen and broaden and there are a lot of connections, so I think a generalist is where we are in commercial and government work now. I think it's better to have a broad general knowledge and have experience in big programs, at least that's been the case for me.

The big goal for me was to keep the spirit of the creative culture that we have today, where people get to make more choices and decisions. I have watched decisions get made that I wouldn't have made, but they didn't hurt anybody or else I would have stopped them. For the most part, I want people to be free to make decisions, especially when they are in their first year as a PM. They don't know everything yet; it takes time to adapt. We try to help them through that, but it is part of the learning process — especially on a smaller program that is not extremely visible. You want people to go do their thing, and as long as they are not doing anything real bad, it becomes a judgment call. Let them go do it, even if they hit a couple bumps in the road. I am hoping we can keep that philosophy going. The PMs will have a lot of control and freedom and still look upon HQ as a place that is helpful, not a place that is a dictatorship where you are directed to do it the only way the senior leader sees it.

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From the Acquisition Support Center Director

Successful career development planning starts with the individual. You are your own best career manager. This is the position of Army Acquisition Executive/ Assistant Secretary of the Army for Acquisition, Logistics and Technology Claude M. Bolton Jr. and his Military Deputy and Director for Acquisition Career Management LTG N. Ross Thompson. I wholeheartedly agree with their position.

Good career development planning begins with the Individual Development Plan (IDP). The IDP is an automated system with multiple good second- and third-order effects through its linkage to all of our database systems. It begins with individuals working with their supervisors to craft their career development plans and documenting them on their automated IDP. This document is also the way we track continuous learning points, which is an important part of maintaining acquisition professionalism. Although we are working in a challenging resource-constrained environment, our senior leadership has maintained their commitment to training and educating the Acquisition, Logistics and Technology (AL&T) Workforce by ensuring adequate resourcing is made available to address Army Acquisition Corps (AAC)-wide training, education and professional development requirements. As LTG Thompson mentioned in his May Career Development Corner column in *Army AL&T Online Monthly*, "AL&T Workforce members are responsible for compliance with certification requirements for the positions they encumber. Supervisors are expected to hold their people accountable, and must be accountable themselves." With our leadership's support, we will endeavor to make sure that the necessary resources are available to achieve that goal.

The U.S. Army Acquisition Support Center (USAASC) is doing its part by providing the AL&T Workforce more accurate data and data-based management tools. USAASC recently released the new Certification Management System that provides the workforce with a more efficient and effective tool to request and obtain certifications in every Acquisition Career Field (ACF). It also allows individuals to print their own certificates by accessing their Acquisition Career Record Briefs. In conjunction with our Defense Acquisition University (DAU) partners, we are continuing to address training-related issues that will broaden our "big picture" plan on how to best provide the necessary training that acquisition professionals need to achieve or maintain the certification level for the positions they encumber. My biggest concern as the Deputy Director, Acquisition Career Management, is that a great majority of our workforce has the natural tendency during challenging times with increased missions and other "squeezed" resources, to put training aside in favor of focusing on the mission. As admirable and selfless as this may seem, it does have a long-term effect on the workforce's competency over time. As leaders, supervisors and individuals, we must map out a carefully orchestrated plan that achieves the right balance between meeting today's mission and preparing our workforce for tomorrow's challenges — hence, the importance of well-planned and documented IDPs.

While our Generating Force Table of Distribution and Allowances (TDA) structure does not deploy as a typical operational military unit, our workforce is critical to the units we support. Yet, we are not doing as good a job of identifying the right people for critical training opportunities as we should be. A serious imbalance exists and is illustrated quickly by numbers. Case in point: there are more than 43,000 DA civilians in the AL&T Workforce. If just 1 percent of the appropriate individuals applied for our most coveted programs, we would ensure that we would send the best and brightest people to those opportunities at appropriate selection rates. Additionally, we would be able to logically build a case for the "right" amount of training resources. What I am suggesting is that our leaders and supervisors identify their most critical and qualified people for these programs, and ensure that we are posturing them and our programs for success. For most, training is never convenient, but you must ask yourself, "If not now, when?" It's a commitment we all must make to achieve both our organization's mission and our Nation's success. Training someone who may later take a position of greater authority and responsibility elsewhere in the Army is a good thing. It's a commitment and a leader's and supervisor's responsibility to properly train his/her people to support the most capable land force in the world.

Let me now highlight a few of our newer programs that are designed to help you further your career progression and that of those who you supervise. I encourage each of you to seriously consider these featured opportunities and then reassess what your career and professional development path should look like.

Civilian Training With Industry (TWI)

In our efforts to provide similar leadership and training opportunities for the military and civilian AL&T Workforce, USAASC developed an initiative to determine if a TWI program for civilians could be supported or was needed. In FY04, the TWI program for civilians became an Army Transformation Campaign Plan initiative. Preliminary research results supported a TWI for civilians that would mirror our existing military program. In 2006, USAASC partnered with the U.S. Army Human Resources Command's Acquisition Management Branch (AMB) to develop and execute a TWI program for civilians. It was determined that the program would mirror the military program and serve as an opportunity for the Army to partner with industry in a mutual sharing of best practices.

The civilian TWI program is a 1-year program that provides necessary on-the-job training. A select group of civilians will be placed in challenging assignments at one of the following companies:

- Boeing Co., Integrated Defense Systems, Huntsville, AL.
- Computer Sciences Corp., Falls Church, VA.
- General Dynamics Land Systems, Sterling Heights, MI.
- Lockheed Martin Simulation Training and Support, Orlando, FL.
- Rockwell Collins Simulation & Training Solutions, Sterling, VA.

These assignments will expose participants to current corporate business practices, management techniques, decision-making and business development processes, organizational structures and cultures, and technology development initiatives. To minimize or eliminate civilian relocation or extended temporary duty assignments and to achieve maximum program utility, assignments are restricted to the company located in the participant's local commuting area. The TWI participants will be assigned to the specific companies in the 4th quarter, FY08. While in the TWI assignment with the company, participants will remain on their organization's TDA. The TWI assignments have been established to provide selected individuals with program management experience.

The civilian TWI program's main objective is to develop a select group of participants and provide them with experience in high-level managerial techniques and to develop an understanding of industry as it relates to specific Army functions. The program will be open to all AAC members who occupy positions within the AL&T Workforce in grades GS-13/14 or equivalent within a Demonstration Project or the National Security Personnel System. Other TWI eligibility requirements include:

- Must be an AAC member at the time of application.
- Must be serving in competitive appointment tenure group 1 or 2.
- Must hold at least a bachelor's degree.
- Must be Level III certified in your current ACF.
- Must have, or be able to obtain, a secret security clearance.

TWI participants will be exposed to innovative industrial management practices, techniques and procedures that can benefit the Army. Upon TWI completion, participants will have acquired hands-on business experience and a better understanding of how corporate America conducts business with DOD and other commercial businesses. This broadened business perspective will enhance each graduate's performance as he/she progresses toward senior leadership positions. TWI civilian applications are being accepted through July 2007. The announcement is posted on AMB's Web site at **https://www.hrc.army.mil/site/protect/active/opfam51/ambmain.htm**.

DAU-Senior Service College Fellowship (SSCF)

In June 2007, the first nine fellows graduated from the 10-month DAU-SSCF pilot program in Huntsville. The program, conducted under the auspices of DAU, will also be offered in Warren, MI, beginning with the 2007-2008 class and Aberdeen Proving Ground, MD, in 2008. The fellows who participated in the pilot were from the Army, DAU and Missile Defense Agency. This program is designed to attract participants from local commuting areas while exposing them to leadership training and learning opportunities that will prepare them for critical senior leadership positions as product and project managers, program executive officers and other key acquisition leadership positions. Individuals who complete the program are awarded equivalency for the Program Manager Course (PMT 401) and have an option to obtain a master's in program management from the University of Alabama-Huntsville. Individuals who attend the Warren course offering will have an option to obtain a master's in global leadership from the Lawrence Technological University. DAU-SSCF emphasizes leadership in acquisition with core elements in leadership, research, program management and mentoring. Specifically, the program includes:

- PMT 401 certification.
- Leadership and application to acquisition.

- Acquisition training in life-cycle management linked with the Life Cycle Management Commands.
- Studies in resource requirements and acquisition integration for senior and strategic leaders.
- Studies in executive leadership.
- Applications of acquisition in national defense/security studies.
- Research in acquisition issues and processes.
- Mentoring program with government and industry senior leaders.
- Senior Leadership Speaker's Program.

Eligibility requirements for the DAU-SSCF are the same as for the TWI program.

Naval Postgraduate School (NPS) Master of Science in Program Management (MSPM)

NPS MSPM is one of several education opportunities that are available to AL&T Workforce members and can be earned through distance learning. The MSPM degree is designed to provide acquisition professionals in DOD and other federal agencies a defense-focused advanced degree in a distance learning environment. The curriculum provides acquisition professionals with the knowledge, skills and abilities to lead and manage effectively. Students will engage in the study of concepts, methodologies and analytical techniques necessary for successful leadership of programs or projects within complex organizations. The curriculum focuses on problem solving and decision making within the acquisition environment using case studies, teaming exercises, hands-on applications, active participation, research and integrative exercises. Lecture and laboratory sessions require the application of critical thinking to problem solving within notional and actual situations. Students who complete the degree program will also receive:

- Level III training requirements for PMT 352 and Logistics 301.
- Level II training for Software Acquisition 201, System Engineering 201 and Production, Quality and Manufacturing 101/201.
- Level I training in Contracting 101.
- *Defense Acquisition Workforce Improvement Act* requirements for 24 hours of business subjects and 40 hours of annual continuous learning.

AL&T Workforce members interested in learning more about NPS MSPM and other training, education and experience opportunities are encouraged to review the Acquisition Education Training Experience/Acquisition Tuition Assistance Program catalog available at **http://asc.army.mil/docs/pubs/aete/AETE_catalog_2007.pdf**.

For more information on any of these programs, please contact Gloria R. King at (703) 805-1251/DSN 655-1251 or **gloria.king@us.army.mil**.

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

Contracting Community Highlights

Necessity is the mother of invention, and this issue highlights some of these innovations. The feature article shows how a law and order complex was completed using a mix of resources, skills and determination. The article also discusses the dangers of working in a hostile environment, as we honor the memory of CDR Philip Murphy-Sweet, who made the ultimate sacrifice for his country. We extend our gratitude for his service and our condolences to his family and friends.

Also included are the challenges and rewards of contracting in Southwest Asia, and contracting services lessons learned in Bulgaria. On a lighter note, some of our newest contracting community members from the Natick Contracting Division share their views of the intern program.

As always, we appreciate support from the field in providing a variety of material from across the contracting community.

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

Effects-Based Contracting (EBC) Case Study: Multi-National Force-Iraq (MNF-I) Rusafa Law and Order

CAPT Robert Gilbeau and MAJ Jim DeLong

CDR Phil Murphy-Sweet provided on-site contracting support for the Iraqi Central Criminal Court and prison complex in Baghdad. On April 7, 2007, after visiting the compound, Murphy-Sweet was killed when his convoy was hit by multiple explosively formed projectiles. (Photo courtesy of JCC-I/A.)

Close your eyes and imagine this scenario: The 4-star general in charge of all coalition forces in Iraq identifies the need to establish a secure area within Baghdad where justice will be served. This secure area is currently nothing more than a rubbled garbage-strewn lot adjacent to a small prison complex in partial disrepair. This project must be completed in two phases, with the first phase deadline 26 days away so the Iraqi judicial system can hold an arraignment. The site will eventually become a judicial compound comprised of judge's chambers, a separate courtroom and secure living quarters. The arraignment will be televised across Iraq and possibly around the world. The arraignment and its success are critical to improving the security situation across the country and should help save lives. Phase two of the project is to build temporary prison compounds to house 6,000 detainees to improve living conditions in Iraqi prisons. What do you do to make this requirement happen?

Pioneered by U.S. Air Force (USAF) MG Darryl Scott, Commanding General, Joint Contracting Command-Iraq/Afghanistan (JCC-I/A), EBC is the means to make this task a reality. EBC is the synchronization of contracting resources and capabilities in time, space and purpose to achieve the maximum effect possible to support our warfighters. The key tenet of EBC is to insert the contracting officer early in the planning process, at appropriate locations within the unit's battle rhythm, from corps to battalion level. There are five EBC key components:

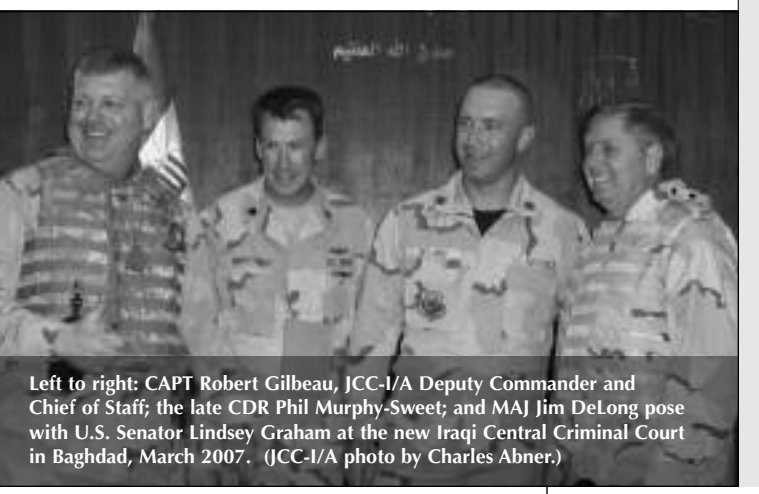
- Developing a support concept.
- Identifying key players.
- Knowing the warfighter's battle rhythm.
- Ensuring visibility by being in the right planning evolutions then passing on situational awareness information.
- Most importantly: having "flexibility within the enterprise."

JCC-I/A's mission is to provide responsive operational contracting support to meet the desired effect, when and where it is needed.

On Feb. 28, 2007, GEN David H. Petraeus, Commander, MNF-I, issued an order requiring the establishment of a law and order complex in the heart of Baghdad. Its purpose would be to help the Government of Iraq (GOI) improve the judiciary in Baghdad and foster an environment of reconciliation throughout the country. The GOI's visible exercising of the judicial system would be a key instrument in gaining the trust and confidence of Iraqi citizens. As a condition, judges, witnesses and other participants involved with investigative hearings must be protected from anti-GOI attacks and threats. The desired end state is to have the Central Criminal Court of Iraq hold public investigations and trials in a relatively safe environment. Gaining the capacity to fairly prosecute and house criminals is a key component to the Baghdad security plan Operation Fardh Al-Qanoon.

Boots on the Ground

The initial team of JCC-I/A, MNF-I and the U.S. Army Corps of Engineers Gulf Region Division (GRD) gathered to work this project and began working at a fevered pace. The requirement was to create a judicial complex within 26 days, build a 900-detainee prison compound by April 15, 2007, and expand a prison to hold an additional 5,400 detainees by June 30, 2007. Because the JCC-I/A team was involved early in the planning cycle and leveraged knowledge from previous projects, they were able to use EBC to ensure the short-term notice would not hinder delivery of the desired effect. After initial requirement review, the team requested approval of its acquisition plan from the Head of



Left to right: CAPT Robert Gilbeau, JCC-I/A Deputy Commander and Chief of Staff; the late CDR Phil Murphy-Sweet; and MAJ Jim DeLong pose with U.S. Senator Lindsey Graham at the new Iraqi Central Criminal Court in Baghdad, March 2007. (JCC-I/A photo by Charles Abner.)

The Rusafa Central Criminal Court of Iraq in Baghdad was completed on March 31, 2007, and convened its first session on April 2, 2007. (Photo courtesy of JCC-I/A.)

Contracting Activity. The chosen contractor, a local Iraqi business, had performed well on projects of similar magnitude in the past. The project came to life in direct support of the Baghdad security plan. The initial estimate for the contract was $22 million.

The team aggressively began working with the U.S. Department of State's Prison Advisory Group. The group, along with JCC-I/A, GRD, MNF-I and the contractor, began to design the judicial complex. Charles Abner (MNF-I), a former judge, provided critical guidance on the standards. With assistance from the U.S. Department of Justice, the team received the direction needed to deliver a complex worthy of the Chief Judge of Iraq. The goal would be to establish a Criminal Investigative Court at the complex. This court would then refer cases to the Central Criminal Court of Iraq. The project included renovating existing buildings, installing prefabricated office/latrine trailers and building a prefabricated courtroom. The contractor would be responsible for construction, but the team soon realized there were many additional elements to achieving the goals of Petraeus' order.

> CDR Murphy-Sweet was a model officer, an innovative and energetic Contingency Contracting Officer, a wise and patient mentor and a beloved shipmate. He believed the best leaders lead from the front, not from behind a desk. When others couldn't see a way ahead, CDR Murphy-Sweet not only had the vision, he made it happen.

To meet the timeline, the contracting division chief realized the workload could not all be accomplished by the Reconstruction Division. JCC-I/A would "flex" within the enterprise to involve different organizational assets to deliver contracts on target. The division called upon others within Iraq Contracting Operations to complete this mission. The first telephone call was made to Victory Regional Contracting Center (RCC) where LTC Greg Green already had a contract vehicle in place to provide T-wall barriers. One thousand barriers were ordered to support prison expansion. The next call was made to the Multi-National Security Transition Command-Iraq (MNSTC-I) Support Division. This team had contract vehicles in place to support office furniture and static security for the judicial complex. The final call was made to the Baghdad RCC. MAJ Rob Hearon's center had previous experience purchasing furniture, and furniture ordered by the Baghdad RCC would be used in the judge's living quarters that were being renovated. Static and mobile security for the judge's complex and transportation were also worked by the MNSTC-I team.

Limited Competition Executed

As in any urgent project where the requirement is not well defined at the beginning, the team found itself making changes "on-the-fly." The initial contract was for a project estimated at $22 million. During a weekly meeting with senior leaders, the issue of saving money to support other efforts was raised. The initial prison compound layout had also been changed by the Ministry of Interior and Justice. How could the team save money without delaying the project? MAJ Jim DeLong proposed to Scott the idea of a limited competition to three contractors who had experience in building tent compounds. There would be a 3- to 5-day delay, but it was believed there could be a savings of more than $5 million. The approval was granted and a limited competition was executed. The result of a 4-day delay was an $8 million savings.

The second big realization was a need to provide on-site contracting support. When Scott put out the call for volunteers to support this project, CDR Phil Murphy-Sweet, U.S. Navy (USN), stepped forward. Murphy-Sweet relocated to a nearby forward operating base and provided daily on-site contracting/program management assistance. DeLong and Murphy-Sweet talked numerous times each day to coordinate contract deliveries and changes taking place at the judicial complex and prison compound. Murphy-Sweet was the right man at the right time to help ensure this project hit its target deadline of March 31, 2007. His leadership, foresight and can-do attitude ensured the judicial complex was completed "on time, on target."

When the Chief Judge of Iraq toured the judicial complex, he was visibly impressed. The team had constructed the facility faster and better than he had hoped to imagine. He immediately decided this complex would not be merely a Criminal Investigative Court but instead officially designated it as the Central Criminal Court of Iraq, ordaining the complex as a major facility within the Iraqi judicial system. The Chief Judge also increased the number of personnel he would send to this complex and had the temporary accommodations for the judges turned into more permanent "condo" style accommodations. This would allow the judges and their families to reside near the complex and remain secure while performing their duties.

Leading From the Front

On April 2, 2007, the first arraignment took place as planned and a man held for torture was remanded for trial. The new judicial process had begun and it was due, in large part, to the EBC efforts of personnel from MNF-I, GRD and JCC-I/A. By flexing the enterprise, resources were synchronized and capabilities were capitalized. Sadly, this successful mission came at a very high price. On April, 7, 2007, after visiting the prison compound, a security detail convoy was hit by multiple explosively formed projectiles, killing Murphy-Sweet and two private security personnel.

"CDR Murphy-Sweet was a model officer, an innovative and energetic Contingency Contracting Officer, a wise and patient mentor and a beloved shipmate," said Scott, in a tribute to Murphy-Sweet. "He believed the best leaders lead from the front, not from behind a desk. When others couldn't see a way ahead, CDR Murphy-Sweet not only had the vision, he made it happen. He lived to see IOC [initial operating capability] on the project, and to see the first arraignment take place in the courthouse. He escorted Senator Lindsey Graham through the facility, and the Senator left extremely impressed. He died doing what he believed in — making a difference through personal leadership, professional skill and sheer will."

The team is now dedicated more than ever to completing this project in honor of CDR Murphy-Sweet. He would have wanted the team to charge ahead in the same manner he did. It is hoped that the individuals responsible for the deaths of Murphy-Sweet and the security personnel will face justice in the court that he helped build.

CAPT Robert Gilbeau, USN, serves as the Head of Aviation Material Support for Chief of Naval Operations Air Warfare Directorate. He is currently assigned as an Individual Augmentee as Deputy Commander and Chief of Staff for the JCC-I/A.

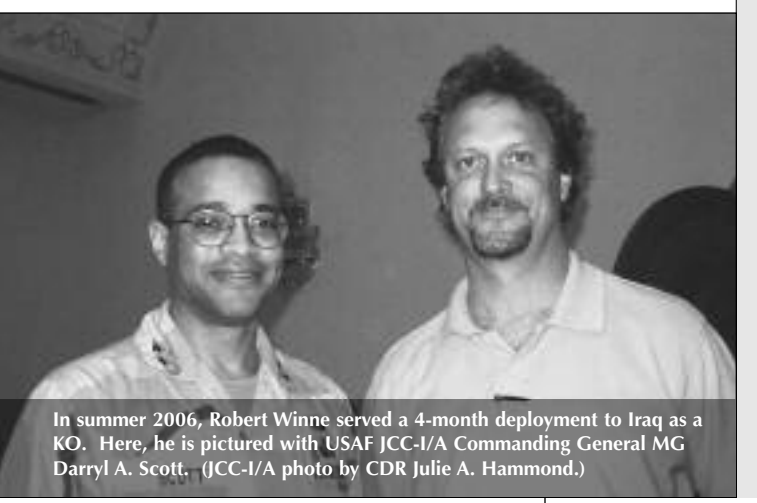
MAJ Jim DeLong, USAF, was assigned to JCC-I/A, Major Theater-wide Requirements, Construction Branch Chief from Nov. 22, 2006, to April 15, 2007. He can be reached at (520) 228-3111/DSN 228-3111 or ***james.delong@dm.af.mil****.*

A Passion to Serve — A Desire to Deploy

Robert Winne

In 2004, while serving as a Contracting Officer (KO) for the Army Contracting Agency (ACA), Northern Region Contracting Center (NRCC), I had an unexpected opportunity to serve as the KO for what was, at the time, the largest and most vital Iraqi security contract awarded for the ongoing campaign in that country. During the months I worked on the development and award of this contract, I made numerous contacts and eventual friendships with personnel deployed to Iraq. These contacts sparked my interest in considering a contingency contracting assignment.

In June 2006, the Joint Contracting Command-Iraq/Afghanistan (JCC-I/A) requested volunteers to support the command's FY-end mission. This tasker's purpose was to ensure that the enormous command year-end workload would be executed by September. The request specifically sought experienced KOs, preferably with construction experience. I had recently completed a 3-month deployment with the U.S. Army Corps of Engineers supporting Hurricane Katrina relief in New Orleans, LA, and the thought of leaving home again would prove to be difficult for my family. However, I volunteered and was accepted for a position in Iraq.



In summer 2006, Robert Winne served a 4-month deployment to Iraq as a KO. Here, he is pictured with USAF JCC-I/A Commanding General MG Darryl A. Scott. (JCC-I/A photo by CDR Julie A. Hammond.)

With a target date of less than 3 weeks to prepare for deployment, the task of working the many complex protocol issues to gain entry into Iraq was daunting. Preparation involved a great deal of coordination with various individuals and organizations. Some of the many requirements included obtaining a passport, a country clearance, a complete physical including vaccinations and a thorough dental exam. With the aid of the ACA NRCC's contingency operations officer, LTC Robert Shelton, paperwork was expedited to meet the target date for departure.

Once all mandatory items were completed, to include packing for a 4-month assignment, I left for the CONUS Replacement Center (CRC), Fort Bliss, TX, where I completed the mandatory processing that prepares all personnel deploying to Iraq — whether military, federal employee or contractor — for their upcoming tours of duty. We received numerous briefings and various training, and were issued miscellaneous deployment-related items such as protective masks, sleeping bags and other survival items to ensure that we were well prepared for the environment we would soon encounter. After 6 days at the CRC, which routinely began before daybreak and ended long after dark, we were finally ready for the long journey to Iraq.

After a 22-hour flight from the United States to Kuwait, several bus rides, a flight on an Air Force (USAF) C-130 and a 10-hour wait for a military convoy, I rode in a vehicle aptly named the "Rhino" and finally arrived in Baghdad at the International Zone. The trip from Fort Bliss took more than 48 hours. My first experience upon arrival was hauling three full duffle bags of gear through the former Republican Guard palace. One might think this would be considered an extraordinary experience, but given my lack of sleep since leaving the United States, only the thought of a cot in that 50-man tent I would call home for the next 4 months kept me going.

After a few hours of sleep, I reported to the JCC-I/A and was assigned to the facilities and transportation sector. It immediately became obvious that the Sector Chief, CDR Julie Hammond, had anxiously been awaiting my arrival, as my routine 12-hour days were quickly filled with solicitation reviews, negotiations, contract and task order awards, source selections and a multitude of other complex contractual issues all demanding my immediate attention and quick decisions. JCC-I/A is staffed with an array of KOs, contract specialists, procurement analysts and a team of legal professionals. The majority of contracting personnel at the office were military and contractors. Very surprisingly, I was just one of only a handful of federal employees.

I worked primarily on various construction projects associated with the rebuilding of Iraq's infrastructure and the repairing of critical facilities such as hospitals, roads, highways and railroads. One of the many responsibilities as a JCC-I/A KO was to adhere to command policy of the Iraqi First Program, which mandated the use of Iraqi businesses to the maximum extent possible. The emphasis was to further develop Iraq's economic capability and to establish and maintain the country's business capacity. Additionally, this program encouraged non-Iraqis to devise and employ training programs to further develop Iraqi workforce skills. In instances where award was not made directly to an Iraqi company, awards to U.S., coalition and third country national businesses required subcontracting opportunities for Iraqi companies and/or employment of Iraqi citizens. The program required all contracting professionals to explore unique contracting innovations and options within legal and regulatory limits.

A unique and much unexpected benefit that I received during this deployment was the opportunity to meet numerous Iraqi business owners and Iraqi citizens. This gave me insight into Iraqis from a professional and personal perspective. The Iraqi business culture dictates a period of time before a meeting to engage in personal conversation, and this provided me with a very real and unique glimpse into the true pulse and attitude of the country. The Iraqis I met acknowledged that Iraq would undoubtedly benefit from the fall of the Saddam Hussein regime and would again prosper. They were truly committed to the cause of the campaign, supported the U.S. and coalition troops and were dedicated to ensuring exceptional services were provided under their contracts, which would slowly, yet surely, help stabilize Iraq's economy.

While a deployment to Iraq isn't for everyone, it was certainly something I felt privileged to engage in and am grateful for the opportunity. I highly recommend all contracting professionals who aren't deterred by constant change, uncertain working environments, awkward living conditions, long grueling work hours or the uncertainty of an incoming mortar, to consider such an adventurous assignment. Furthermore, and most importantly, I passionately encourage and challenge all managers and senior leaders within the acquisition career field to support those who volunteer for such assignments, despite the short-term burden that may be placed upon an organization. These deployments will provide for long-term professional development and personal rewards for those courageous individuals who dare to serve overseas.

Robert Winne is the Deputy Director and Chief of the Engineering and Construction Division, Directorate of Contracting, Fort Eustis, VA.

Contracting Officer (KO) Volunteers in Iraq

Karen Fleming-Michael

In a situation most contract specialists would not typically encounter, Cheryl Miles, a U.S. Army Medical Research Acquisition Activity (USAMRAA) KO, volunteered in July 2006 to serve for a year with the Joint Contracting Command-Iraq/Afghanistan (JCC-I/A) construction mission. "I have been challenged to do things that I have never done before," she said. "As a contract administrator in Iraq, I have a greater appreciation for a contract writing system, a well-written contract and adequate documentation for the contract file."

Miles said the biggest challenges she faced while serving were personnel turnover and the lack of an integrated information system. Maintaining project continuity means that Miles, as all contracting personnel, must create a historical record — a virtual who, what, when, where, how, why — so that the next government employee who shoulders the contract's responsibilities is as knowledgeable as the contractor. This lessens the possibility for government economic loss due to information gaps. Creating that record raises the proven and familiar standard of contractors to "document, document and document."

Miles' JCC-I/A team included military, civilians and contractors. Despite the challenges, working as a team has been very satisfying. "Working with such a diverse group of people, you learn to be more accepting of the differences and to work as a team to get the job done," she explained. "I have worked with some really great people who I plan to stay in touch with after we leave theater."

Throughout her time in Iraq, Miles kept her eyes on the goal. "If we can effectively rebuild Iraq and turn it over to the government of Iraq, we can all go home," she remarked. "Through our efforts, I hope we are helping the government and people of Iraq realize how different — better — their lives can be."

Cheryl Miles, USAMRAA KO, served a year with the JCC-I/A reconstruction mission in Iraq and helped to develop better contract historical documentation processes. (U.S. Army photo courtesy of Fort Detrick, MD, Visual Information.)

Karen Fleming-Michael is a USAMRAA Public Affairs Officer.

Contracting Support Lessons Learned in Developing Economies

MAJ William J. Campbell III, Marcia C. Coleman and SFC Roger V. Leake

Last summer, USACCE provided contracting support for IR06. Here, a team of Romanian, Bulgarian and 1st Armored Division Soldiers provides security to teammates conducting a raid on a nearby building during the exercise. (U.S. Army photo by SPC Tanya Polk.)

In the summer of 2006, a U.S. Army Contracting Command-Europe (USACCE) team supported the Immediate Response 2006 (IR06) exercise and demonstrated to the growing Eastern-European economies, the benefits and uniqueness of contracting with the United States. We found that contracting in a military exercise is not the same as contingency contracting in a well-established theater of operations. The regional contracting environment challenged our support capability and it was critical to use mature contracting methods for our mutual benefit. However, these unique challenges reaped tremendous benefits for the host nations (HNs) and the U.S. Army. Research pointed toward several areas requiring our attention to meet mission objectives. Our mission support strategy addressed these challenges and our execution provided powerful results and lessons learned for future exercises or deployments.

Predominately taking place in Bulgaria, IR06 was a trilateral exercise involving U.S., Bulgarian and Romanian troops. Though the exercise was scheduled for July 2006, planning

and preparing for contracting support began 8 months earlier. U.S. troops included 400 at Novo Selo Training Area and 200 at Bezmer Air Base in eastern Bulgaria, and 3 platoons of U.S., Bulgarian and Romanian Soldiers.

In remote areas of such countries, the contracting environment may call for relaxed procedures as one of the seven exceptions to other than full and open competition under *Federal Acquisition Regulation (FAR) 6.3* allows, but no such relaxation was permitted. It was not a contingency environment; nor was it a mature contracting environment.

We did our "intelligence preparation of the battlefield" by reviewing three previous after action reviews (AARs) and conducting market research. The AARs showed that although the contracting environment was ripening, 5 decades of communist rule had left their mark on the proverbial landscape. A whole generation had lost their life savings when these former communist republics transitioned to market economies, and trust in banks and governmental institutions was low. These states were competing for European Union membership, but were still grappling with widespread corruption. Some local companies were capable of bidding on most contract requirements. However, many were not used to full and open competition because they relied on networking for business. Other potential vendors were small local businesses with limited scope. The people were genuine and willing, but lacked confidence to step boldly into their new economic environment. Through the U.S. presence, our contracting professionals would have to teach and coach them to become more competitive and grow their business abilities.

Using mature contracting methods in support of IR06, the USACCE team reaped tremendous benefits for the HN as well as the Army. Here, Soldiers from U.S. Army Europe and soldiers from Bulgaria and Romania engage in a field training exercise during IR06, near Novo Selo, Bulgaria. (U.S. Army photo by Gary L. Kieffer.)

Because of relationships with our client unit and not having sufficient acquisition lead time (ALT), contracting practices were not always in accordance with the *FAR*. Anticipating that U.S. forces would be deploying to and contracting in this region much more in the future, we established proper business procedures that would be followed in subsequent years' exercises/deployments. The contracting methods we implemented demonstrated how business practices will be conducted long-term.

Overcoming Challenges

The contracting support strategy addressed challenges by focusing on four key areas:

- *Establish the Right Contracting Team.* USACCE set the foundation for success by appointing an Army Emergency Essential Civilian (EEC), an Army officer and a noncommissioned officer (NCO) as the contracting team. The EEC brought a wealth of contracting expertise, the officer had years of operational planning experience and the NCO provided practical experience from other theaters. An interpreter was chosen for geographical knowledge, professionalism and permanence, and would not change from planning through closeout. The interpreter had the team's confidence, the customers' respect, and knew contracting terms and policies.
- *Engage the Stakeholders.* Most client units are unfamiliar with the contracting team's requirements. They must be engaged early, learning ALT importance, unauthorized commitments and the value of training contracting officer representatives and field ordering officers. They must agree to the ALT and articulate their requirements clearly to ease procurement challenges. In addition to the client, the Principal Assistant Responsible for Contracting (PARC) and the U.S. Ambassador to the HN must be involved. The PARC must "bless" the contracting strategy because the command ultimately will be responsible for the outcome. Ambassadors are the President's representatives to the HN and it is critical they know how contracting will affect their entrusted nation, why certain procedures are used and how to anticipate outcomes.
- *Educate Clients.* Army units have become accustomed to contracting procedures in a contingency environment. However, exercises are not contingencies! Clients must learn why *Competition in Contracting Act (CICA)* requirements still apply and ALT's critical importance to meeting regional contracting requirements. Contracting commitments must be continually stressed by units working with the team in creating strong performance work statements and committing funds on time. Without these two prerequisites, the mission becomes a de facto contingency environment without relaxed procedures and, by the very nature of requiring support, without ALT to lawfully procure requirements in accordance with the *FAR*.
- *Use Mature Contracting Procedures.* Because the U.S. presence in this region is projected to grow, it was critical to use techniques similar to future methods. Contractors must understand the way the U.S. government conducts business and how firms can best prepare for competition. Complying

with the CICA would prove challenging because previous contracting teams did not closely adhere to full and open competition or, as was the case during IR06, the state business environment did not have full and open competition.

During IR06, it would have made sense from a contract administration perspective to award only a few contracts: one for each site and a few for activities outside the sites. However, because the U.S. had overriding concerns for maximizing the financial benefit to the local economies without established set-asides and to better provide for local competition, requirements were solicited individually. Although the use of *Standard Form 44 (SF44)* proved expedient in the past, *FAR 13.306* sets certain conditions for its use. From now on, the *SF44* would not be used for anything that the *FAR* didn't explicitly intend. One-time purchases were fine, but not for recurring services, multiple payment requirements or when more economical means such as government purchase cards were available.

USACCE provided contracting support for IR06 including services such as barracks, latrines and trash receptacles. (U.S. Army photo by LTC Nick Vozzo.)

Successful Engagement

We used several uncommon teaching methods to encourage a more robust business environment. The first of three engagements was a site visit with interested vendors to Bulgarian areas. On April 25, 2006, we escorted 18 business people, representing 12 firms, through all anticipated contracts at both sites. The businesses, including local and international firms, participated in a 2-way discussion about U.S. IR06 requirements, contract locations and other concerns that could possibly affect their offers.

Senior U.S. and Bulgarian embassy leaders held a press conference on May 10, 2006, followed by a town hall meeting, attended by hundreds, emphasizing that cooperation with the U.S. military and acknowledging their presence, were factors for stability and economic prosperity. The following day the American Chamber of Commerce (AmCham) hosted a business fair, where U.S. government requirements and competition were explained. The third outreach was AmCham-sponsored conferences in Romania held April 18-19, 2006, and in Bulgaria, June 27-28, 2006. Both of these were widely attended and televised, and provided the best possible information to local and international firms for doing business with the U.S. in the republics.

Ultimately, we satisfied the client's requirements, reinforced proper contracting procedures and helped brighten the business environment's future. We awarded 34 contracts worth $1.05 million with 26 contracts totaling $1.02 million awarded in Bulgaria. Sixty-nine percent of the contracts valued at more than $662,000 were won by Bulgarian firms, and of the 8 contracts awarded to non-Bulgarian firms, most used Bulgarian subsidiaries, subcontractors and/or local workers. Additionally, more than $14,000 was spent directly on the local economy (not reflected in contracting actions). The U.S. Ambassador was very pleased with the exercise's results. Competition gave companies the opportunity to provide their best ideas and best value to the U.S. government, demonstrating that contracting methods are effective and support the goal of engaging the local marketplace's economy. The major lessons learned follow:

- Contracting officers must have a very proactive involvement with clients, stakeholders and vendors in austere contracting environments.
- By engaging clients early, the contracting team can greatly help in exacting requirements and preparing for their eventual provision. With early and frequent contact with all stakeholders, everyone can impact their situation and should be satisfied with the outcome.
- Engagement and education have a powerful affect in emerging economies, allowing businesses to improve beyond their expectations.

As the Army continues to train in emerging democracies with developing economies, it is increasingly important to forge good relationships in contracting performance before the event and teach potential vendors how they can help us help them.

MAJ William J. Campbell III is an Army Officer with the Wiesbaden, Germany, Contracting Center, USACCE.

Marcia C. Coleman is a Contracting Officer with the U.S. Army Corps of Engineers.

SFC Roger V. Leake is an Army NCO with the Wiesbaden Contracting Center, USACCE.

The Natick Contracting Division (NCD) Sponsors ACTEDS Interns

In FY06, NCD added three Army Civilian Training, Education and Development System (ACTEDS) interns to the workforce under the supervision of NCD Intern Coordinator Maria Dunton. Mark Marchioli is a 2006 college graduate and this is his first job; Judy Collier, a 2005 college graduate, relocated to the New England area from California; and Valerie DeAngelis is a former government employee who, after 20 years, reentered the workforce into a new career field. The following are their newfound perspectives on government contracting.

NCD Intern Coordinator Maria Dunton (second from left), with interns Mark Marchioli, Valerie DeAngelis and Judy Collier. (Photo by Matthew Foster, Avatar Computing Inc.)

My First Months in Government Contracting

Mark Marchioli

I eagerly walked up the stairs to my office, still not sure what government contracting was all about. Let me tell you, after that first month, I still had no clue! Therefore, I will let someone else tackle the complexities and intricacies of contracting for you. I feel more qualified to tell you about my experiences in my first job as a Contract Specialist, which I hope leads to a lifelong career.

Coming straight from college, I had professional experience working as an intern in the admissions office of my alma mater, Framingham State College in Massachusetts. My brother had worked on the B-2 bombers at Edwards Air Force Base, CA, so I had some idea of what I was getting myself into working for the government.

Two of the best experiences I have had so far involve post-award conferences for the next generation Modular Lightweight Load-Carrying Equipment backpack system. I attended this event to gain insight into this aspect of the acquisition process. It was my first TDY [temporary duty] and it was a unique learning experience. I came back with a better picture of the contracting process. In the office, I've encountered nothing but openness and an endearing willingness to help and answer any questions I have about contracting from everyone.

After a hectic summer (2006), we found ourselves in FY07 with my next rotational assignment coming up. I will be assisting in the management of the base-wide Government Purchase Card Program. I am excited to be learning yet another part of government contracting.

Mark Marchioli is a second year ACTEDS intern working as a U.S. Army Research, Development and Engineering Command (RDECOM) NCD Contracting Specialist since June 2006. He can be reached at (508) 233-4336/DSN 256-4336 or ***mark.marchioli@natick.army.mil****.*

Finding a Groove in Government Contracting

Judy Collier

I graduated from Menlo College in Atherton, CA, in May 2005. As a graduate looking for a challenging career, the ACTEDS intern program offered a great deal of experience and responsibility compared to what my fellow graduates have found in the job market. Half of my classmates are still looking for a job that uses their education and builds experience, while the others are in temporary positions in jobs they detest to gain experience in a relevant field.

After graduating, I wanted a career in something challenging and exciting, not a temporary job or an internship where I would make coffee or copies. I did plenty of internships in high school and college spanning nonprofits, public relations, sales and a stint as a substitute teacher in a juvenile detention center. While serving in these internships, I learned to promote the organization, improved my personal communication skills and gained knowledge about the importance of customer service and the value of relationships. In today's world of modern technology, we sometimes forget the minor things such as making phone calls or even visiting our customers. In Army contracting, not only do we perform acquisitions, but we are also educating our customers about intricacies. We are in a constant state of learning to better serve our customer — the Soldier. I feel like all of the experiences from my internships and jobs are incorporated and bring tremendous value to the ACTEDS intern program.

The wealth of knowledge in our acquisition center is amazing and I have personally benefited from the assistance provided as I embark upon a new career field. There is not a person in my office who I do not know by name and face. In any situation, I feel comfortable asking for guidance with any of my co-workers. In addition to the ACTEDS program, the office environment I am in will be a contributing factor to my success in the acquisition career field.

Since I began my internship, I have worked on numerous acquisitions such as basic purchase orders, service contracts, National Industries for the Blind/National Industries for the Severely Handicapped contracts. I've also assisted several of my teammates on large-scale acquisitions projects. I am traveling down a career path I enjoy and that challenges me every day.

Judy Collier is a second year ACTEDS intern working as an RDECOM NCD Contracting Specialist since March 2006. She can be reached at (508) 233-4025/DSN 256-4025 or ***judy.a.collier@natick.army.mil****.*

Back in Action — Returning to the Government Workforce

Valerie DeAngelis

My initiation into the acquisition world as an intern began in January 2006 at NCD. It continues to be an adventurous journey through the wonderful world of contracting and, in my opinion, poses the career opportunity of a lifetime. I am a former government employee who reentered the workforce after a 20-year hiatus working various part-time positions and raising my children. I feel very fortunate to have finally found a career that will provide the opportunity to advance and keep me in a constant state of knowledge enhancement. Entering the acquisition workforce as an ACTEDS intern is extremely beneficial for anyone interested in this career path. Interns are required to rotate positions to learn all aspects of the contracting field. I must admit, it is sometimes daunting to change positions every few months; but it is also exciting and challenging.

Although I have learned a great deal from the Defense Acquisition University Level I certification course requirements I have taken thus far, the best part of the internship has been the mentorship available from various seasoned NCD employees. We are a small acquisition organization, thereby fostering a close-knit team environment. The best way to learn this field is to ask questions, listen attentively and take lots of notes. I am grateful to have co-workers who are willing to share their vast acquisition knowledge and provide real hands-on experience. It is encouraging to know they have all come up the ranks the same way I am and have attained success. As an ACTEDS intern, my future looks bright. I have confidence that I will be able to attain my goals and meet the challenges ahead.

Valerie DeAngelis is a second year ACTEDS intern working as an RDECOM NCD Contracting Specialist since January 2006. She can be reached at (508) 233-4628/DSN 256-4028 or ***valerie.deangelis@us.army.mil****.*

Editor's Note: For more information on the ACTEDS Intern program, please visit ***http://cpol.army.mil/library/train/acteds/CP_14/****.*

New Senior Leadership Development Program Begins Second Session

With nearly two-thirds of the Army's contracting workforce eligible for retirement over the next 5 years, leader development is critical and one of the hottest topics in human resource planning. Developing a cadre of trained and ready professionals to assume key leadership positions is an integral component of maintaining the Army's strategic readiness. To meet this need, the Deputy Assistant Secretary of the Army (Policy and Procurement) (DASA(P&P)), the Office of Procurement Policy and Support, and the Contracting Career Program Office partnered with the Office of Personnel Management's Federal Executive Institute (FEI) to develop the Senior Leadership Development Program (SLDP). This 18-month program targets Army contracting professionals in grades GS-14/15 or equivalent. Seventeen contracting managers were competitively selected to participate in the initial cohort that began Sept. 20, 2006.

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

The SLDP rests on the premise that values-based leadership is essential in a democratic society, and it draws on the latest research in leadership development. That research shows

that leadership competencies are best enhanced through an ongoing cycle of assessment, challenging work assignments and learning opportunities, as well as support from mentors and coaches in the workplace. The research also demonstrates the power of mixed learning methods, such as reading, case studies, role playing, simulations and field experiences, in fostering leadership learning.

The SLDP's classroom component periodically brings students together for formal instruction and interagency learning at FEI's campus in Charlottesville, VA, and at other locations in Washington, DC. After the initial program orientation, students participate in a Leadership Assessment Experience, Strategic Leadership Seminar, Focused Skills Seminar, individual learning classes and guest speaker seminars.

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

Learning activities outside the classroom involve a mix of individual and small-group work. The on-the-job component includes a mentor, faculty coach, developmental assignments, team projects, leadership forums, field experiences, focused reading and Web-based learning opportunities. Students work closely with their mentors and FEI's leadership coaches to develop and track progress against their specific Leadership Development Plan, which requires students to identify goals, formulate strategies to overcome challenges, recognize personal strengths and identify barriers to individual leadership growth.

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

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

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

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

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

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

Kristina M. Jensen — U.S. Army Communications-Electronics Life Cycle Management Command, Fort Monmouth, NJ.

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

Cynthia R. Lee — ACA-Northern Region, Fort Belvoir, VA.

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

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

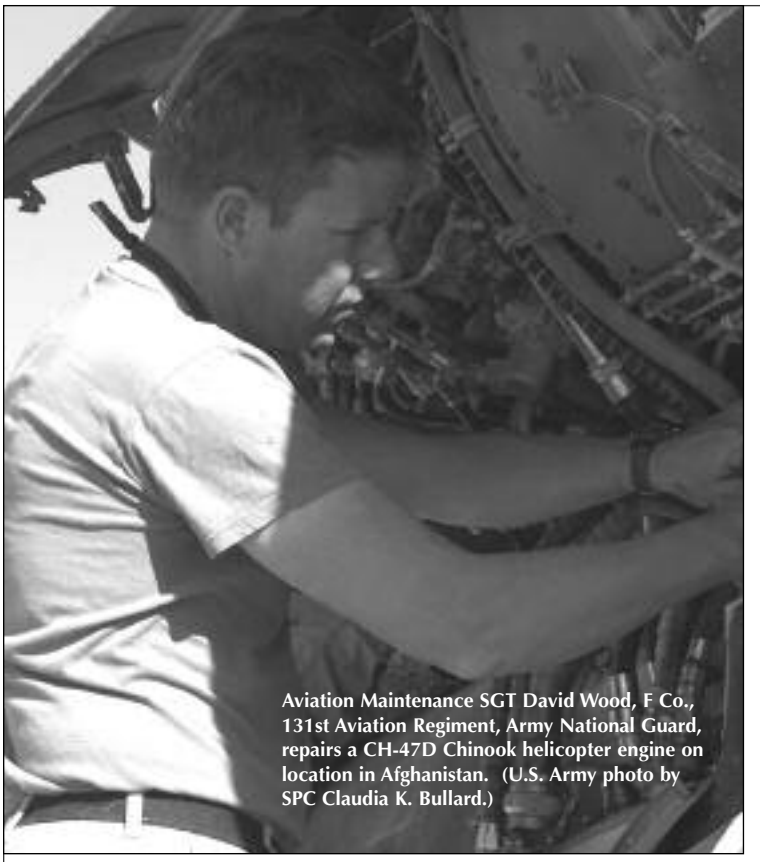
For more information about SLDP, contact Chandra Evans-Mitchell, Program Analyst, U.S. Army Acquisition Support Center, Fort Belvoir, at (703) 805-1247/DSN 655-1247 or **chandra.evans-mitchell@us.army.mil**.

AMC to Centrally Manage Contract Maintenance

Sandy Rittenhouse

The U.S. Army Materiel Command's (AMC's) responsibilities for maintenance of Army equipment have increased dramatically over the past several years. The following recent memorandums of agreement (MOAs) document some of those responsibilities:

- A January 2007 MOA between the Army Chief of Staff for Installation Management and AMC transfers operational control of maintenance performed by the Directorate of Logistics to AMC.
- An April 2007 MOA between the U.S. Army Training and Doctrine Command (TRADOC) and AMC transfers operational control of TRADOC's maintenance mission to AMC.



Aviation Maintenance SGT David Wood, F Co., 131st Aviation Regiment, Army National Guard, repairs a CH-47D Chinook helicopter engine on location in Afghanistan. (U.S. Army photo by SPC Claudia K. Bullard.)

As AMC executes new responsibilities, its contracting office is working with the Army Contracting Agency (ACA) on a concept to reduce redundancy of contracts for field maintenance. Currently, the Army is spending billions contracting for maintenance with multiple organizations. In 2006, AMC surveyed Army contracting centers on the number of contracts, dollars and contractors that were performing maintenance work for other than aviation. The results showed that in 2005, approximately 26 contracting offices had awarded 145 contracts to 94 vendors for $2.2 billion. Many of these contracts were awarded by contracting offices for commanders striving to provide responsive support for their deployed forces, but the end result was a series of fragmented and duplicative maintenance contracts lacking centralized management and a strategy for the future.

The concept for changing this is based on a database of current multiple award indefinite delivery/indefinite quantity contracts. AMC is developing this database so all Army contracting offices will be able to place orders for maintenance against those contracts. It will be called the Corporate Maintenance Contracting Database (CMCD) and will be accessed through a portal on the Army's Single Face to Industry, where all open solicitations are posted.

The core of contractual instruments to be included in the CMCD are:

- Fort Hood, TX, ACA's Aviation Joint Administrative Management Support Services focusing on maintenance, quality control and inspection services for aviation and missiles.
- U.S. Army Communications-Electronics Life Cycle Management Command (LCMC) Rapid Response focusing on electronics.
- U.S. Army Sustainment Command's Global Maintenance and Supply Services concentrating on Army Pre-positioned Stocks and contingency support.
- U.S. Air Force Contract Field Teams focusing on aviation, missiles, and tracked and wheeled vehicles.
- U.S. Army TACOM LCMC Focused Sustainment covering wheeled and tracked vehicles.
- ACA Southern Region Field and Installation Readiness Support Team focusing on field-level logistics and maintenance support.

All of these contractual vehicles have high-dollar ceilings and can accommodate task orders from many contracting offices.

Once the database is in place, a customer needing contract maintenance support can go to a contracting office. The contracting office will go to the CMCD and, working with the customer, decide on the best fit between the requirement and the contract. The customer will then document the requirement and the funding, and the contracting office will solicit responses from the contractors under the selected contract and award the task order.

There are multiple benefits to centrally managing maintenance contracts. The obvious one is being able to inform AMC and Army leadership how much is being spent on maintenance as AMC tracks task orders and dollars through the database. Another is that the database creates a central place for customers and contracting offices to go for maintenance support, which should lead to quicker response times. Additionally, AMC plans to develop and collect metrics from maintenance corporate contract customers on contractors' performance. Since many contractors work under multiple maintenance contracts, this will enable AMC Headquarters (HQ) to evaluate contractors' performance on maintenance at the corporate level — a first for the Army.

Sandy Rittenhouse works in the AMC HQ Command Contracting Office. For more information on contracting for maintenance, contact her at (703) 806-8249/DSN 656-8249 or ***sandy.rittenhouse@us.army.mil****.*

SDDC Wins DA Deployment Award

The Surface Deployment and Distribution Command's (SDDC's) 841st Transportation Battalion (841st TB), Charleston, SC, has won the prestigious DA Deployment Excellence Award after competing against 40 other sites. The award recognizes units for outstanding deployment accomplishments and captures initiatives that may improve the Army's deployment processes. SDDC's Contracting Officer Robin Thomas and Contract Specialist Garfield Landrum provided excellent stevedoring and other essential contracting support for the 841st TB to meet its mission of conducting surface deployment, command and control, and distribution operations for DOD through terminals and facilities in Charleston; Savannah, GA; and the U.S. Northeast coast in peacetime and war.

During FY06, no other unit provided greater support to our warfighting units than the 841st TB, having successfully conducted more than 108 vessel operations handling over 41,000 pieces of cargo, while serving as the Single Port Manager for all East Coast strategic seaports except Florida. The 841st TB introduced several innovative concepts for streamlining the deployment process:

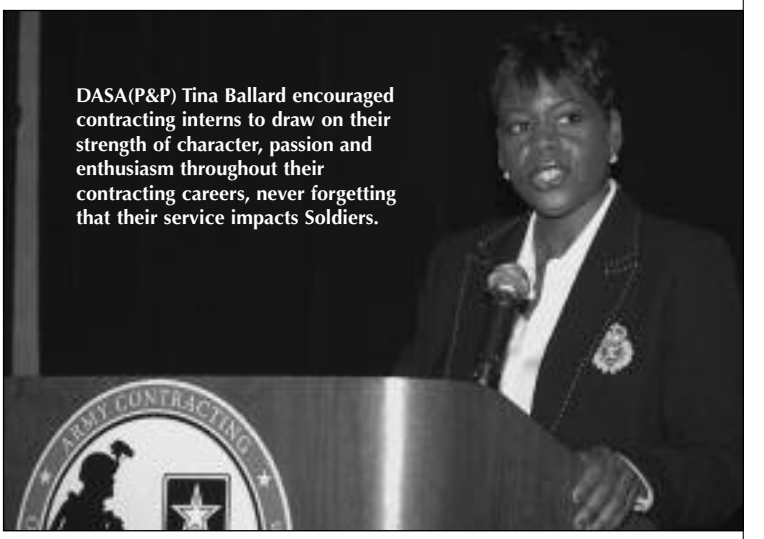
- Teaming with commercial enterprise to share information and demonstrate new business processes and technologies in support of DOD movements.
- Incorporating new technologies such as Battle Command Sustainment Support System.
- Serving as the U.S. Army Reserve "Center of Excellence" in large, medium-speed, roll-on/roll-off ship training for more than 300 Soldiers.

For more information, contact SDDC Business Support Division Procurement Analyst Rosemary Kemp at (703) 428-2036/DSN 328-2036 or **kempr@sddc.army.mil**.

Contracting Interns — The Army Needs You

Meg Williams
U.S. Army photos by Richard Mattox,
Program Executive Office Enterprise Information Systems

The 2007 Army Contracting Intern Training Symposium opened with stirring words from COL K.C. Jones, Military Deputy to the Deputy Assistant Secretary of the Army (Policy and Procurement) (DASA(P&P)). Jones exhorted the interns to absorb the knowledge from senior Army leaders and principal assistants responsible for contracting (PARCs) who would be sharing their insights. And he made it clear why the symposium was held. "You bring fresh ideas, fresh attitudes and energy to Army contracting," Jones said. "You hold the key to the Army's future success. Uncle Sam may want you, but the Army needs you!"



DASA(P&P) Tina Ballard encouraged contracting interns to draw on their strength of character, passion and enthusiasm throughout their contracting careers, never forgetting that their service impacts Soldiers.

The symposium, held in Louisville, KY, March 26-29, provided training to 266 second-year contracting interns and contracting intern coordinators.

Characteristics of Good Leaders

Providing a foundation for the entire event, U.S. Army Acquisition Support Center (USAASC) Director Craig A. Spisak inspired interns with a presentation on the "Characteristics of Good Leaders." "Foremost, good leaders exude integrity," Spisak counseled. "Displaying integrity, one of the Army's seven values, is critical for success in the contracting profession. Second, good leaders raise the bar on excellence for themselves, their colleagues and their superiors. It's not easy to tell somebody that the product they

"The Army needs you," COL K.C. Jones, Military Deputy to the DASA(P&P), told the contracting interns.

have brought to you is not good enough," Spisak countinued. "It's not comfortable. And yet a good leader recognizes this as an uncomfortable and unnatural act and does it anyway."

"Passion and enthusiasm are key ingredients to inspiring others," Spisak explained. "Let me encourage you to go look at what the Army is doing, because everything you do has an incredible impact on this Army and you should take it very seriously and do it with an incredible amount of pride. With passionate enthusiasm in our everyday work, we can create an incredibly powerful contracting community. And in our private lives, we can inspire and motivate others to want to join us in this very noble service."

Spisak encouraged the contracting interns to display character and confidence, as these characteristics are as inspiring as passion and enthusiasm. Good leaders will have much better results motivating others when they are excited about what they are doing and they are confident that they will be successful.

"Selfless service is also one of the Army's seven values and truly should be your own personal internal motivation," Spisak remarked. "Good leaders don't do anything for their personal rewards or gain. Good leaders do not rise and ascend to positions of greater authority and responsibility off the broken backs of others. As you approach your responsibilities, do so with selfless service in mind. Approach your job every day with the opportunity to make a difference and impact those around you," Spisak concluded.

USAASC Director Craig A. Spisak outlined the characteristics of good leaders to the second-year contracting interns.

Symposium Highlights

The interns attended breakout sessions in which they were briefed on ethics; the Army's major commands; Army civilian leadership development; intergenerational issues in the workplace; competitive professional development; federal government benefits; the CP-14 workforce roadmap; and the Army Civilian Training, Education and Development System. In addition, the interns learned about contracting career opportunities available to them such as procuring contracting officer, cost/price analyst, procurement analyst and small business advisor.

Lynn DeRoche, Executive for Contracting, TACOM Life Cycle Management Command, Rock Island, IL, described how cost/price analysis was key to a successful outcome in the work she and a team of analysts undertook to definitize a complicated Logistics Civilian Augmentation Program task order contract being performed by Kellogg, Brown and Root (KBR). In September 2004, the Defense Contract Audit Agency (DCAA) determined that the $6.4 billion ceiling-priced contract the Army had with KBR to provide dining facilities (DFACs), laundry services, transportation and other day-to-day Soldier services needed a valid definitization proposal. The Army agreed to negotiate a definitive price by March 31, 2005. This contract had been receiving critical news coverage and congressional interest. The DFACs alone accounted for $1.5 billion of the task order cost. "DCAA said we were paying too much for dining facilities," DeRoche explained. "The bottom line for the Army was that we did not want to pay for people who did not eat."

To help sort out the myriad details involved in the DFAC cost issue, cost/price analysts used the data they had to perform parametric analysis to establish activity in the absence of complete traditional data. To establish a reliable projected cost for the balance of contract performance, they used regression analysis to project trends based on past activity. The data analysis results allowed DeRoche's team to negotiate a settlement on the DFAC issue that resolved the concerns that had been raised by DCAA. "In the process of doing that, we negotiated a $55 million discount from the previously billed cost," DeRoche said.

Advice From Senior Leaders

Senior Army contracting leaders were generous in giving advice to the interns. "Stay strategic, be disciplined and deliberate," counseled Kevin Fahey, Program Executive Officer, Ground Combat Systems. "When choosing a mentor, make sure that person is busy. Get on that person's calendar. Don't send an e-mail asking to meet them."

Mark J. Lumer, U.S. Army Space and Missile Defense Command PARC, told interns to take charge of their own careers. "Decide what's important to you — location, management, nonmanagement, maximizing advancement," he instructed. "If you're not mobile, it's a career-limiting choice. Likewise,

obtaining the skills your supervisor's supervisor has, updating your credentials and keeping your records current pays off. You are being evaluated and judged every day on your attitude, flexibility and adaptability," Lumer remarked.

Dr. Angela Billups, Acting Director, Information Technology E-Commerce Contracting Center, instructed the interns to apply the information leaders provided them. "We're not interested in creating robots," she said. "Be persistent but not insubordinate."

Contracting interns put together a puzzle during an icebreaker exercise.

Concluding the 4-day conference, DASA(P&P) Tina Ballard touched on Spisak's leadership speech. "This week has focused on equipping you to succeed," she told the interns. "Recall the words of Craig Spisak as he talked about enthusiasm and passion. In our business we have the opportunity to get things done. If your passion should ever wane, draw on the strength of your personal character. Never forget that your service impacts Soldiers. Keep the Army strong!"

To access the presentations given at the 2007 Army Contracting Intern Training Symposium, follow these steps:

- Login to Army Knowledge Online at **www.us.army.mil**.
- Using the "Search" tool function, type in "2007-Intern Training Symposium."
- Select "2007-Intern Training Symposium" from the list of links.

If you have questions, e-mail Terri Harrison at **terri.harrison@us.army.mil**.

Meg Williams provides contract support to USAASC through BRTRC Technology Marketing Group. She has a B.A. in English from the University of Michigan and an M.S. in marketing from Johns Hopkins University.

Federal Acquisition Regulation (FAR) Small Business Team Established

Barbara Binney

On Feb. 8, 2007, the *FAR* Regulatory Council agreed to establish a *FAR* Small Business Team. Its purpose is to focus on small business issues and coordinate with the Small Business Administration (SBA) on concurrent SBA and *FAR* rulemaking.

Team members will include small business experts from DOD, General Services Administration, SBA, National Aeronautics and Space Administration and at least two other civilian agencies. The Office of Federal Procurement Policy (OFPP) small business expert will actively participate as a team advisor. The team will work with SBA and OFPP to establish a cooperative rulemaking process and to identify, as early as possible in the regulatory process, any of its regulations that may require simultaneous implementation in the *FAR*.

The team will review and consider the SBA regulations during the *FAR* rulemaking process with OFPP determining whether simultaneous publication in the *FAR* is required and coordinate publication as necessary. To the maximum extent practicable, OFPP, SBA and the team will pursue simultaneous publication of regulations. The team will function in the same manner as the other five *FAR* teams: Acquisition Strategy, Implementation, Finance, Law and Technology, but will focus solely on small business rules. The establishment of this new Small Business Team will synchronize the SBA and the *FAR* rulemaking processes. This will yield greater consistency and more seamless direction and guidance for the acquisition community.

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

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

U.S. Army Acquisition Corps

Annual Awards Ceremony

Celebrating Our Acquisition Stars

The U.S. Army Acquisition Corps (AAC) Annual Awards Ceremony is quickly approaching. This event, which honors the acquisition community's most extraordinary members and the teams they lead, will be held Sunday, Oct. 7, 2007, at the Marriott® Hotel Crystal Gateway in Arlington, VA. Army Acquisition Executive/Assistant Secretary of the Army for Acquisition, Logistics and Technology Claude M. Bolton Jr. will host the event and pay tribute to the uniformed and civilian professionals who work tirelessly behind the scenes to provide combatant commanders and their Soldiers the weapons and equipment they need to execute decisive, full-spectrum operations in support of the global war on terrorism.

Bolton will honor those who have been chosen to receive the Secretary of the Army Awards for Excellence in Contracting; the Life Cycle Logistician of the Year Award; the Department of the Army Research and Development Laboratory of the Year Awards; the Secretary of the Army Awards for Acquisition Director and Project and Product Manager of the Year Awards; and the Army Acquisition Excellence Awards.

This is an important event for the acquisition community to recognize and thank its workforce members who put their best efforts forward and made great strides in more effectively protecting our Soldiers over the past year. To learn more about the 2007 AAC Awards Ceremony, go to **http://asc.army.mil/events/aac_awards**.

What: U.S. Army Acquisition Corps Annual Awards Ceremony
When: Sunday, Oct. 7, 2007
Where: Marriott Hotel Crystal Gateway, Arlington, VA

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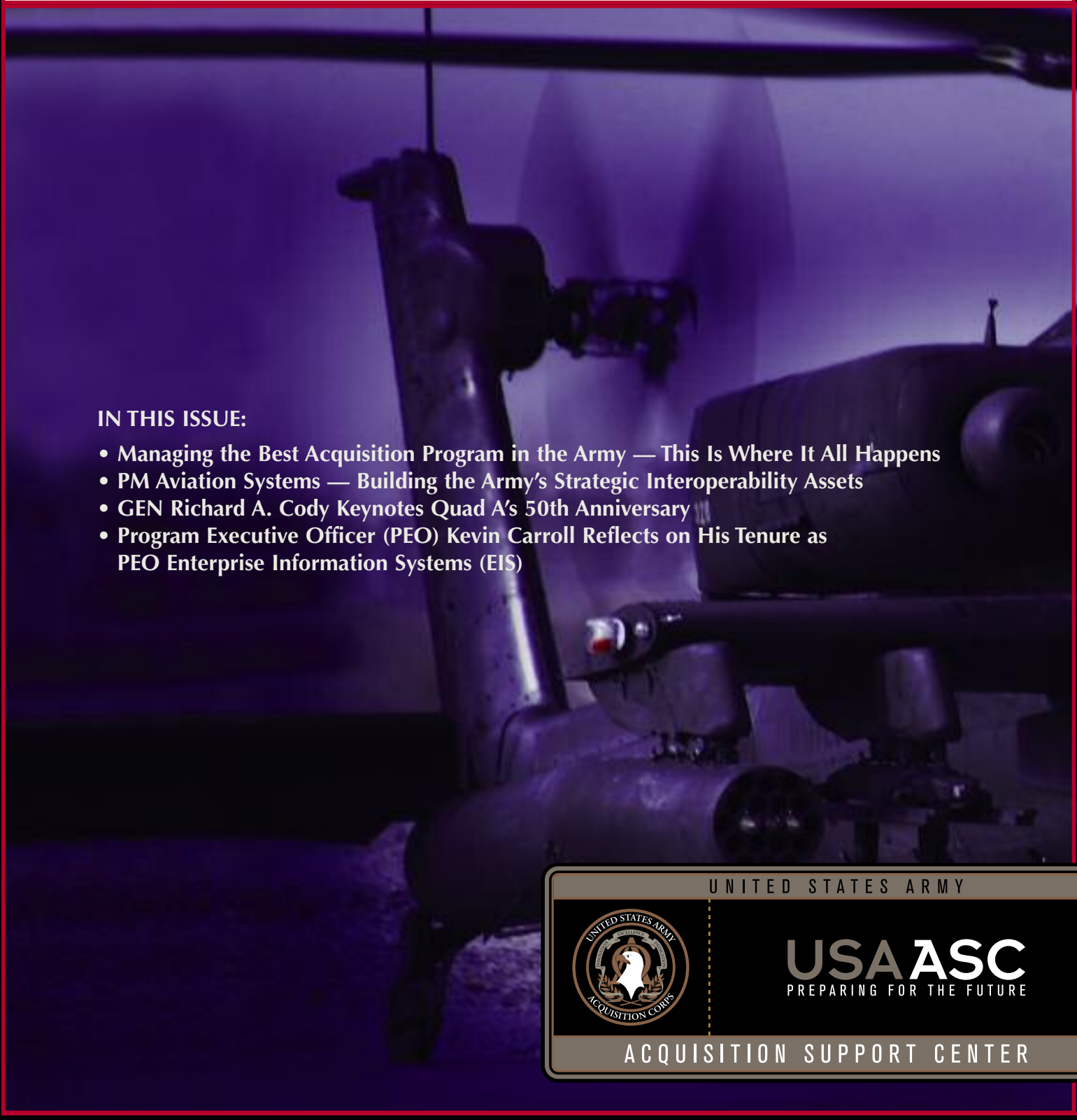

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