



Acquisition & Logistics Excellence

SOLDIER TESTER AT ABERDEEN TEST CENTER HELPS ARMY DEVELOP COMMON REMOTELY OPERATED WEAPON STATION

Mike Cast

The hazards facing U.S. troops who traverse the terrain in Iraq in their Humvees impelled the Army to conduct a short-fuse test and evaluation program that provided them with better armor protection. But soldiers in Iraq also needed a weapon to engage the enemy from a light tactical vehicle without exposing the gunner. And they needed one that could do so at a distance. As the Army developed a weapon to meet those needs, the efforts of a soldier assigned to the Aberdeen Test Center (ATC)—Army Sgt. John Lowe—made a critical difference.

The test center, one of many belonging to the Developmental Test Command, has been a key player in the program to test and refine the solution called the Common Remotely Operated Weapon Station, or CROWS. Lowe not only provided soldier input as the system developed, but also took part in a rapid-reaction operational test and deployed to Iraq recently to train soldiers in its use.

Many of the weapon systems in the Army's arsenal are technological wonders, but they have had to undergo several phases of rigorous testing and evaluation by engineers and technicians before they were deemed capable of meeting the Army's evolving mission requirements. The war against terrorism in Afghanistan and Iraq has changed that paradigm, forcing the acceleration of test schedules and other measures, including the issuance of "urgent material releases" so that systems badly needed by American troops get into their hands in the shortest possible time.

U.S. military police in Iraq had received the CROWS to conduct an operational assessment in December 2003; and in April 2004, the system entered its development and demonstration phase, one of the phases in the acquisition cycle that "is all about reliability," according to Lt. Col. Kevin Stoddard, the Army's product manager for Crew Served Weapons at Picatinny Arsenal, N.J. That's when ATC and its test facilities played a significant role, Stoddard said. Lowe was committed to making CROWS an effective and reliable system, he adds.

CROWS—The Common Remotely Operated Weapon Station

CROWS, a system manufactured by Recon/Optical, Inc., of Barrington, Ill., a leading manufacturer of tactical reconnaissance cameras, is designed to be mounted to a number of vehicles, including the M1114 up-armored Humvee for armored scouts and military police. Four crew-served weapons have been integrated into and demonstrated on CROWS: the M2 heavy barrel, .50 caliber machine gun; the MK19 grenade machine gun; the M240B, 7.62-millimeter machine gun; and the M249, 5.56-millimeter squad automatic weapon.



The CROWS sensor suite includes a daytime video camera, a second-generation forward-looking infrared (FLIR) sight, and a laser range finder for day and night missions. The system also features a ballistic computer and stabilization system so it can operate effectively when a vehicle is driving over rough terrain.

With the aid of its streaming video and the laser range finder, a gunner can continuously pan 360 degrees while on the move in an urban environment, zoom in on a target, and select a point of impact. The ballistic computer is designed to adjust the weapon's point of aim accordingly. With a stationary platform, the system is designed to be capable of identifying, targeting, and destroying enemy elements beyond 2,000 meters with one-shot, one-kill accuracy and no collateral damage.

While civilian professionals do much of the testing and evaluation of military systems, an essential part of the acquisition process is input from soldiers who can spot and help the Army correct problems that civilian testers may not see from the soldier's perspective. Lowe, assigned to ATC at Aberdeen Proving Ground in Maryland, provided a great deal of valuable soldier insight, making it possible to equip various units in Iraq with a system



Soldiers in Iraq prepare for a live-fire exercise using CROWS.
U.S. Army photographs.

that works as it should, Stoddard says, adding that Lowe's experience with the system at ATC also made him the logical choice to provide training to soldiers in Iraq.

Technologically sophisticated systems can have their idiosyncrasies, and it is the job of soldiers such as Lowe and others classified as "soldier operator, maintainer, tester and evaluator" (SOMTE) to find them, Stoddard explains. In addition to Lowe, he credits ATC staff and other SOMTE troops at ATC with helping to fine-tune CROWS and make it a more effective weapon system.

While the CROWS program was progressing through the acquisition cycle, the war in Iraq prompted an "urgent operational needs statement," which was sent to the Pentagon, Stoddard says, adding that the Pentagon response was to suggest that CROWS be fielded to soldiers in Iraq under an "urgent material release." CROWS was then classified as an operational test item, and it underwent testing by soldiers at Fort Bragg, N.C. Lowe was sent to Fort Bragg to take part in that phase of testing.

"When I assumed responsibility for the program, I had a schedule that was looking out at the July [2005] timeframe," Stoddard says. "We were going to finish up then and go into operational test at that time, but because of the urgency of the system and the fact that we wanted to get it right, we cut six months off it. Chris Merrill, ATC's test director for the CROWS program, and his team were working weekends. Starting in the September timeframe, Sgt. Lowe and those guys were out [on the range] every day. In terms of taking the system out and running it through all of its wickets—environmental chambers, electromagnetic interference chambers, automotive test-

ing—all that was done by Chris's team as well as Sgt. Lowe and the SOMTE soldiers."

Lowe arrived at Fort Bragg at the beginning of January 2005, and the operational test took place later that month. He also helped with CROWS training while there. "We had validated operations manuals and training manuals," Stoddard explained. "Sgt. Lowe helped with that. The reason it was so good to do that was that we were really moving fast on this program. We pulled out all the stops."

While various manufacturers produce remotely operated weapon systems, there is a difference among the systems in their level of "maturity" and effectiveness in meeting the Army's current needs, Stoddard said. The test team helped to identify what the Army really needs, he said.

Lowe received stateside training for his deployment to Iraq and then deployed there in early 2005 to link up with an equipping team that Stoddard's organization has in place. The Multinational Corps Iraq oversees a force-modernization group that coordinates fielding of systems there. They worked closely with Stoddard's team to develop a plan that identified several U.S. units under varying commands that need CROWS to conduct their operations.

Soldiers in identified units come to the fielding site with their vehicles so that installation kits and then CROWS can be placed on them. The work takes three days, Stoddard explained, and during that time the soldiers receive classroom training with Lowe's help. They also get about



a week of hands-on training on a basic-skills trainer, where they go through all the system controls and get mission scenarios using the actual system software. After that they get additional training by getting the feel of the system while the Humvees drive around. CROWS night-time capabilities and the 2,000-meter range of the weapon system mean changes in doctrinal tactics, for which soldiers need to train, Stoddard said.

As a reservist, Lowe requested to extend his tour of duty in Iraq to work any remaining kinks out of the CROWS. "He didn't have to go to Iraq, and he didn't have to go to my operational test," Stoddard said. "We are fortunate to have that type of dedication. He always wanted everything to be right. When we did demos he was out there early, making sure the rehearsals were done, that everything performed correctly. He took a lot of ownership and pride in this product. No money in the world can buy that."

Cast is with Developmental Test Command Public Affairs, Aberdeen Proving Ground, Md.

USTRANSCOM PRESS RELEASE (AUG. 5, 2005)

AMC AND DLA ESTABLISH NEW INFORMATION INTERFACE TO IMPROVE DISTRIBUTION PROCESSES

SCOTT AIR FORCE BASE, Ill.—The Air Mobility Command and Defense Logistics Agency have launched an information technology solution that will help provide earlier visibility of inbound cargo destined for troops overseas. The new interface will improve information flow between DLA's Consolidation and Containerization Points (CCPs) information system and the one used at Air Force aerial ports.

The new solution allows information in DLA's Distribution Standard System (DSS) to interface with the Global Air Transportation Execution System (GATES), improving the information flow between CCPs and aerial ports of embarkation (APOEs).

DLA and AMC are working to optimize the delivery of equipment and supplies through an initiative facilitated by the U.S. Transportation Command in its role as the DoD's Distribution Process Owner (DPO). The AMC-Defense Distribution Center (DDC) Air Cargo Consolidation Integrated Process Team (IPT) was formed to reengineer processes that have a positive effect on customer wait



Pictured with a CROWS-equipped Humvee are Lt. Col. Kevin Stoddard (left), the Army's product manager for Crew Served Weapons, and Army Sgt. John Lowe at Lowe's duty station in Iraq.

time, item availability, velocity, and demand on strategic transportation assets to benefit deployed forces.

An increasing number of DoD air shipments are consolidated and loaded on an air pallet (termed a 463L pallet). When the 463L pallet is ready for onward movement, it is considered capped and receives a Status Code "C." This new interface then allows the capped cargo to be almost immediately visible to GATES users at the aerial ports. This alerts the airmen at the APOE giving them greater visibility as well as the estimated time of arrival.

The CCP will send two additional updates through DSS to GATES: the first, when the truck destined for the aerial port is completely loaded, and a second when the truck actually departs the CCP facility.

The interface makes information available to everyone from the Air Clearance Authority to the load planner and speeds the process for aerial port cargo handlers as well as those responsible for planning the airlift missions.

Now planners here at the Tanker Airlift Control Center can see the amount of cargo inbound to the various APOEs and adjust airflow to gain efficiency and effectiveness. The airmen at the APOEs gain efficiencies because they do not have to upload data into the GATES



terminals, and load planners are able to enter the planning cycle earlier.

This information interface between DSS and GATES is one of many initiatives aimed at improving the distribution system to deployed warfighters.

DEPARTMENT OF DEFENSE NEWS RELEASE (JULY 8, 2005) **JOINT UNMANNED AERIAL VEHICLE TEAM, CENTER OF EXCELLENCE ANNOUNCED**

The Department of Defense announces today the establishment of two organizations to coordinate the development and use of unmanned aerial vehicle (UAV) capabilities.

The first organization is a Joint UAV Overarching Integrated Product Team (OIPT), which will provide a forum to identify and resolve materiel issues and seek solutions common to all the military Services. The OIPT will concentrate on improving UAV system interoperability and will promote standardization and commonality of UAV systems and components through shared research and development.

The Marine Corps will initially chair the OIPT, and the chairman position will rotate among the four military services. The OIPT will include representatives of all Services, the Joint Staff, Joint Forces Command, the Office of the Secretary of Defense, and combatant commands as appropriate.

The JOIPT is a joint forum for making recommendations to the joint capabilities integration and development system (JCIDS) process to meet warfighter requirements. It will coordinate with the JUAV Center of Excellence when the lines between material and non-material solutions blur.

The second organization announced today is the Joint UAV Center of Excellence (COE). The COE is designed to improve interoperability and use, and will examine the use of sensors and intelligence collection assets to meet joint operational requirements of U.S. forces in any combat environment. This will be an operationally focused organization concentrating on UAV systems technology, joint concepts, training, tactics, and procedural solutions to the warfighters' needs. The Joint COE will stand up at Creech Air Force Base (Indian Springs Airfield), Nev., later this year.

Initial operational capability for the center is scheduled for fall of this year. A Joint UAV COE working group, including a Joint Site Activation Task Force, will be stood up this summer to support the initial operating capability.

The Army will initially lead the Joint UAV COE with the Air Force as deputy. These positions will rotate among the four military services. Once established, the center will have representatives from all four military services and other DoD and non-DoD agencies.

DEPARTMENT OF DEFENSE NEWS RELEASE (JULY 22, 2005) **2005 MAINTENANCE AWARD WINNERS ANNOUNCED**

The Department of Defense announced today the winners of the Secretary of Defense Maintenance Award for 2005. The recipients are:

SMALL CATEGORY

Aircraft Intermediate Maintenance Department, Naval Air Station/Joint Reserve Base New Orleans, La., United States Navy

31st Maintenance Operations Squadron, 31st Fighter Wing, Aviano Air Base, Italy, United States Air Force

MEDIUM CATEGORY

428th Transportation Company, Jefferson City, Mo., United States Army

Combat Service Support Battalion 12, 1st Maintenance Battalion, Camp Pendleton, Calif., United States Marine Corps

LARGE CATEGORY

3rd Battalion, 7th Field Artillery Regiment, Schofield Barracks, Hawaii, United States Army

USS George Washington, Naval Station Norfolk, Va., United States Navy

Annually, the Secretary of Defense Maintenance Awards Program recognizes outstanding achievements in military equipment and weapon systems maintenance by field-level organizations of the military services. Awards are presented in the categories of small, medium, and large units.



Acquisition & Logistics Excellence

DEPARTMENT OF DEFENSE NEWS
RELEASE (JULY 28, 2005)

FOUR WINNERS SELECTED FOR MODELING AND SIMULATION AWARDS

The Department of Defense announced today that four winners have been selected for the seventh annual Department of Defense Modeling and Simulation (M&S) Awards. The winners for each category are:

ACQUISITION

Joint Services Lightweight Standoff
Chemical Agent Detector Team, Joint Program
Executive Office for Chemical Biological Defense

Team award for innovation in the employment of a comprehensive M&S approach to support systems engineering analysis. Future standoff detection and contamination avoidance programs will use this effort as a baseline for implementing best engineering practices, which will lead to improved chemical, biological, radiological, and nuclear systems, and a greater capability for the warfighter.

ANALYSIS

Joint Analysis Team, Headquarters and Support
Activities Joint Cross-Service Group
(Center for Army Analysis, Air Force Studies and
Analysis Agency, Center for Naval Analyses)

Team award for providing senior DoD leaders with groundbreaking and innovative analytical solutions to complex challenges during the Base Realignment and Closure review.

TRAINING

U.S. Air Force Distributed Mission Operations Center,
505th Distributed Warfare Group

Team award for producing unmatched immersive synthetic combat environments for Air Force Virtual Flag exercises that linked the operational and tactical levels of war, directly increased joint readiness, and put the warfighter in charge of driving training transformation requirements.

CROSS-FUNCTION

Geometric Pairing Development Team,
U.S. Army Test and Evaluation Command

Team award for advancing "state-of-the-art" live force-on-force simulation, and the realistic integration of live, virtual, and constructive synthetic environments that will ultimately permit warfighters to truly train as they fight and operational testers to test as the warfighters fight.

The annual awards recognize achievement in support of DoD M&S objectives. Forty-eight nominations were received from across DoD.

For more information on the DoD M&S awards program visit: <<http://www.dmsso.mil/public/community/awards/>> or contact the Defense Modeling and Simulation Office at (703)824-3437 or pao@dmsso.mil.

DEPARTMENT OF DEFENSE NEWS RELEASE (AUG. 5, 2005) 2005 MAINTENANCE DEPOT-LEVEL AWARD WINNER ANNOUNCED

The Department of Defense announced today the inaugural winner of the Secretary of Defense Depot-level Maintenance Award known as the Robert T. Mason Award for Depot Maintenance Excellence for 2005.

The recipient is the Design and Manufacture Vehicle Armor Protective Kits Program at the U.S. Marine Corps Maintenance Center, Albany, Ga., in support of Operation Iraqi Freedom (OEF II), Operation Enduring Freedom, and the Global War on Terrorism. This program, which provided protective armor kits for USMC combat vehicles, made the Marines a more effective fighting force and had a profound, direct impact on safety and morale.

The depot-level maintenance award is named in recognition of Robert T. Mason, a former assistant deputy secretary of defense of maintenance policy, programs, and resources. Mason served as the champion of organic depot maintenance for three decades, while helping to transform DoD organic depot-level operations.

DEPARTMENT OF DEFENSE NEWS RELEASE (AUG. 9, 2005) DOD SELECTS TRIBAL COLLEGES AND UNIVERSITIES FOR GRANTS

The Department of Defense announced today plans to award instrumentation grants totaling \$2.42 million to nine tribal colleges and universities. These grants will be made under the fiscal 2005 DoD Historically Black Colleges and Universities and Minority Institutions Infrastructure Support Program. The grants will enhance programs and capabilities at these minority institutions in scientific disciplines critical to national security and the DoD.

This announcement is the result of merit competition for infrastructure support funding conducted for the Of-



fice of Defense Research and Engineering by the Army Research Office. The solicitation resulted in 15 proposals in response to a broad agency announcement issued in February 2005. The Army Research Office plans to award nine equipment grants ranging from \$66,000 to \$400,000. Each award will have a 12-month performance period. Awards will be made only after written agreements are reached between the Department and the institutions. The list of recipients is available at: <<http://www.defenselink.mil/news/Aug2005/d20050809Tribal.pdf>>.

NEWS RELEASE—COMBAT FEEDING DIRECTORATE, U.S. ARMY SOLDIER SYSTEMS CENTER (AUG. 29, 2005) **COMBAT FEEDING SPEARHEADS RADIO FREQUENCY IDENTIFICATION**

NATICK, Mass.—Two members of the Combat Feeding Directorate were awarded for their contributions to the introduction of radio frequency identification to the Defense Department.

Gerald Darsch, Combat Feeding director, and Kathy Evangelos, Combat Feeding program integrator, were presented with the Office of the Secretary of Defense Award for Excellence by Alan Estevez, assistant deputy undersecretary of defense for supply chain integration, in a ceremony in Washington D.C., July 28.

As a result of their early efforts, the Defense Department was able to quickly adopt and deploy this technology to revolutionize military supply chain management, military logistics, and readiness.

“Your vision played a critical role in the adoption of this technology. The Defense Department would not be where it is today if it were not for your dedication and perseverance in bringing this to the highest levels of the Defense Department,” Estevez said.

Radio frequency identification technology provides automated, real-time logistics and information on Class 1 and other classes of supply for the Defense Department. It is based on the electronic product code, which is a unique number that identifies a specific item in the supply chain. Passive radio frequency identification tags composed of a microchip holding an electronic product code and an antenna that receives a radio frequency signal are attached to a unit of supply, such as a pallet.

Powered by a reader, the tags emit a radio signal that transmits the electronic product code and other infor-

mation back to the reader. Sensor integration on tags provides the capability to monitor the status of an item, pallet, or container by detecting any number of variables, such as temperature, vibration, rough handling, and chemical biological contamination.

During the ceremony, Estevez cited the implementation of radio frequency identification in March 2005 to support Marine Corps Forward Operating Bases in Iraq. The Marine Corps has reduced inventory from \$127 million to \$70 million, reduced wait time from 28 to 16 days, increased fill rates from 77 percent to 89 percent, and reduced retail backlog from 92,000 to 11,000 orders.

These innovations and accomplishments were facilitated partly by the new Defense Department radio frequency identification policy published in July 2004. The Defense Department Combat Feeding Radio Frequency Identification Team provided significant lessons learned to drive the policy and move the Defense Department forward by providing consultation and influence on both the Defense Department and commercial implementations of radio frequency identification.

DEFENSE ADVANCED RESEARCH PROJECTS AGENCY NEWS RELEASE (AUG. 11, 2005) **DARPA CONTRACTORS, STAFF RECEIVE AWARDS FOR EXCELLENCE IN PERFORMANCE**

Dr. Anthony J. Tether, director of the Defense Advanced Research Projects Agency announced the winners of the 2005 DARPA Awards for Excellence at *DARPA Tech 2005*, DARPA's 24th Systems and Technology Symposium, in Anaheim, Calif.

Director's Award for Outstanding Personal Accomplishment

Tether awarded the 2005 Director's Award for Outstanding Personal Accomplishment to Dr. Robert Hummel, program manager in DARPA's Information Exploitation Office. Hummel was honored for developing imagery exploitation technologies that have transformed our nation's capabilities to detect elusive adversaries. His efforts led to several significant technical breakthroughs in automatic target recognition, three-dimensional data exploitation, and improvised explosive device detection. He directed the rapid transition of DARPA-developed imagery exploitation capabilities to operational users.

In presenting the award, Tether explained, “Bob Hummel is powered by ideas. He is energized—and energizes



others—in the pursuit of ideas to ensure that U.S. forces have the world's best warfighting capabilities.”

Award for Sustained Excellence by a Performer

DARPA presented two Awards for Sustained Excellence by a Performer. AeroVironment Inc., Monrovia, Calif., received the Award for Sustained Excellence by a Performer for developing the Wasp micro air vehicle. With an innovative design that uses a main battery as the wing structure, the small vehicle is able to provide real-time images and data to warfighters. “The vehicle set an endurance record for micro air vehicles that is three times longer than any comparably equipped and sized air vehicle, demonstrating the significant utility of these vehicles in military operations,” said Tether.

The Award for Sustained Excellence by a Performer was also presented to the Command Post of the Future (CPOF) Front-Line Team—ISX Corp. (Camarillo, Calif.); Global InfoTek Inc. (Reston, Va.); Oculus Info Inc. (Toronto, Ontario); SYS Technologies Inc. (San Diego, Calif.); and General Dynamics C4 Systems Viz (Pittsburgh, Pa.). CPOF gives U.S. forces an advanced command and control technology to enable distributed operations. CPOF was first deployed two years ago to U.S. Army units in Iraq.

“The CPOF team is a model of how experts from diverse companies and organizations can collaborate to create a highly efficient and effective program,” explained Tether. As a result of CPOF's success in Iraq, the U.S. Army has decided to equip all units with CPOF in the coming years.

Award for Significant Technical Achievement

DARPA also presented two Awards for Significant Technical Achievement. The first winner, BBN Technologies, Boston, Mass., was honored for the development of the Boomerang system, an acoustic shot-detection system providing force protection to U.S. units serving in Iraq. “BBN met demanding development and deployment deadlines in this program,” noted Tether. “They completed a prototype of the Boomerang system 30 days after contract award, and delivered 50 systems to U.S. Marine Corps units deploying to Iraq within 60 days of contract award—a remarkable achievement.”

The second winner of the Award for Significant Technical Achievement was the University of California Information Sciences Institute's Center for Advanced Research in Technology for Education, Marina del Rey, Calif., for the development of the Tactical Language Training System. The system incorporates language skills and non-

verbal gestures such as cultural norms of etiquette to help U.S. forces develop the skills necessary to communicate effectively with the local populace.

“The U.S. Army and Marine Corps adopted this system and are using it today to prepare troops for duty in Iraq,” said Tether. “I can best summarize the system's success by quoting one soldier's words: ‘I learned more in one day with this than I learned in my whole tour in Iraq.’”

Award for Small Business Innovation Research

DARPA presented the Award for Small Business Innovation Research to Dot Metrics Technologies Corp., Charlotte, N.C., for demonstrating a new method of introducing deep-green luminescent nanostructures into semiconductor materials for light emitting diodes. Dot Metrics achieved this breakthrough via a proprietary process sequence that produces a higher efficiency electroluminescent output, tunable to the deep-green portion of the visible spectrum.

“The technology achieved by Dot Metrics will directly translate into solid-state lighting devices that are more weight- and power-efficient,” explained Tether. “The technology will be part of a DARPA program to install innovative lighting systems on U.S. Navy vessels.”

DARPA Award for Sustained Excellence by a Government Agent

Michael Blackstone, a contracts specialist in DARPA's Contracts Management Office, received the DARPA Award for Sustained Excellence by a Government Agent for his support to the CPOF program and program managers in DARPA's Information Exploitation Office. Blackstone reorganized the CPOF performers and contracts into a single team with a prime contractor and key subcontractors to better support important mission requirements.

“He completed the many contracts in record time, thus making sure the program performers had the funds they needed to deliver important new capabilities to U.S. Army units deployed in Iraq,” Tether noted.

The full list of nominees for all award categories is available online at <http://www.darpa.mil/darpatech2005/05awards.htm>.

For questions or more information, contact Jan Walker at jan.walker@darpa.mil.