

Passing the Test for Success

Success on the modern battlefield can be measured in lives — those of enemy forces killed during the fulfillment of U.S. Army objectives in *Operations Enduring and Iraqi Freedom* and, more importantly, those of American personnel saved in the course of those same operations.

The Acquisition, Logistics and Technology (AL&T) Workforce understands that it holds the keys to warfighter success on the battlefield. It takes pride in its accomplishments and accepts the challenge and responsibility of providing superior weapons, equipment, services and support.

The AL&T Workforce is joined in these efforts by numerous other activities, including the various U.S. Army Life Cycle Management Commands (LCMCs), program and project managers and program executive offices (PEOs).

“We are saving lives through a holistic approach to force protection,” Army Acquisition Executive Claude M. Bolton Jr. recently said, “including personal body armor, vehicle armor, electronic countermeasures, greater situation awareness, improved weapon system capabilities, and better training and operational focus. ... Our warfighters rely on and deserve the very best protection, equipment and weapon systems that America can provide.”

Some of the systems that have helped save the lives of those Soldiers, or allowed them to more effectively perform their missions and thus secure the frontline of defense for our Nation, are highlighted on the following pages.

Editor-in-Chief

Soldiers from the 720th Military Police Battalion, 151st Field Artillery Regiment, react to enemy small-arms fire near Baghdad, Iraq, in late October 2005. (U.S. Army photo by SPC Gul A. Alisan.)

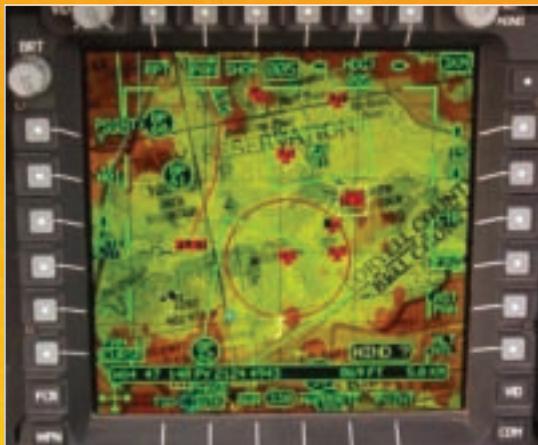


PEO Aviation

Apache Map Keeps Both Crew Members in the Fight

Some AH-64D Longbow Apache helicopter crews now have digital maps that allow them to quickly orient on key terrain features, negating the need for one member to refer to a cumbersome paper map while in flight. This system can cover an area up to 300 kilometers square and display maps in a variety of scales, types, views, contour line intervals, levels and elevation color schemes. These maps can be panned, oriented, used to depict threat rings and intervisibility and de-centered to show greater area ahead of a helicopter. The system is being used in Iraq by the 1st Battalion, 3rd Aviation Regiment, and 3rd Battalion, 3rd Aviation Regiment, 3rd Infantry Division.

Aircrews can now also count on the infrared (IR) strobe, which helps friendly aircraft pick each other out against an urban background at night, significantly reducing midair collisions and the potential for fratricide. Installation began in October 2004, and all Kiowa Warrior and Apache aircraft operating as part of *Operations Enduring* and *Iraqi Freedom* are now equipped with them.



An Apache digital map image. (U.S. Army image courtesy of PEO Aviation.)



An IR strobe shown circled in red. (U.S. Army photo by Albert Eaddy.)



After providing a night of close combat air support for ground forces, an AH-64 Apache helicopter prepares to land at Camp Taji, Iraq. (U.S. Army photo by TSGT Russell Cooley IV, 1st Squadron Combat Camera.)



U.S. Army Tank-automotive and Armaments Command (TACOM) LCMC

Stryker Cupola Shield

Constructed of ballistic-grade titanium, the Stryker Cupola Shield is a lightweight protective device that attaches to the sides of the rotating cupola on Stryker fire support and reconnaissance vehicle variants, providing added protection for exposed Soldiers. The shield was developed by the U.S. Army Armament Research, Development and Engineering Center at Picatinny Arsenal, NJ, in response to an urgent need requirement issued by the Project Manager Stryker Brigade Combat Team (SBCT). It is lighter than conventional steel and, thanks to advanced materials and rapid manufacturing technologies, costs 30 percent less to produce than traditional titanium products. The Stryker Cupola Shield is being used in Iraq by SBCT 2 (1st Brigade, 25th Infantry Division), which received it just as the team was deploying in March 2005. Eventually, all five SBCTs will be equipped with this innovative ballistic solution, which reduces the continued threat from small arms fire and improvised explosive devices that U.S. Soldiers face in Iraq.



A Stryker Cupola Shield. (U.S. Army image courtesy of TACOM LCMC.)



Soldiers from the 25th Infantry Division patrol an area near Mosul, Iraq, in April 2005, in their Stryker Armored Vehicles. (U.S. Air Force photo by TSGT Mike Buytas, 1st Squadron Combat Camera.)



Manufacturer's rendering of the CROWS system.
(Image courtesy of Recon/Optical Inc.)



CROWS being installed on Humvees in April 2005. (U.S. Army photo by PFC Jerome Bishop.)



(U.S. Army photo by Mike Roddin.)



PEO Soldier

CROWS: A Night Hunter

Gunners have one of the Army's most dangerous jobs. Thanks to the Common Remotely Operated Weapon Station (CROWS) — a stabilized targeting system that integrates sensors and fire control capabilities and allows gunners to engage targets on the move using controls from inside a vehicle — the job just got a lot safer. CROWS' vehicular mount supports a variety of heavy weapons and includes a daytime video camera, thermal imagery and a laser rangefinder. CROWS also provides improved accuracy and increased range. "We came under fire at night," recalled CROWS operator SPC Kendall Hargis, Troop K, 3rd Battalion, 278th Armored Cavalry Regiment. "After we maneuvered through the kill zone, I got some hot spots on my thermals about 450 meters away. I could have taken those guys out pretty easy ... CROWS is a night hunter." CROWS' success prompted the Army to announce an Urgent Materiel Release for the weapon, and more than 300 of the systems will be fielded by 2007.



CROWS on vehicles deployed to Iraq.
(U.S. Army photo.)



M-113 armored personnel carrier equipped with add-on armor. (U.S. Army photo courtesy of Project Manager Combat Systems.)



Soldiers in a Bradley Fighting Vehicle, from the 15th Infantry Regiment, 3rd Infantry Division, support Iraqi troops as they search for insurgents near Samarra, Iraq, in June 2005. (U.S. Army photo by SMSG Kim M. Allain.)



Project Manager Combat Systems

Bradley Reactive Armor Tiles Beat the HEAT

A number of add-on armor (AoA) programs have recently contributed to the survivability of both Soldiers and their equipment. Among these are Bradley Reactive Armor Tiles (BRAT), designed especially to defend Bradley Fighting Vehicle Systems against High Explosive Anti-Tank (HEAT) shaped-charged weapons systems like rocket-propelled grenades (RPGs). To date, more than 675 of the required 738 BRAT sets have been acquired and fielded through a rapid procurement program and accelerated production and delivery schedules.

Another AoA program is the rapid procurement initiative to meet Coalition Forces Land Component Command requirements for 734 armor suites for the M113 Family of Vehicles (inset). This suite consists of high hard steel that provides up to 14.5 mm perimeter protection, bar armor application to defeat RPGs, Transparent Armor Gun Shield and cupola protection, and belly mine armor providing protection against improvised explosive devices (IEDs) and mines of up to 22 kg. Currently, more than 220 AoA suites have been installed and fielded.





Army Research Laboratory (ARL)

Untended Transient Acoustic Measurement and Signal Intelligence System (UTAMS)

UTAMS is an acoustic mortar detection system developed by ARL that has been deployed to both Iraq and Afghanistan. It locates the source of an acoustic event — such as mortars, IEDs, RPGs and other explosives attacks — by triangulation. Soldiers at UTAMS location sites sleep better knowing that it helps pinpoint and get “eyes on” opposing forces much faster. It can also be interfaced with certain camera systems. Shown here is Tank Automotive Research, Development and Engineering Center (TARDEC) engineer Karl Tebeau installing a UTAMS array in Iraq.

(U.S. Army photo courtesy of TARDEC.)



Joint Land Attack Cruise Missile Defense Elevated Netted Sensor Project Office

A-170 Airship

The A-170 airship is a 178 foot, free-flying mobile aerial reconnaissance platform that uses the Rapid Aero-stat Initial Deployment System to reach an altitude of 10,000 feet, putting it beyond the range of ground-based weapons. The A-170 can be deployed either manned or unmanned and remain aloft several hours even if punctured. It uses cameras and sensors to produce a detailed view of events on the ground.

(U.S. Army photo by SFC Antony M.C. Joseph.)



TARDEC

Armor Survivability Kits (ASKs) for Wheeled Vehicles

Reacting to an urgent need, TARDEC quickly provided ASKs to truck drivers in Iraq and Afghanistan needing better protection against small arms fire and IEDs. TARDEC and ARL produced a complete armored solution to upgrade Humvees that includes armored doors, fortified windows and armored rocker and rear panels.

(U.S. Army photo by MSG Maurice Hessel.)



Communications-Electronics LCMC

Joint Network Node (JNN)

JNN is a state-of-the-art commercial-off-the-shelf (COTS) communications system that enables exchange of voice, video and data throughout the tactical division and into the sustaining base. It leverages commercial satellite technology to provide beyond-line-of-sight capabilities and commercial Internet networking technology to increase functionality and efficiency while reducing size, weight and power. JNN also provides a high-speed and high-capacity backbone communications network focused on rapidly moving information to support commanders, staffs, functional units and capabilities-based formations; and enables commanders to plan, prepare and execute multiple missions and tasks simultaneously. JNN has been fielded to the 3rd Infantry, 4th Infantry, 10th Mountain and 101st Airborne Divisions.

(U.S. Army photo courtesy of Communications-Electronics LCMC.)



PEO Enterprise Information Systems

Combat Service Support Satellite Communications (CSS SATCOM)

The CSS SATCOM system is a COTS solution that includes CSS Very Small Aperture Terminals in tandem with the CSS Automated Information Systems Interface, a secure wireless interface. CSS SATCOM provides Non-secure Internet Protocol Router net access via satellite to the Army logisticians who order everything from bullets to butter. It is the centerpiece of the Army Deputy Chief of Staff for Logistics' (G-4) goal to "Connect Army Logisticians" and increases CSS enterprise effectiveness by increasing the number of requisition transactions that actually get through, and saves lives by reducing the need for Soldiers to go outside the wire to hand-deliver logistics data to other locations.

(U.S. Army photo by Stephen Larsen.)

PEO STRI

Training Improved Explosive Device (TIED)

TIED is a modular, reconfigurable training system that trains warfighters to recognize and react to IEDs. TIED can be employed by opposing forces in force-on-force training exercises and can be used to replicate roadside bombs, vehicle-borne IEDs and booby traps. It is being used at the Training Support Center at Camp Arifjan, Kuwait, and more than 400 systems were fielded throughout the Army, Marine Corps, Special Operations Command and other services as of September 2005.

(U.S. Army photo courtesy of PEO STRI.)



PM SBCT

Stryker Battle-Damage Repair Facility (BDRF)

The BDRF was set up in late April 2005 to repair battle-damaged Strykers to Full Mission Capable status and return them to the fight. Qatar was chosen because it afforded ready access to air and sea transportation and has an existing industrial base. The BDRF is operated by General Dynamics Land Systems (GDLS) under the U.S. Army's Interim Contractor Logistics Support contract. Thirteen GDLS employees are on-site and five mechanics from Anniston Army Depot are on a 90-day work visit to the repair facility learning to repair battle-damaged Strykers. A PM SBCT representative is on-site maintaining oversight of the BDRF, which contains state-of-the-art equipment comparable to a repair facility located in CONUS.

(U.S. Army photo courtesy of PM SBCT.)





U.S. ARMY CHEMICAL
MATERIALS AGENCY

CMA

Chemical Demilitarization Program Enhances National Security

An element of CMA, the chemical demilitarization program is the Army's third largest acquisition program and is responsible for eliminating in a safe, environmentally friendly and cost-effective manner an entire class of weapons of mass destruction and the facilities formerly used to produce them. This reinforces U.S. leadership in implementing the Chemical Weapons Convention and achieving the worldwide goal of completely eliminating such weapons by 2012. Currently, the U.S. stores chemical weapons at installations in Alabama, Kentucky, Indiana, Arkansas, Colorado, Utah and Oregon, and destroyed stockpiles at Johnston Atoll in 2000 (shown at right before and after destruction) and in Maryland in 2005. Elimination of recovered chemical weapons has required development of new technologies, including the Explosive Destruction System, a mobile unit used to destroy chemical-filled explosives with complete blast, vapor and fragment containment (inset below). CMA also produces payloads for smoke, nonlethal, incendiary, illumination and infrared uses, as well as for riot control and distraction grenades.



CMA's Explosive Destruction System. (Photo courtesy of CMA.)

(Photo courtesy of CMA.)



CMA makes and tests chemically protected field hospital shelters and decontamination systems. (Photo courtesy of CMA.)



Johnston Atoll chemical disposal facility before and after dismantling and environmental remediation. (Photo courtesy of CMA.)



An RG-31 armored car in Iraq. (U.S Army photo by CPL Joe Niesen.)



(Photo courtesy of PEO Ammunition.)



PEO Ammunition

Countermine Vehicles

The 24-ton Buffalo vehicle offers combat engineers a safe, effective means of searching for IEDs, using a 30-foot, remote-controlled, hydraulic arm to prod suspicious items until it is determined whether they are a threat. Blast resistant and heavily armored, Buffalo provides protection from explosives for the vehicle's crew during detection and confirmation missions along roadways and minefields. Another countermine asset, the RG-31 Mine Protective Vehicle (inset at left), serves as an armored personnel carrier for use on- and off-road that can carry 10 Soldiers and provides protection from small arms fire and antitank devices. Pictured are SSGT Owen Rice and SPC4 Marc Fickas, both from Bravo Co., 367th Engineer Combat Battalion, who wrote, "While on a vehicle patrol in southeastern Afghanistan, our vehicle suffered a possible mine strike or IED attack. All five passengers were able to exit the RG-31 and run to the next vehicle in the convoy."



The Buffalo can also be equipped with attachments, such as this roller array. (Photo courtesy of PEO Ammunition.)



Mobile Parts Hospital (MPH)

Conceived of by TARDEC engineers, the revolutionary MPH consists of three individual modules — a Communications and Control Center, a Rapid Manufacturing System and an Agile Manufacturing Cell — that can efficiently fabricate standard and customized parts for vehicles or systems with critical battlefield needs. Since October 2003, MPHs have been deployed to Camp Arifjan, Kuwait; Camp Anaconda, Iraq; and Bagram Air Force Base, Afghanistan, where they have worked vigorously to meet identified maintenance needs and rapidly serviced and repaired parts. Accomplishments include manufacture of the Squad Automatic Weapon (SAW) vehicle mount, recognized as one of the greatest military inventions of the past two years.

“Simply put, the Mobile Parts Hospital has saved lives,” said 2LT Bruce Neighbor, 1486th Transportation Co., deployed in Iraq. “I continue to bring more and more orders to the MPH, and they have fulfilled my every need.”

TARDEC has also been striving to keep Soldiers out of harm’s way through the development of unmanned robotic systems, including the Talon, a Small Unmanned Ground Vehicle (SUGV) used to defuse explosive ordnance; the Omni-Directional Inspection System (ODIS), a robotic delivery platform equipped with a visual camera and an active lighting system that is capable of carrying chemical and biological sensors on its base; the Under Vehicle Inspection System, a prototype small robotic platform that can inspect the underside of vehicles; and Chaos, a robot scheduled to go into production in 2006 that will be able to walk up and down stairs, drive in severe off-road environments and be equipped with a wire-snipping device and a mobility arm that will allow it to drag obstacles.

A Lathe Manufacturing Module (LMM) is put in place by a Rough Terrain Container Handler. (U.S. Army photo by Randy Talbot, TACOM Historian.)



The Talon SUGV has saved lives by helping dispose of explosive ordnance. (U.S. Army photo.)



SAW gun vehicular mounts are one of the critical things manufactured by the MPHs. (Photo courtesy of TARDEC.)



Rudy Miller, TARDEC/National Automotive Center, sets up the LMM (U.S. Army photo by Randy Talbot, TACOM Historian.)



An ODIS robot. (Photo courtesy of TARDEC.)