

Greatest Army inventions of 2007 Announced

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BY U.S. Army Research, Development and Engineering Command

FORT BELVOIR, Va. - The commanding general of the U.S. Army Materiel Command, the U.S. Army vice chief of staff and other senior Army science and technology leaders will recognize the U.S. Army's "Top Ten Greatest Inventions of 2007 " in an awards ceremony June 12 at the Hyatt Crystal City - Arlington, Va.

"This program highlights those outstanding winning technologies selected by the Warfighter that meet army goals; enhance esprit de corps across the research and development and Warfighter communities; and promote public awareness of Army R&D community successes in support of the Warfighter," said Gen. Benjamin Griffin, commander, Army Materiel Command.



Photo by

The Army-wide awards program is dedicated to recognizing the best technology solutions for the Soldier. Nominations for the program were submitted from across the Army laboratory community. Nine of the 10 recipients are elements of the U.S. Army Research Development and Engineering Command.

The Army -- from active duty divisions to the Training and Doctrine Command to the Army's vice chief of staff -- chose the ten winning programs based upon their impact on Army capabilities (breadth of use and magnitude of improvement over existing systems), inventiveness, and potential benefit outside the Army.

Like previous years, there are no differentiating categories so that a variety of inventions could be recognized.

Each of the 10 selected teams will receive an award; the other nominated team members will receive certificates of participation.

The U.S. Army Greatest Inventions Program selections are:

* Damage Control Resuscitation of Severely Injured Soldiers
U.S. Army Institute of Surgical Research

Since its fielding in January 2007, Damage Control Resuscitation - the new standard of care for the most severely injured Soldiers requiring massive transfusions - has dramatically improved survivability. By limiting fluid resuscitation, the patient's blood pressure is stabilized to minimize renewed bleeding from recently formed blood clots. Blood volume is restored by using plasma as the primary resuscitation fluid along with packed red blood cells. The magnitude of improvement has been likened to the improvement after the introduction of antibiotics to medical care.

* Unmanned Aircraft System Shadow 200 Communications Relay System
U.S. Army Aviation and Missile Research, Development and Engineering Center

The CRS enhances "two-way" communications when operating beyond the normal operating limits of standard single-channel ground and system radios. Enhancements include improved situational awareness, call-for-fire capability throughout theater, and "imminent danger" communication to Soldiers as seen on video by ground station operators. Successful CRS configuration deployments include: boom mounted Advanced System Improvement Program (ASIP) radio CRS and wingtip extension handheld PRC-152 radios.

* Reconnaissance Vehicle System

U.S. Army Aviation and Missile Research, Development and Engineering Center

The RECCE Vehicle system combines explosive device detection, defeat, and interrogation capabilities onto a single integrated platform. It increases the safety of Soldiers performing route clearance by enabling them to accurately observe and engage threats from greater distances. Combining the Combat Engineers' skills with the RECCE system's unique collection of capabilities has led to tremendous route clearance success.

* Objective Gunner Protection Kit

U.S. Army Armament Research, Development and Engineering Center

The Objective Gunner Protection Kit provides a common force protection system capable of simple integration onto multiple vehicle platforms. Its integrated turret is mounted onto tactical and armored vehicles for increased Force Protection from explosive device fragmentation and enemy small arms fire. The 360° ballistic protection allows visibility for situational awareness without compromising system effectiveness, reliability, and lethality. The unique asymmetric geometry enables proper engagement of the primary weapon. More than 8,000 kits were fielded in CY07.

* XM982 Excalibur Precision Guided Extended Range Artillery Projectile

U.S. Army Armament Research, Development and Engineering Center

Excalibur, the world's first 24/7 precision-strike capability for Field Artillery, ushered in the 21st century for cannon artillery. It provides precision guided, extended range capability. Precision guidance and revolutionary accuracy (compared to all conventional artillery projectiles) is achieved through an automatic update of the navigation system. Along with increased survivability, Excalibur provides the Army Warfighter with unmatched precision and lethality for artillery projectiles critical to urban warfare where the risk of collateral damage is extremely high.

* M110 7.62mm Semi-Automatic Sniper System

U.S. Army Armament Research, Development and Engineering Center

The M110 Semi-Automatic Sniper System (SASS) delivers precision, rapid fire on targets and enables execution of operational missions not possible using the current weapon system. High capacity, ammo configurable, quick change magazines enable suppressed, increased rate of fire precision lethality against personnel targets and light materiel targets. This capability allows for more rapid and focused engagements on several targets with multiple follow-on shots. The SASS is the first U.S. Army weapon system that integrates a quick attach/detach sound suppressor to aid with Warfighter survivability.

* Picatinny Blast Shield for Light Armored Vehicle

U.S. Army Armament Research, Development and Engineering Center

The Picatinny Blast Shield (PBS) system is a modular protective solution that protects vehicles commanders from small arms fire and fragmentation resulting from explosive devices. The PBS system mounts onto armored vehicles to provide front, side and rear protection. Transparent armor is utilized to provide complete weapons integration and full visibility through the shield without compromising protection. The PBS system was designed, developed and fielded in response to a USMC Light Armored Vehicle Operational Advisory Group requirement for survivability upgrades.

* Self Protective Adaptive Roller Kit

U.S. Army Tank Automotive Research, Development and Engineering Center

The Self Protective Adaptive Roller Kit (SPARK) provides additional standoff protection to vehicle and crew against pressure-activated or victim operated explosive devices. SPARK can be installed either in various configurations for greater coverage.

* HMMWV Egress Assistance Trainer

U.S. Army Tank Automotive Research, Development and Engineering Center

The HMMWV Egress Assistance Trainer (HEAT) teaches Soldiers how to react in a vehicle rollover situation by properly and safely training them on how to open safety restraints and exit a HMMWV from a variety of rotated positions. The training also helps Soldiers overcome the natural fear and panic associated with rollover incidents. Training with the HEAT, now the U.S. Army standard for egress training, is required for all Soldiers. Survival rate after a rollover incident has increased since this training requirement was instituted.

* Improvised Explosive Device Interrogation Arm

U.S. Army Communications-Electronics Research, Development and Engineering Center
Completely operational from inside mine protected vehicles, the Interrogation Arm provides a standoff detection capability and can detect metal, free lift and pry lift objects, and perform shallow digging. A camera also allows the operator to view objects at the end of the arm. Soldiers receive extensive training on how to operate the arm. Interrogation of suspect threats using the arm provides a higher level of survivability for vehicle crews.