



# THE FUTURE IS NOW

**New Army equipment is at the cutting edge of technology, changing the battleground. American Soldiers are ready for the forefront. The enemy has nowhere to hide.**

By Angela Simental

Since its establishment in 2001, Program Executive Office Soldier has been dedicated to providing Soldiers the best equipment available. With a total of 12 program branches, PEO Soldier is led by a general officer and a command sergeant major. The different branches of PEO Soldier are constantly developing equipment that incorporates the latest technology to follow through with their mission to maintain a level of superiority in the equipment they develop and preserve their priority: to keep Soldiers safe on the battlefield. “Our mission is to enhance the Soldiers’ combat effectiveness, improve their survivability, while increasing their lethality,” said PEO Soldier’s Command Sgt. Maj. Bernard C. McPherson. “We want to ensure that our Soldiers have great quality of life through the equipment we issue.”

PEO Soldier closely synchronizes with the United States Army Materiel Command and Training Doctrine Command to get equipment through the processes of design, testing, procurement and finally fielding to Soldiers.

“The relationship between AMC and PEO Soldier is both professional and personal because we are taking care of Soldiers,” said AMC Command Sgt. Maj. Jeffrey J. Mellinger. “It is the efforts of PEO Soldier to equip and arm warriors that gives the foundation for the rest of the materiel enterprise.”

In order to continue delivering the best equipment, big changes were made in 2009 with the restructuring of PEO Soldier in its three main areas.

First, several of its project management offices will narrow their focus into a smaller range of products to intensify oversight and maintain quality.

Second, it will integrate the Rapid Fielding Initiative, which also began in 2001, because it “streamlines the process for distributing equipment to deploying units and ensures that all Soldiers are outfitted with the most advanced individual and unit equipment available,” as outlined in the RFI mission statement. “We are continuing to improve the equipment, putting safety at the forefront,” McPherson said.

Third, PEO Soldier is enhancing its emphasis on Soldier as a System concept, which “allows for a direct response to both

Soldier needs and developmental innovation, keeping equipment up with the operational needs and technological advances. The Army has an agency [PEO Soldier] it can rely on to develop safe equipment and get it to the Soldiers as fast as possible,” he added.

“I have spoken to Soldiers who fought maybe two years ago, and they are amazed at the fast changes and improvements we have on the equipment,” he said. “We are doing everything humanly possible to give our Soldiers the best equipment as fast as we can.”



### Challenges and Accomplishments

Constantly improving and developing equipment has also created challenges for PEO Soldier.

“The biggest challenge right now is sustainment,” McPherson said. “We are pushing between 450 and 463 products. We push equipment out so fast that we need to make sure there is a mechanism in place to sustain the equipment and replace the one damaged in theater.”

PEO Soldier has also been focusing on lightening the load Soldiers carry into combat.

“Because of the fight in Afghanistan right now, Soldiers are dismounted, facing higher elevations as opposed to Iraq,” McPherson said. “We have to lighten the Soldier’s load and are

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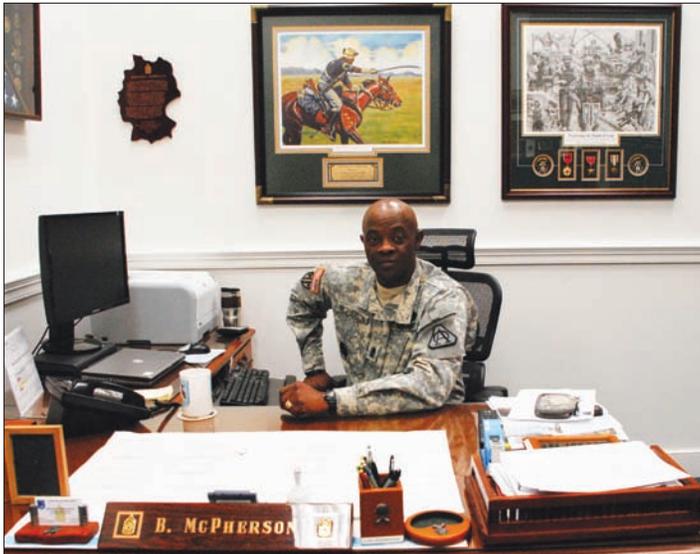


Photo by Angela Simental

Command Sgt. Major Bernard C. McPherson, responsible for overseeing the process of delivering equipment to Soldiers, sits in his office at the PEO Soldier headquarters in Fort Belvoir, Va.

developing lighter equipment without losing capability.”

Reducing load weight is an important factor when developing equipment because lighter equipment not only helps Soldiers feel comfortable and safe in combat, but it also enhances combat effectiveness by providing Soldiers more mobility and a higher chance of survival, McPherson said.

“We are creating equipment right now that gives Soldiers the capability to adjust, while having the same amount of protection,” he added.

### Turning ideas into equipment

McPherson explained that equipment is conceived in theater with the help of Soldiers’ input and ideas. Commanders and leaders in the field initiate needs and requirements and forward them to TRADOC. TRADOC assesses these needs and sends them to the Department of the Army G3. Once the requirements are approved, PEO Soldier starts the materiel development process.

“We look at the parameters, performance, delivery and protection,” he said. “Cost is not a factor.”

PEO Soldier takes an integrated and synchronized approach to developing equipment, McPherson said.

“We have tightened relationships with Research, Development and Engineering Command, the office responsible for life cycle management of equipment, and industry while receiving support and funding from Congress and American taxpayers,” he said.

Equipment prototypes go through a series of rigorous tests. “Armor, ammunition, weaponry – we’ll take that product

and put it through what we call ‘limited-use testing,’ he said. “We’ll go back to the Soldiers, get a unit and have them test the equipment.”

After equipment is purchased from the industry, it goes through the fielding process, which requires, as McPherson said, more testing to make sure it adheres to protocol.

“It is for the safety of our Soldiers and reliability of the equipment. We want to make sure that the equipment is doing what the requirements outline,” he said about the importance of the fielding process.

### Giving feedback

PEO Soldier relies heavily on Soldiers’ feedback to detect problems or make improvements to a product, McPherson said. PEO Soldier, in conjunction with TRADOC, conducts pre-and post-combat surveys, participates in road shows where equipment is displayed and receives immediate and direct feedback from Soldiers and family members.

“[Families] understand we are putting their loved ones in safe equipment that will protect them and bring them back. They know we are taking care of Soldiers, making sure they have the best equipment possible,” McPherson said. “We go where we have to go to educate Soldiers on the equipment we are fielding.”

Another way McPherson receives direct feedback is from his peers, NCOs in Iraq and Afghanistan. Today, any Soldier can send their feedback from anywhere.

“We are especially taking advantage of the social media sites,” he added. PEO Soldier operates a blog and its Web site also provides a forum for feedback. Soldiers can also find PEO Soldier on Facebook, Twitter and Vimeo.

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### The role of NCOs in PEO Soldier

McPherson said he understands the importance of NCOs in the realm of Army materiel and described NCOs as the Soldiers’ advocate.

“Most of our NCOs have led Soldiers in the field and most deployed to Iraq and fought in Afghanistan; they bring the Soldiers’ ideas and feedback to materiel development. NCOs deal with Soldier issues as well as materiel issues because they are the eyes and ears in the field,” he said. “In every vehicle that rolls in theater, you have a noncommissioned officer – an NCO is in charge in the right, front seat. They insist on having the highest standards [on equipment] for their Soldiers.”

There are many pieces of equipment being developed, tested and fielded by PEO Soldier and its branches in an effort to deliver and equip Soldiers with the best, and most up-to-date equipment and technology making them more survivable and agile in their missions. 

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Photo courtesy of PEO Soldier



## NOWHERE TO HIDE

The XM25 Counter Defilade Target Engagement System is one of the most revolutionary weapons developed for the dismounted Soldier, said Lt. Col. Chris Lehner, product manager of Individual Weapons.

Although it is still in the research and development stage, *Time* magazine has named it one of the “50 Best Innovations of 2009,” and it has also been featured in CNN and *Popular Science* magazine.

Ranging in weight between 12 and 12.5 pounds, the XM25 is a semiautomatic weapon that fires “smart rounds,” which takes away the ability for the enemy to hide behind cover, whether it be a wall, trench, building or rock. Its target acquisition fire control mechanism programs 25 mm rounds so the Soldier can have better target precision, Lehner said. He also added that when the trigger is pulled, the fire control mechanism tells the round at what distance to explode in the instant before the hammer strikes the firing pin.

The XM25 allows Soldiers to engage the enemy with the fragmentation released from the rounds and even if they hide behind cover, they can still be hit, Lehner said. The weapon can accurately fire an explosive round at distances of up to 700 meters even at night or under harsh weather conditions because of its built-in thermal sight, he added.

The XM25 “features an arrangement of sights, sensors and lasers housed in a Target Acquisition Fire Control unit located at the top, an oversized magazine behind the trigger and a short barrel wrapped by a recoil dampening sleeve,” Lehner said.

Once all the approvals are in place, it is expected that in 2012 the Army will begin to purchase 12,500 XM25 systems, enough to issue one per infantry squad and Special Forces teams. The full fielding process for the XM25 is expected to be completed by 2014.

## OWNING THE NIGHT

The Enhanced Night Vision Goggle’s biggest contribution to the battlefield will be giving Soldiers more situational awareness in rural and urban areas.

The ENVG is a two-pound, helmet-mounted device made especially for the individual Soldier. It integrates image-intensification and infrared sensors for night operations under all weather conditions.

It also makes it easier for Soldiers to detect any threats under any lighting condition, including total darkness. For comfort, the eyepiece allows Soldiers to maintain a full view of the battlefield without having to adjust it, even if helmet moves.

The ENVG is easy to use with minimal adjustments. A Soldier can adjust the goggle to fit his or her vision. It presents a computer-like display that enhances vision, showing images in high resolution at short ranges.

The ENVG operates in three modes: Overlay, full thermal and outline.

The image intensification sensor amplifies ambient light, in a manner similar to the current generation of night vision goggles. The thermal sensor shows outlines of heat, highlighting people, vehicles, and even the trails left by targets. Together, these technologies allow Soldiers to see more and accurately identify targets.

In 2009, ENVG was fielded with positive results to units supporting Operation Enduring Freedom and Operation Iraqi Freedom.



Photos courtesy of PEO Soldier



Photo courtesy of PEO Soldier

## DIGITIZING SOLDIERS

The Land Warrior system is the first of its kind. Designed for dismounted Soldiers, it provides networked communication and navigation technology to improve a Soldier's situational awareness, lethality and survivability, said Master Sgt. Marcus B. Griffith, senior enlisted advisor for Project Manager Soldier Warrior.

Land Warrior is a Soldier-worn computer system, connected to a digital radio, which transmits and receives data, he added.

The Land Warrior has an eyepiece, called the Helmet Mounted Display, which is like a computer screen.

To interact with the system, Land Warrior has a small, hand-held device called the Soldier Control Unit, which acts the like a computer mouse.

In addition, information can be shared through text messages, pictures and PDF documents.

Land Warrior also incorporates a global positioning system. Through a shared digital map, Soldiers can see their location along with the location of every Soldier using the system. Griffith explained that self-location is an important part of Land Warrior, especially when Soldiers travel through data less terrain. This safety method prevents Soldiers calling fire on their own forces, he said.

Developed in the late 90s, Land Warrior went through major design changes to reach its current configuration.

In 2007, the 4-9 Infantry tested Land Warrior in Iraq. Recently, the 5/2 Stryker brigade is using the Land Warrior system in Afghanistan with exceptional reviews, said Griffith.

## THE WATCHFUL EYE

Incorporating the latest digital technology, Project Manager Soldier Precision Targeting Devices developed the Lightweight Laser Designator Rangefinder with dismounted fire support teams and observers in mind.

This portable rangefinder helps Soldiers accurately locate targets and transmit information digitally to the Department of Defense and NATO to engage the enemy with laser-guided munitions.

The LLDR weighs only 35 pounds compared to its predecessor, the Ground Vehicular Laser Locator Designator, which weighed 140 pounds, and took four or five Soldiers to carry from one location to another.

The LLDR is battery-driven, which makes it perfect for 24-hour missions. It can be used with two different kinds of batteries, which can help the observer to determine its target at certain distances. Using a SINGARS battery instead of the BA-5699 batteries makes it easier to spot targets at a further distance.

The two most important components of the LLDR are the Target Locator Module and the Laser Designator Module.

The TLM includes a thermal imager, day camera, electronic display, digital magnetic compass and a laser rangefinder. These capabilities mean that the TLM can function in nearly any operating environment. The TLM can be used by itself to determine accurate target locations, for the first round hits with precision munitions or with the LDM for laser-guided munitions. The LDM is compatible with all joint forces and NATO targeting systems for laser-guided munitions.

The LLDR also includes global positioning and networked situational awareness systems, helping Soldiers avoid calling fire on their own forces.

Fielding will continue this year with 600 units being delivered to the field.



Photo courtesy of PEO Soldier



Photo by Angela Simental

## TOUGH ARMOR

Introduced in 2007, the Improved Outer Tactical Vest forms the core of the Interceptor Body Armor system, a modular system that consists of the armor vest, ballistic plates and other protective accessories such as throat, groin and upper and under arm protection.

A medium-sized IOTV with front, back, side ceramic plates with added accessories weighs a total of 30.1 pounds, three pounds less than its forerunner.

The IOTV carries the Enhanced Small Arms Protective Inserts plates and the Enhanced Side Ballistic Inserts, which protects against small-arm hits, including armor-piercing rounds.

Most recently, the Army has made 17 improvements to the IOTV, including extending sizes (11 in total), adding the quick release feature, which was added to make it easier for Soldiers to release the vest in an emergency.

It also includes back buckles, which can be used to adjust the vest to a Soldier's specific body shape. Also, depending on the mission, the IOTV can be worn in different configurations, using only the protective accessories necessary.

The Army now has an additional alternative, the Soldier Plate Carrier System, which weighs significantly less than the Interceptor Body Armor system and, like the IOTV, can be adapted to the mission. The SPCS provides less soft-armor coverage of the Soldier's body than the IOTV but carries the same hard-armor ballistic inserts in front, back and on the sides.

The result is that the SPCS weighs 21.8 pounds with front, back and side plates, 9.3 pounds less than the fully-equipped IOTV.

The SPCS also retains less heat. Fielding of the SPCS has begun for select units serving in Operation Enduring Freedom, under a contract the Army awarded in October 2009 to purchase 57,000 plate carriers. Fielding is expected to be complete in March 2010.

## BLENDING IN

The search for a new camouflage pattern for Soldiers deploying to Afghanistan started with 57 combinations, which resulted in six camouflage patterns that covered the three main terrains in Afghanistan: woodland, desert and mountainous regions.

The Army wanted something that was readily available and could be immediately provided to deploying Soldiers, said Lt. Col. Michael Sloane of Product Manager Soldier Clothing and Individual Equipment.

After testing the six selections, two passed the test: The Universal Camouflage Pattern- Delta and the MultiCam patterns, which integrate a fire resistant non-negotiable performance parameter, a capability the Army Combat Uniform also provides.

Furthering its research to provide the best camouflage, the Army conducted surveys and photo simulations to determine how the MultiCam or UCP-Delta camouflages blended into Afghanistan's environments, taking into account that the terrain is diverse and Soldiers often travel through multiple environments in a single mission.

The MultiCam and Delta patterns were fielded in fall 2009 during Operation Enduring Freedom. Two battalions receive one camouflage each along with body armor, helmet covers and rucksacks in addition to their standard Army Combat Uniform in the Universal Camouflage Pattern.

Sloane said feedback from the field indicated that the UCP- Delta, a variant of the currently-fielded Universal Camouflage Pattern, includes the coyote-brown color and was the one the most matched muddy areas in Afghanistan. The MultiCam pattern, on the other hand, which has already been used by Special Forces and operators in the field, worked better in greener areas, he added.

On Feb. 19, the Secretary of the Army, John McHugh, announced that the MultiCam pattern was selected as the camouflage for Afghanistan. Starting in the summer, deploying Soldiers will receive uniforms along with body armor, rucksacks and helmet covers in the MultiCam pattern.



Photo courtesy of PEO Soldier