

Virtual training puts the 'real' in realistic environment

U.S. Army

CAMP ATTERBURY JOINT MANEUVER TRAINING CENTER, Ind. (March 4, 2013) -- In a warehouse looking much like a laser tag game room, nine Soldiers gear up with flip down goggle mounts, sensors strapped to their arms and legs, and each carries a computer-enhanced weapon system. Just five years ago, this scenario may have only been seen in a video game. Today, virtual training environments are a reality.

The Dismounted Soldier Training System, or DSTS, and Engagement Skills Trainer 2000 are two virtual training tools that are quickly becoming the norm for Soldiers of the 157th Infantry Brigade, First Army Division East, in training deploying units at Camp Atterbury Joint Maneuver Training Center, Ind.

"One of the best parts of the DSTS is that we can create any operational environment, for our training in a virtual environment. It does not replace training, but it can add to it. We can bring the terrain of Afghanistan to the Soldier. It's hard to imagine a mountainous terrain in Indiana, but the DSTS can create it," said Sgt. 1st Class Aaron Hammond, Operations, 157th Infantry Brigade, First Army Division East.

Hammond and his team recently participated in a DSTS session to learn the capabilities offered at the Camp Atterbury Joint Maneuver Training Center virtual simulation centers. Geared up and ready to engage in a building entry exercise, the nine-man squad immediately encountered and reacted to enemy fire. With one member quickly disabled, the team had to quickly adjust tactics, techniques, and procedures, and continue their mission.

"Providing the most realistic and relevant training is the benchmark for success in First Army Division East when training Soldiers for worldwide deployments. Our job is to replicate situations in which the Soldier will face and to create an environment to rehearse repetitively at the squad or team level," said Capt. Marcus Long, 157th Infantry Brigade training officer.

Each Soldier stands on a four-foot diameter rubber pad. This pad is the center of a 10-foot by 10-foot training area for each squad member, and the pad ensures Soldiers remain in a specific area within the training suite. Soldiers can see and hear the virtual environment and also communicate with members of the squad using a helmet-mounted display with headphone / microphone set.

"A Soldier uses his body to perform maneuvers, such as walking or throwing a hand grenade, by physically making those actions. The sensors capture the Soldier's movements, and those movements are translated to control the Soldier's avatar within the simulation," explained Matthew Roell, DSTS operator.

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With a few computer commands, operators reset the virtual environment. This time the squad encounters enemy fire and a mortar attack. The squad calls for and receives close air support and successfully negotiates the building entry task.

"Each unit that comes through Camp Atterbury cannot receive close air support or call for artillery fire in live training, but we can create any simulated operational environment, desert or jungle, with any weapons system and any number of enemy forces with a few key strokes," said Brandon Roell, DSTS technician.

"This simulating training is the future of training. The DSTS allows a Soldier to wear the simulation instead of sitting inside of a simulator," said Matthew Roell, DSTS operator.

As with any exercise, the after-action review, or AAR, is a critical step in helping units identify strengths and weaknesses. The DSTS provides a complete digital playback of a scenario from several vantage points. The operator can switch the playback from a third person view or worldview. During the AAR, First Army Division East trainer/mentors use the different views to illustrate specific actions.

"Looking at each type of view, leaders can evaluate individual movement and actions, as well as the group as a whole. We cannot get this in-depth and multifaceted view during an actual live training exercise. We can even have the operator bookmark or tag a specific time so we can take a closer look during the AAR," said Long.

First Army Division East trainers also incorporate the Engagement Skills Trainer 2000, or EST 2000, into mobilization training.

During individual and sustainment marksmanship training, Soldiers fire weapons multiple times while the computer tracks their progress and provides multiple statistics. Soldier wanting to improve accuracy find this especially helpful. This simulation system allows Soldiers to gain familiarity with several types of weapons with minimal resources and no expenditure of ammunition.

"Nuances that cannot be seen by the eye affecting accuracy, such as the minute direction of pull on the trigger, are collected and analyzed by the trainer," said Hammond.

"It feels like firing a real M4. When firing on the zero range, the target is brought up on the screen to show the results. If the shot group is tight, the computer makes the adjustment to zero the weapon. If the shot group is not tight, it give us mentor/trainers the opportunity to observe the Soldier to make sure they are practicing good, basic marksmanship techniques," said Sgt. 1st Class Robert P. Braun, with the Operations Section, 157th Infantry Brigade.

Soldiers can progress to Squad/Fire Team Collective Tasks and Judgmental Use of Force scenarios to hone basic marksmanship skills. These two scenarios allow Soldiers to engage targets while working as a team. Once Soldiers gain proficiency,

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they progress to the actual live fire range.

Each unit must understand the different simulation capabilities and limitations before scheduling. For example, the DSTS cannot help with basic marksmanship techniques; it is designed to enhance squad and team tactics, while the EST 2000 can specifically aid in improving marksmanship.

"It's our job to train Soldiers at the lowest level. The DSTS and EST 2000 gives leaders and squads a chance to really look at their tactics, techniques and procedures in a safe, but realistic environment. Really, the number of scenarios the operators can create are unlimited," said Hammond.

Entering the realm of the virtual environment is no longer a futurist vision. With the many different simulations ranging from vehicle familiarization to fully immersive combat training scenarios, First Army Division East trainers ensure Soldiers are responsive and prepared for combatant commanders.

"Here at Camp Atterbury, we've only just scratched the surface of incorporating simulation trainers for deploying units. As we familiarize more with these systems, our training capabilities also improve," said Long.

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