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Military Training Technology

ONLINE EDITION

Training for the Ambush



Delivering supplies has never been so difficult. With roadside bombs and potential ambushes on every street, extensive convoy training is helping to keep warfighters alert and alive.

By Scott R. Gourley

"Soldiers fight as they are trained to fight. Once engaged in battle, the Soldiers of the 507th Maintenance Company fought hard. They fought the best they could until there was no longer a means to resist. They defeated ambushes, overcame hastily prepared enemy obstacles, defended one another, provided life-saving aid, and inflicted casualties on the enemy. The Soldiers of the 507th upheld the Code of Conduct and followed the Law of War."

-Report of the attack on the 507th Maintenance Company, 23 March 2003, An Nasiriyah, Iraq.

It is certainly a military truism that "soldiers fight as they are trained to fight" and the arrival of 21st century asymmetric warfare has introduced new challenges for that training. Among the new challenges being addressed by U.S. Army training planners is the need for training in convoy operations.

"Since February we have known, as a result of operations in Iraq, that right now about one-third of our deaths and casualties are coming during the conduct of convoy operations," explains Lieutenant Colonel Joseph Giunta, product manager for Ground Combat Tactical Trainers (GCTT) at the U.S. Army Program Executive Office for Simulation, Training and Instrumentation (PEO STRI). "So the field, the combatant commanders ... know that they've got a combat deficiency that they've got to train to. But today there is no defined training device that allows you to do that. They have live training, obviously. At places like Fort Sill and elsewhere they're doing live convoy training."

He added, "They are doing whatever they can in terms of looking at existing capability within their own organizations to train to this deficiency. That's what drove this process. When a warfighter has a deficiency that can't be met he's going to do whatever is required to meet it."

Live Convoy Training

Fort Sill, OK, was one of the first U.S. military installations to establish a “live” convoy-training program. Established in December 2003, the program is a three-day course that culminates in a live-fire operation on the fort’s west range.

“The reason the convoy range came up was from lessons learned in Iraq, with the convoys being hit over there,” observed Sergeant First Class Timothy Wayne, non-commissioned officer in charge of the training program. “So we took the lessons learned and started conducting training to prepare soldiers to go in that theater of operations. We have a three-stage training plan that goes through a classroom on the first day, then hands-on battle drills, then, on the third day, on the convoy live-fire range,” he said.

“When we go out there on day three, they receive a safety brief and then they go down and go through a live-fire exercise,” added Captain Boyd Sharp, officer in charge for the Convoy Operations Training at Fort Sill. Sharp leads the Fort Sill convoy training team, which consists of “90 percent combat veterans have been there between one and three times.”

Describing the value of live convoy training, Sharp explained, “With a live-fire exercise you’re actually putting bullets downrange in the attack area. There is a realism to it. The vehicle is bouncing. Everything you need you get for live enhanced training with simulations for threats you might actually see down range.

In addition to the use of smoke, artillery simulators and grenade simulators, the live-fire range includes several dozen silhouette targets spaced from 30 to 300 meters away from the convoy route to represent insurgents.

“They’re in the uniform that they’ll be wearing down range, the full battle rattle: helmet, LBE [load bearing equipment], body armor and firing live rounds,” Sharp said. “They’re getting the hot brass going down the collar of their flak vest, which is more realism, because when the bullets start going out of the vehicles that brass is going to bounce around in there. So they get the full effect of firing live rounds from the vehicle.”

Both Sharp and Wayne were quick to point out the flexible nature of their underlying convoy training program, noting that it is constantly evolving to the adaptive changes taking place in both Iraq and Afghanistan. Lessons learned are incorporated from both personal and formal sources, ranging from letters and e-mails from deployed warfighters to publications from the Center for Army Lessons Learned.

As of this writing, approximately 2,500 warfighters have gone through the Fort Sill convoy course.

Anticipating the Requirement

Shortly after the first group of soldiers underwent the live-training range at Fort Sill, Army training planners began to address the need for the expansion of convoy training into the virtual training environment.

As an example, Giunta points to a February 2004 start to PEO STRI’s development of a virtual convoy trainer.

“We started our process based on some guidance from Secretary [John R.] Bolton about the acquisition community needing to be more proactive in terms of trying to meet the needs of the Army,” he explained. “So we started an internal process in February, looking at what was out there that would be capable of meeting what we had identified as a potential requirement. We submitted an RFI [request for information] in the March timeframe and we asked all of industry—it was full and open—to come back and tell us what was currently available.

According to the early March 2004 RFI, titled Virtual Combat Convoy Trainer (VCCT), PEO STRI was

"soliciting information regarding the availability of virtual training systems to be utilized to train drivers and gunners of military vehicles to identify a potential ambush, how to identify improvised explosive devices (IEDs), how to avoid an ambush, how to return fire, maneuver and to react appropriately in the Contemporary Operating Environment (COE)."

"Recent combat operations have demonstrated the need for convoy combat training," the announcement continued. "Our soldiers are more vulnerable than what we expected, performing vehicular patrols and engaging in convoy operations ... The purpose of this RFI is to assess for the Army existing training device solutions or solutions that could be provided as training devices in three months to meet current known convoy operation training deficiencies."

"Obviously this was an urgent need," acknowledged Giunta. "So, [we wanted to know] what in the commercial marketplace did industry have that could meet a 30 to 60 to 90 day turnaround to give us a capability."

The RFI prompted 11 proposals from the industry base with a technology demonstration of those proposals conducted in Orlando, FL, April 5-9, 2004. The demonstrations were observed by a combined team representing the user community in the form of forces command, the requirements community in the form of Training and Doctrine Command and the materiel developer in the form of PEO STRI.

"We racked and stacked and considered all of the technologies," Giunta said, noting that considerations were based on goals identified in the RFI and not formal requirements.

"Based on that we determined that there were two technologies we needed to look at, that provided a value in terms of the goals," he said.

Urgent Need

In the meantime, the VCCT requirement anticipated by PEO STRI in February arrived in the form of an urgent operational need statement (ONS) submitted from Forces Command in support of the warfighters forward in Southwest Asia.

"That ONS went through the normal ONS process for urgent needs," Giunta said. "It went to the [Pentagon] and was presented at what we call the Army Strategic Planning Board [ASPB]."

He continued, "The ONS was presented to General [Richard] Cody, then the G-3, now the vice chief of staff [Army]. He chairs the ASPB process. That's where the J3 looks at urgent needs for the Army and makes programmatic decisions in terms of dollars and validation. He validated the VCCT ONS and directed us to go out and, at the time, and lease four mobile training suites."

The ONS was signed on May 30, 2004. However, rather than leasing training suites themselves, PEO STRI representatives ended up leasing a service for two mobile training suites from each of two different contractors. Both contractors are providing their training services under the same VCCT umbrella.

The service leases were awarded to Lockheed Martin Simulation Training and Support of Orlando, FL, and Raydon Corp. of Daytona Beach, FL.

Lockheed Martin, for example, describes its VCCT as "a three-level trainer system designed to improve soldiers' ability to identify and react to threats in an asymmetrical combat environment."

Developed in conjunction with subcontractor Fire Arms Training Systems (FATS), the Lockheed Martin VCCT "provides training for drivers, shooters, communicators and decision makers, encompassing all aspects of soldiering. VCCT requires soldiers to coordinate actions on a single vehicle, between multiple vehicles and with higher headquarters. This system incorporates precision weapons effects along with driving skills for a variety of vehicles."

According to Giunta, each of the four mobile VCCT suites is housed in transportable semi-trailers

and consists of four individual training devices that are networked.

"So picture this—four HMMWVs—at any location—networked," he said. "So those four HMMWVs are driving down the road, seeing the same terrain and the same battlefield. You can do it with one, two or three but it has the capability to do up to four devices.

"Today those devices are in the field and the services are currently ongoing," he noted. "The locations of devices are at Camp Shelby, MS; Fort Bragg, NC; and Fort Bliss, TX. However, they're mobile. They haven't been moved yet but they've been in the field ready for training for 30 to 60 days. Based on input from FORSCOM we will move those devices as required, where needed."

Giunta explained that the VCCTs were intended to provide only a limited capability since the urgent operational need statement did not represent a fully defined requirement.

"The Army is going to spend the next six to 12 months using this [VCCT] service to help better define the true requirement," he said. "And at the end of that process, which is being led by TRADOC and FORSCOM, they will either determine that a requirement is valid and produce a CDD [capabilities development document], or they will say that there's another way of doing this, in modifying an existing device, or they'll just say it isn't a requirement anymore. That's for the Army to determine."

Warrior Skills Trainer

One of the existing devices that has already been selectively modified for Army convoy training is the Engagement Skills Trainer (EST) 2000.

"The EST 2000 has been modified by several locations," Giunta said. "Fort Hood was the initial location that modified the EST 2000 and they now call it the Warrior Skills Trainer (WST). And that Warrior Skills Trainer is the combined capability of the EST 2000 and a constructive tool called JCATS [Joint Conflict and Tactical Simulation], which is a constructive model."

According to Giunta, the Fort Hood EST 2000/WST modification effort started in late 2003/early 2004, about the same time Fort Sill began its live convoy training and PEO STRI began its internal investigations leading to the RFI.

Developed by on-site III Corps and Alion Science and Technology staffs, the Fort Hood WST was reportedly used to train approximately 5,500 soldiers for convoy duty between November 2003 and July 2004. The system uses MetaVR real-time 3D visualization to simulate a "virtual Baghdad" environment.

According to a press release from MetaVR, "The Warrior Skills Trainer convoy simulator was, with collaborative development of the Commanders Work Station, accomplished by IDSI. The WST simulator is comprised of several simulation models that enable units to train for convoy-related tasks."

It goes on to describe the WST as consisting of "three simulators of High-Mobility Multipurpose Wheeled Vehicles in which trainees drive through a virtual representation of Baghdad and surrounding areas, in a manner similar to driving in a video game. Trainees can communicate with each other and with their facilitator in the simulation control area through headset communication networks."

Following its introduction at Fort Hood, the EST 2000-WST modification was duplicated by similar programs at several other Army installations.

"So the EST 2000/WST was started to meet a need that wasn't being met by anything else," Giunta said. The EST 2000 is my program [under the product manager for Ground Combat Tactical Trainers], but the Warrior Skills Trainer is not a formal Army program."

"However, know that, that same device was looked at as a technology solution in that RFI process,"

he added. "It was one of the 11. It was determined by the bigger group of TRADOC-FORSCOM-PEO STRI that wasn't the best device—the best technology to go after. That doesn't mean it's not a good thing. It doesn't mean it's not helping Fort Hood meet the need. Because we only have four mobile suites and we can't be everywhere within CONUS to help the units train."

Toward a Formal Requirement

Looking into early 2005, Giunta expects the Army will be in a position to make some sort of programmatic decision on convoy trainers in February.

"The reason that I use that timeframe is that in February of next year we believe the training effectiveness analysis will be back out from our use of these devices. That will drive whether it's a CDD or it's a modification of an existing CDD. Then it's up to the Army to determine, 'This is what we've learned from this capability. What do we do next?'"

Pointing to the VCCT, he added, "We have broken the paradigm here. We, as a mature developer, realized that the Army was struggling with a warfighter deficiency. And we put together our collective functional areas: engineering, contracting, acquisition and programmatic. We asked, 'How can we help?' Without a stated requirement and without dollars how do we help? We started working with TRADOC and with FORSCOM to put this process in place—this RFI—and then we were able to take it to the Army and show the value of the process. And in less than 90 days have a contract in place for training service to allow our soldiers to train in what we now know is a warfighter deficiency. Now soldiers, prior to going to Southwest Asia, have the ability to train on the Virtual Combat Convoy Trainer."

But whether it's VCCT or EST 2000/WST, Giunta was quick to praise the responsiveness of the training industry base.

"Without a doubt we could not have done this without the great efforts of industry," he said. Citing the VCCT example he added, "Not only have we reacted quickly but so has industry. We submitted that RFI on 8 March. They came back to us on 19 March with white papers. And on 5 April they were demonstrating their technologies here in Orlando. And some of them came from external to Florida to do that. So you're talking less than 30 days until they were showing us their capabilities. Find that somewhere else. That's a great effort on all parts."