

# Vital Force Protection System Fielded

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## Picatinny Public Affairs

Soldiers from Fort Drum, NY and Fort Carson, CO are among the Army's first to train on an advanced Picatinny-developed munition system that will enable units to protect forward operating bases from attack and deny contested terrain to enemy fighters.

Units trained and equipped with the Spider XM7 Network Command Munition Dispensing Set will also have greater military flexibility while eliminating the humanitarian concerns related to the anti-personnel land mines (APL) that Spider was designed to replace.

"The fielding of the Spider system, with its sensors, communications and munitions, can change the way Soldiers operate in an otherwise unpredictable battlefield," said Col. Steven F. Cummings, Project Manager Close Combat Systems (PM-CCS), part of Program Executive Office (PEO) Ammunition, headquartered here.

Spider was fielded to a brigade combat team of the 10<sup>th</sup> Mountain Division at Fort Drum, NY in January. Now, Soldiers at Fort Carson, CO are also learning how to emplace, monitor, operate and recover the Spider system from Picatinny trainers. Instructors from the U.S. Army Engineer School at Fort Leonard Wood, MO also teach Soldiers Spider's doctrine and tactics.

Spider was first fielded to three Brigade Combat teams in 2009-10 under an Urgent Materiel Release. Spider was granted a conditional materiel release in March. Continued fielding of Spider to Army units is scheduled through 2011 and beyond.

The Network Munitions Division of PM-CCS took charge of the mission of developing, qualifying and acquiring the network-controlled and self-destructing/self-neutralizing munition systems to replace APLs. This occurred after a February 2004 action by President George W. Bush to institute the National Landmine Policy, which requires the United States to end the use of non-self-destructing landmines by December 31, 2010.

"This fielding represents a significant milestone for the Spider program in complying with National Landmine Policy, as well as in the development of sophisticated network technologies that provide increased situational awareness and positive munition control," Cummings added.

## UNIQUE SYSTEM CAPABILITIES

Spider gives warfighters enhanced situational and tactical flexibility in the field, according to Mr. Ken Heider, Spider Project Officer for PM-CCS. It can be used for a range of missions, including force protection, battlefield shaping and to delay or deter enemy forces.

Spider warns when the enemy approaches on foot, disrupts infiltrations and can enhance the effects of existing weapons. Spider can also restrict enemy use of critical routes, thereby reducing civilian

casualties and the exposure of personnel to hostile fire. For greater flexibility, Spider can be configured with lethal or non-lethal munitions.

Spider's capabilities are a stark departure from the humanitarian risks posed by traditional APLs, which have remained in place after hostilities or after warring factions have departed, thereby endangering non-combatants.

The Soldier's ability to decide whether or not to detonate the munitions is Spider's unique feature called Man-In-The-Loop (MITL). By comparison, an APL with a tripped line would simply detonate.

If the MITL does not communicate with an active munitions field for 48 hours, the Spider Munition Control Unit (MCU) will "sterilize," another unique capability and military term that means the MCU will no longer function, said New Equipment Trainer Robert Christianson.

The operator can also place the munitions field into a "safe mode" to allow safe passage of friendly forces. The munitions can be easily gathered for redeployment. "Once the munitions field has been 'safed,' all assets can be recovered for later use," said Christianson.

"As a MITL system, Spider revolves around the warfighter," said Heider. "Throughout our research and development, our team has kept the warfighter's needs and protection as the guiding principal for the development of the system."

According to a troop commander who has the Spider system employed at one location, "We have incorporated the system effectively into the defensive plan. The system has not been set off but it still serves as a notable deterrent in a high-risk area."

#### TRAINING SOLDIERS TO RUN THE SPIDER NETWORK

Training to emplace, monitor, operate and recover Spider takes 40 hours and consists of 14 lessons, usually over five days, according to Christianson. To qualify as an operator, Soldiers must complete all course work, participate in practical exercises and pass a written test.

The training is largely hands on, often with Soldiers using training software on a Remote Control Unit (RCU) that replicates actual operations.

"The Soldier gets an iconic view of the field he monitors," said Christianson, describing what the Soldier sees on the RCU in training and in actual use. "The training software operates just like the real thing. It's just not sending out a signal that would initiate the munitions."

A portion of the training teaches Soldiers to establish communications with all emplaced field elements and continuously monitor the status of the munition field. The system notifies the operator when communication links are down, batteries are low, or when attempts to tamper with field elements are detected.

Soldiers also train on what to do when personnel enter the monitored area. "The Soldiers observe, determine friend or foe and based on the rules of engagement, fire or not," Christianson said.

In a classroom here, Christianson demonstrated the training software application by setting up a virtual network and responding to a simulated attack by a force of attackers.

Similar training software is also embedded in the RCUs that are used in combat. "Any time Soldiers want to practice their skills in responding to alarms, all they have to do is start up the training software," said Christianson.

The Spider New Equipment Training Team from the Armament Research Development and Engineering Center (ARDEC) here supported the urgent operational need by training Soldiers in the Operation Enduring Freedom Theater of operations.