

## ARDEC Provides Glimpse of Possible Future Warfare

PICATINNY, N.J. -- The Armament Research, Development and Engineering Center here and Army Special Operations Command jointly hosted a demonstration of modular payload systems on robotic platforms from July 14-17 at Avon Park Bombing Range, Fla.

ARDEC's contribution to this demonstration consisted of modular armament payloads including the M202, 40mm grenade launcher and telepresent rapid aiming and pointing system -- all of which were mounted individually on a Talon robot.



Five non-commissioned officers from ARDEC's Explosive Ordnance Disposal Unit participated in the demonstration and highlighted the capabilities of armed, unmanned ground vehicles in tactical operations.

The soldiers accomplished the goal of this technology demonstration, which was to show the operational utility of arming robots and to generate user interest in the concept of armed robots on the battlefield. The robot platforms demonstrated were the Talon robot developed by Foster-Miller Inc. This robot was a logical choice since it is already in service with joint service EOD units and soldiers are experienced with its operation.

Additionally, the Talon robot has an articulating arm that facilitates attaching and aiming weapons. The robots were integrated with one of three armament systems: an M202 Light-Anti-tank Weapon (four 66mm rockets), a 6 barrel 40mm grenade launcher, or a small arms weapon mounted on the TRAP) system produced by Precision Remotes.

While many people are fearful that armed robots will run amok on the battlefield, this was not an issue for the demonstration. The robots employ a "man in the loop" where they are always under director control of a soldier.

The soldier issues commands to the robot and weapons through a operator control unit. Commands to rocket and grenade launchers are communicated through a newly developed remote firing and control system. The RFACS allows a single soldier to control up to five separate firing systems using a 40-bit encryption security system.

Adding to the overall safety of the system, Picatinny engineers completed a variety of tests on the system including software operation, electromagnetic effects and shock and vibration.

The demonstration started with a Talon robot driving over anti-personnel land mines to place an explosive charge on an anti-tank mine, followed by a live fire of all three armament systems engaging targets out to 450 meters in single fire and automatic fire modes.

Visitors to the demo watched the live fire events and then received detailed briefings on the operation of the systems.

The EOD soldiers learned much about the performance of the system and identified a number of potential improvements to make the system even more lethal.