


TARDEC Helps to Keep EOD Soldiers Safe

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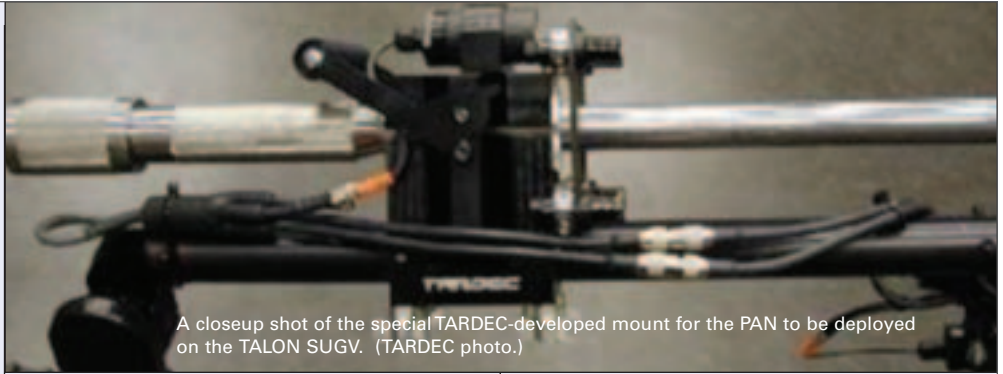
Army guidance is clear: “unexploded ordnance is a threat of which every soldier should be aware,” but for Explosive Ordnance Disposal (EOD) units, coming in contact with this deadly foe is just another day in the office. Researchers at the U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC) are striving to make EOD technicians safer and less stressed by giving them a system to defuse munitions from a safe standoff location. TARDEC, working with industry partner Foster-Miller Inc., of Waltham, MA, has developed a revolutionary mounting system that will allow EOD technicians to use the TALON™ Small Unmanned Ground Vehicle to defuse explosive ordnance.



The TALON Small Unmanned Ground Vehicle (SUGV) is being used by EOD units to defuse explosive ordnance. Equipped with special mounting brackets, the SUGV hosts the Percussion Actuated Nonelectric (PAN) disruptor allowing Soldiers to defuse bombs and unexploded munitions from a safe standoff distance. (U.S. Army photo by Mike Roddin.)

Currently, TARDEC has a Small Business Innovation Research contract in place with Foster-Miller to develop mission payloads for Small Unmanned Ground Vehicles (SUGVs). According to TARDEC project lead David Kowacheck, “Seeing that most EOD Soldiers are familiar with and use the TALON platform in a variety of dangerous circumstances, it was natural for our team to take a look at how the TALON could make these Soldiers’ jobs a bit safer. We soon found out that units did not have a way to mount their most common tool — the Percussion Actuated Nonelectric (PAN) disruptor to the TALON.”

Current procedures call for the EOD Soldier to wear a heavy, hot bomb suit and then physically approach the device to deactivate it with a tripod-mounted PAN disruptor. Developed by Sandia National Laboratories, the



A closeup shot of the special TARDEC-developed mount for the PAN to be deployed on the TALON SUGV. (TARDEC photo.)

PAN disruptor is possibly the most common EOD tool used to render explosive devices safe. The PAN precisely interrupts a bomb’s internal gadgetry (fuse) before the bomb can detonate. However, in combat operations, the device is often booby-trapped, remotely controlled or watched by an enemy sniper. Kowacheck states, “One of the chief reasons that the PAN could not be deployed on an unmanned ground platform to keep Soldiers at a remote distance was the fact that no mount bracket existed that would withstand

the disruptor’s powerful recoil. The TARDEC/Foster-Miller team took on that challenge.”

Within a matter of months, the team developed a prototype system that allowed the PAN to be employed on the TALON. The improved method features an inexpensive recoil-mitigating mount for the PAN disruptor that allows the EOD technician to use the robot to evaluate the explosive device and orient the PAN while remaining at a safe distance for the entire procedure. The shock-reducing mount mitigates the recoil from the disrupter, preventing undue robot life-cycle damage.

Currently, this system has successfully undergone limited safety testing at the Naval Systems Warfare Center — Indian Head Division and more than 15 mounts have been sent to our EOD Soldiers in theater for testing and evaluation. Benefits will include increased Soldier survivability, quicker opening of threatened roadways and less threat to civilian bystanders. It also offers a low-cost solution, at under \$3,000 per mount.

Soldiers are enthusiastic about employing this potentially life-saving technology. A note from one of our EOD commanders affirms their appreciation for these systems, “I thank you for the great assistance you guys are lending us. Losing one of our own drives home the necessity of using that TALON



TARDEC developed its Omni-Directional Inspection System (ODIS) with input from soldiers in the field. (U.S. Army photo.)



TARDEC's ODIS allows Soldiers to inspect vehicles from a standoff location. (U.S. Army photo.)

first. That little guy saved our butts on many occasions.”

Kowachek agrees, “Once Soldiers bring their TALONs in for routine maintenance by in-theater Foster-Miller technicians, they will be given a PAN mount to use when returning to the field. So, we end up with EOD Soldiers able to control an SUGV from a safe location during the entire EOD process. Being able to quickly deploy these life-saving

mounts has been a true industry-government partnership for the Soldier.”

MONICA KAPSO serves as the Editor of U.S. Army Research, Development and Engineering Command/TARDEC's *TARDEC Quality Report*.

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