

New battery technology extends life of bomb disposal robots

June 5 2009



The Office of Naval Research TechSolutions department hosted a demo and final review of the recently completed Talon EOD robot Battery Replacement project. The battery replacement project was prompted by a request from the II MEF, 8th Engineering Battalion and resulted in a solution provided by Penn State University's Applied Research Laboratory that utilizes standard military batteries resulting in reduced cost, increased run time, and elimination of a custom battery charger. TechSolutions is an innovative, transformational business process created by the Chief of Naval Research and focused solely on rapidly delivering needed technology to the Fleet/Force. Credit: US Navy photo by John F. Williams

Safe removal of roadside bombs and improvised explosive devices (IEDs) is critical in hostile environments. Explosive Ordnance Disposal (EOD) crews often rely on remotely operated robots to disarm explosives - and the Office of Naval Research has just made their job a little easier.

In just seven months, the ONR-sponsored team at Penn State University Advanced Research Laboratory devised, designed and delivered an innovative solution to extend the [battery life](#) of remotely powered Talon robots by 23 percent. The extended battery life affords the Talon with more time to diffuse complex explosives.

At a demonstration held at ONR last week, the Talon Battery Module (TBM) eliminates the need for a special purpose custom battery and its charger. It incorporates a bank of four-to-six standard BB-2590 batteries that can be hot-swapped without rebooting the robot.

TBM also features a significantly improved battery health monitoring system. It capitalizes on standard military batteries that offer a cost savings of roughly 60 percent.

The technology has proven so successful that the Marine Corps plans to outfit all of its Talon robots with the new TBM, and the Army and the joint IED office have ordered more than 1,300 to replace all battery units currently in the field.

In 2008, the Talon robot was a small-tracked, all-weather vehicle that was being used in a variety of terrains. Gunnery Sgt. Steven Sheals while at Marine Corps Base EOD, Camp Lejeune, expressed the need for a long-lasting alternative to the large, expensive custom [battery](#) provided with the Talon robot.

Sheals elevated the problem with ONR's TechSolutions branch where Master Chief Petty Officer Stephen French and Stephanie Everett, decided to take on the issue.

"The TBM solution has become the new DoD standard for the Talon [robot](#) and all EOD robots in its class," says French. "It also showcases how we work to provide rapid solutions that directly benefit the work-

life of Sailors and Marines. Typically, most of our requests come from the enlisted community who often are closest to the action and understand the technical issues involved."

ONR TechSolutions is an innovative, transformational business process which affords Sailors and Marines at the ground level with a means for communicating technology needs directly with the science and technology community. TechSolutions is focused on rapid prototyping that deliver 50% percent solutions for the Fleet/Force.

"Our job is to connect the science and technology community with the warfighter and the acquisition community," says Everett.

"In this case, we provided the initial S&T funding to develop the proof of concept, and the Naval Explosive Ordnance Disposal Technology Division took the successful prototype into production as an acquisition program."

Source: Office of Naval Research

Citation: New battery technology extends life of bomb disposal robots (2009, June 5) retrieved 21 September 2024 from <https://phys.org/news/2009-06-battery-technology-life-disposal-robots.html>

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