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Picatinny 'rolls out' new version of SPARK IED-defeat product

Seemingly simple solution saving lives in theater

PICATINNY ARSENAL, N.J. - This year troops in Iraq and Afghanistan received improved technology to help them combat one of the greatest threats to Soldiers in theater.

Improvised explosive devices, or IEDs, have been responsible for approximately 40 percent of all U.S. casualties in Operation Iraqi Freedom, according to Lt. Col. Karl Borjes, Product Manager for Improvised Explosive Device Defeat/Protect Force.



To help reduce this danger, Borjes' office oversees technology programs, such as the Self-Protection Adaptive Roller Kit, or SPARK, which provides Soldiers products to mitigate and prevent effects of IED strikes.

Originally fielded to Iraq in March 2007, the SPARK product consists of roller banks that attach to the front of a vehicle, explained Borjes. They roll ahead of the vehicle to clear the road of IEDs, which are commonly buried beneath roads.

While SPARK may seem like a simple solution, the product has proved to be a valued asset. Borjes said since the product's fielding, SPARKs have been involved in more than 115 IED detonations and have saved significant equipment. But most important is that the product has saved Soldier's lives.

"We've documented many IEDs detonated by SPARKs, leading to many Soldiers saved by this program," said Borjes, whose office tracks every SPARK incident.

Three route-clearance patrol members of 2nd Battalion, 2nd Regiment, 3rd Brigade Combat Team, 1st Infantry Division - known as 2-2 Infantry - are some of the Soldiers who were kept out of harm's way by the SPARK.

While on a route-clearance patrol in the Kandahar Province of Afghanistan in February, Staff Sgt. Antron Myers, Sgt. Michael Kopchak and Spc. Jesus Duran were the first service members in Afghanistan to encounter an IED with the recently

fielded Operation Enduring Freedom SPARK rollers.

Route-clearance patrols are considered the "tip of the spear" because they have the dangerous job of clearing convoy routes so other Soldiers can have freedom of movement, explained Borjes.

"They go out and find the (IEDs), and clear (the route) so that other folks with different missions can go from point A to point B to do their mission," he explained.

During this particular clearance, the three Soldiers were riding in a Mine Resistant Ambush Protected, or MRAP, vehicle with a SPARK attached when the rollers drove over an IED so large that it destroyed the entire SPARK product and scattered its pieces across the desert.

While the SPARK was rendered unusable, none of the Soldiers was injured, nor was any damage sustained to the MRAP vehicle.

Kopchak, the gunner who was sitting on top of the vehicle, said he did not receive even a minor injury. "But I'm sure I would have sustained serious injuries (had the SPARK not been attached)."

"When we got hit, our (communications) went down for a second, but as soon as we came to, we were able to drive out of the kill zone immediately. The vehicle wasn't damaged at all," said Duran, who was driving the MRAP at the time. "We were able to get back in the vehicle and get moving in a matter of minutes after recovering the pieces to the roller."

And being able to drive away from an IED hit is crucial to saving lives, because a stopped vehicle requires other Soldiers to come and assist, potentially exposing other Soldiers to harm, explained Myers.

Myers said that immediately after the incident there were no insurgents waiting to attack the stalled vehicle. However, he explained that was likely because "the size of the IED probably would have been enough by itself...It was designed to destroy whatever hit it."

He explained that IEDs are the main threat in the area, although the frequency of IED discoveries vary. "We could find anywhere from one a day to five, or one a week to as many as 15 - it just depends on how the insurgents have placed them."

So far, the PM IED Defeat/Protect Force program office has 26 documented IED strikes to the rollers in Afghanistan.

"All of us agreed that same evening that we were pro-(IED) roller," Myers said about his run-in with the IED. "We're very confident in what that (IED) roller does and what it's capable of protecting - and that's our lives. If we could get more of them, we'd love it."

The SPARK is a commercial-off-the-shelf item from a United Kingdom engineering company, Pearson Engineering Limited. The U.S. military bought the items and developed vehicle interfaces that allow the product to integrate onto an array of military tactical vehicles, explained SPARK project officer Robert Trifiletti Jr.

The improved SPARK, which was fielded to Afghanistan in January and Iraq in March, includes an additional third roller bank. Furthermore, the SPARK has been

improved for the Afghanistan terrain by allowing the driver to control the roller banks.

The upgrades stem from Soldier-feedback from the battle zones. Even though the latest SPARKs were only recently fielded, improvements are already in the works based on user-feedback, such as installing additional lights for improved visibility and brakes for the severe terrain of Afghanistan.

Borjes said he thinks the program has been successful because his team visits Soldiers in the field for feedback in order to "bring it back to the office and engineer it into the next procurement."

Besides its effectiveness, Trifiletti said, the SPARK is very resilient and has been known to withstand multiple IED blasts before being rendered unusable.

"The popularity of the product and its capability in theater is well-known and well-liked," explained Trifiletti, adding that Soldiers even voted the SPARK a top-10 Army invention in 2007. Trifiletti said his program often receives multiple inquiries from Soldiers each month asking how they can get the product for their vehicles.

The SPARK is currently compatible with nearly all military wheeled and tactical vehicles, including all MRAP variations, up-armored Humvees and five-ton trucks.

Additionally he noted they have even been used on Strykers and Bradley Fighting Vehicles.

PM IED Defeat/Protect Force was stood up in 2007 to stream-line all the IED-defeat products under a single program manager. The program oversees the life-cycle management of IED defeat products in theater.