Stryker Brigade in Iraq Will Protect Bases With Remote-Controlled Mines

The Army Stryker brigade now fighting in Iraq will be first in line to receive a new radio-frequency kit that allows soldiers to detonate mines from several kilometers away.

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The technology, called “Matrix,” essentially turns old-fashioned mines into standoff munitions. It was developed by the Army’s Picatinny Arsenal, in New Jersey, to meet growing base-security needs in Iraq. “Matrix allows them to cover their flanks and protect their base of operations with fewer soldiers,” said Maj. Joe Hitt, the project lead.

Matrix consists of three components: a touch-screen laptop, a radio transmitter and a munitions-control assembly that attaches to a Claymore antipersonnel mine. When detonated, the Claymore splits out steel balls out in a fan-shaped pattern, with a lethal radius of about 50 meters.

While Hitt declined to specify the exact range of the radio signal, he noted that, “Matrix allows hundreds of Claymores and non-lethal Claymores to be controlled by a single laptop at extended ranges. By touch-screen command, the operator can initiate any combination of effects at standoff ranges instantaneously.

Tactics for using Matrix were developed by the Army Engineering School. The devices will primarily be used for fixed-site security at forward operating bases. “Layers of non-lethal followed by layers of lethal is one example,” said Hitt. The Stryker brigade will get 25 systems by May, he added.

Matrix has been certified only for the M18 Claymore and the M5 non-lethal Claymore, which is filled with small plastic balls.

The Army’s fast-response acquisition agency—the Rapid Equipping Force—will sponsor a demonstration on how Matrix gives soldiers the option of using different responses depending on the situation. The technology potentially could be tested with portable vehicle arresting barriers or with a vehicle lightweight arresting device called VLAD—a spiked net that punctures tires and wraps around vehicle axles.

Equally important, officials noted, Matrix would seem to have an intriguing potential to work with a variety of weapons. The munitions control assembly weighs about 10 pounds, and it can be attached to any electrically fired munition.

But for now, Matrix is only a stopgap. “Matrix will deploy to theater [in Iraq] under an urgent material release with a specific time limit,” Hitt said. “We expect Matrix to be brought back once the release expires. Matrix is an interim, urgent response solution” until a new system now in development, known as Spider, is fielded in 2010.

Picatinny developed Matrix in short order, with the requirement arriving in August, funding being redirected to it in October and development completed in December.

Engineers employed the same computers and munition control assemblies that already had been developed for Spider. Hitt said. Matrix does use a different off-the-shelf radio as well as legacy Claymores, while Spider will have unique munitions. Matrix production will begin in March.

Officials, meanwhile, expect that Matrix will generate controversy and criticism from arms-control groups that oppose the use of antipersonnel landmines. Mark Hiznay, a senior researcher with Human Rights Watch, said Matrix is “maybe the beginning of a gray area.”

The 1999 Ottawa Mine Ban Treaty prohibits antipersonnel mines that are detonated by the target stepping on them, including Claymores activated by tripwire. While the United States has refused to sign the treaty, the Bush administration has agreed to ban mines that lack a self-destruct mechanism and cannot be located by mine detectors.

The concern is that systems such as Matrix can be detonated at long range, when the operator cannot positively identify the target as a combatant. “How does the operator differentiate between an armed insurgent and an innocent civilian before giving the command to fire the munition?” Hiznay asked. “A blip on a screen without visual confirmation is insufficient in the way the majority of states and I understand international law.”

But Hitt said this will not be an issue. “The soldier must visually identify the target before use. This is an absolute must.”


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