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Precision technology helps combat troops pinpoint enemy

Forces fighting in highly populated areas can direct airstrikes and avoid civilians

By Tom Vanden Brook
USA TODAY

WASHINGTON — U.S. troops and pilots in Iraq and Afghanistan share live video feeds from the battlefield to call in precise airstrikes, technology that barely existed a few years ago but now directs nine of 10 bombs and missiles dropped.

It's possible, military officers say, for troops to call in strikes less than the length of a football field from their positions compared with 2,000 yards two years ago. That's needed more than ever as troops fight insurgents in tightly packed urban areas.

The technology also can limit injuries to civilians and damage to sensitive sites such as mosques. This helps the military avoid angering the people it's trying to win over.

Forward air controllers — troops who call in airstrikes — can direct a pilot to a target in less than a minute. It used to take them 45 minutes to verbally direct a pilot to an enemy position, said Air Force Lt. Col. Greg Harbin, a forward air controller and former pilot who's used the Remote Operated Video Enhanced Receiver (ROVER) in combat.

"It's the most fundamental revolution

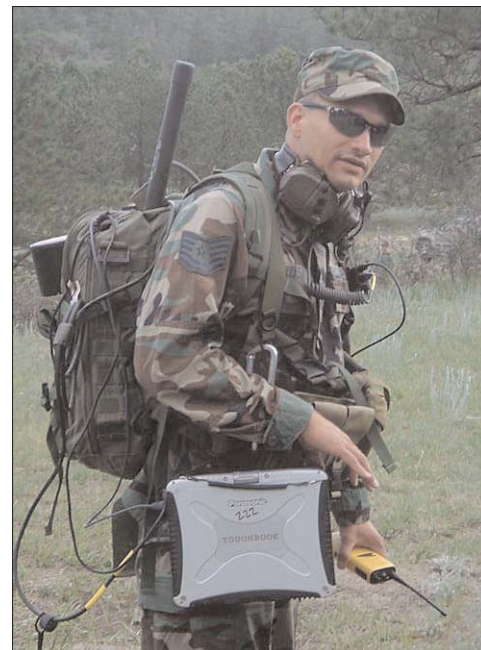
in warfare since radio," Harbin said. "The pilot and controller see the same thing. A picture's worth a thousand words. In this case, it might be a million."

Precise images captured by sensors aboard a fighter jet or an unmanned plane such as the Predator are instantly relayed to troops on the ground who receive them with an antenna and laptop that can be carried in a backpack. Troops can highlight a target on the laptop screen, allowing either the aircraft's crew or the unmanned plane to lock in on the target and hit it with either a bomb or a missile.

The system's use has proliferated. At the start of the Iraq war, there were only enough of the early versions of the system to be used by special operations forces. Now, virtually every jet in the sky over Iraq has the ability to share its video, and troops in all services have about 800 receivers, Harbin said. Australian, British and Canadian forces are buying the units, which cost about \$32,000 apiece if bought 100 at a time.

"Historically, close air support has been the art of talking the pilot on to the target," said John Pike, a military analyst with GlobalSecurity. "That isn't easy."

ROVER also allows the use of smaller bombs. Pike said the Air Force's new GBU-39, a 250-pound precision bomb, can be used to destroy a building rather than a neighborhood. The



U.S. Air Force

"Revolution in warfare": Tech Sgt. Travis Crosby carries a Remote Operated Video Enhanced Receiver, which allows servicemembers to share live video.

bomb can hit within 6 feet of its intended target.

"Fragments from a 2,000-pound bomb will go many football fields," Pike said. "That's one of the reasons why they're hot on this 250-pound bomb. The safe distance is a lot less."

Coalition aircraft have been dropping bombs daily in Afghanistan over the past week, according to figures from U.S. Central Command. Warplanes patrol Iraq daily. Those planes also perform surveillance and reconnaissance for troops on the ground with ROVER technology, Harbin said.

Though ROVER offers advantages, it

isn't perfect, Harbin said. Bad weather is a limiting factor. "This isn't a cure-all," he said. "It's a step in the right direction."

Here's how the new targeting technology has been used:

► **April 2005:** Sniper and mortar fire had pinned down Harbin and 25 Marines in the restive Anbar province in western Iraq. Harbin had been wounded by a rocket-propelled grenade when he called in an airstrike within 100 yards of his men. An unmanned Predator, piloted by an Air Force officer in Las Vegas, unleashed a Hellfire missile that killed the snipers but left the building they were in standing.

► **March 2003:** Kyle Stanbro, an Air Force special operations combat controller (now retired), used the technology to call in airstrikes that destroyed 35 Iraqi tanks in the early days of the war. Stanbro and his team, traveling in

Narrowing in on the target

The ROVER (Remote Operated Video Enhanced Receiver) system allows troops on the ground and warplane pilots to share information. ROVER allows the use of smaller bombs, such as the GBU-39, because targeting is more precise.

The ROVER unit is a small box used with a laptop computer.

1. Sensors on an aircraft send video to the portable unit.
2. Troops on the ground then highlight the target on the video screen for the aircraft.
3. The aircraft crew or an automated system directs the bomb to the target.

<p>GBU-39 250 pounds 5 feet, 11 inches long</p>		<p>GBU-32 1,000 pounds 9 feet, 11 inches long</p>
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Small, strong and precise
More GBU-39s can be carried in an aircraft. The bomb can penetrate 6 feet of reinforced concrete, and its ability to focus in on a target limits collateral damage.

Sources: L-3 Communications, www.GlobalSecurity.org, and wire reports
By Dave Merrill, USA TODAY

four unarmored vehicles, were able to stay out of the tanks' range and call in airstrikes for more than six hours.

► **September 2005:** ROVER technology was used to locate 182 survivors of Hurricane Katrina in New Orleans and direct helicopters and boats to rescue

them. Air Force Tech. Sgt. Travis Crosby, who used the system to help direct Iraqi police to stop suicide bombers last year, said the Air Force is prepared to use ROVER again this year if a major hurricane hits the USA.

DISCUSSION

- Describe the Remote Operated Video Enhanced Receiver (ROVER) that troops in Iraq and Afghanistan use to call in airstrikes.
- Prior to ROVER, how did troops get close air support?
- What are the benefits and drawbacks of the technology?
- How does ROVER help civilians?
- How do you think radio revolutionized warfare?
- What other technologies have dramatically improved the effectiveness of the military?
- What improvements do you think the military will make to the ROVER system? How could the technology's drawbacks be eliminated? In what other ways could ROVER be used to help civilians and soldiers?

VOCABULARY

- insurgents
- mosques
- revolution
- proliferated
- coalition
- reconnaissance
- cure-all
- restive

