



War Games

Do You Know Where Your Weapons Are?

Rosemary Johnston

President Obama recently authorized deployment of as many as 1,500 additional American troops to support Iraqi forces in the region in the continued resistance to the insurgent, self-proclaimed Islamic State in Iraq and Syria (ISIS), possibly raising the total U.S. troop numbers there to about 3,100, according to a Nov. 7, 2014, article in the *Wall Street Journal*. This will cost \$5.6 billion as part of a long-term campaign to conduct counterterrorism operations across the Middle East and North Africa.

As the United States continues to help fight ISIS, American troops face the challenges of unreliable communications and attacks that disrupt the supply chain.

This raises the question: Is this outcome inevitable, or can it be prevented? Targeted attacks in the Middle East by ISIS and the conflict in Ukraine have drawn attention to the need for better tracking of high-value assets in these hot zones.

ISIS Crisis: Where's the Ammo?

A report by United Kingdom-based Conflict Armament Research on the origin of ISIS ammunition stated that, of the 1,700 ammunition cartridges the group studied, almost 20 percent was manufactured in the United States.

Johnston oversees operations, sales operations, systems support and governance assistance for Savi Technology Inc. in Alexandria, Virginia. She supervises a team of sales operations, information systems, business systems and customer relationship managers. As the U.S. Air Force supply career field manager (1995-1999), she developed training, staffing and recruitment programs for 35,000 USAF and civilian personnel within the supply logistics career field. She chaired the USAF Supply Chiefs Advisory Board, the USAF Supply Training Team, and USAF Supply Wartime Requirements workgroups.



If U.S. weapons abandoned by Iraqi forces contained imbedded sensors, military personnel could track these abandoned weapons to keep them out of enemy hands.

The group documented more than 300 U.S.-manufactured cartridges, dating back more than a decade. It appeared that ISIS accumulated much of its arsenal from weapons seized or abandoned by Iraqi forces, meaning that the United States must fight foes armed with some of its own weapons. According to a Dec. 1, 2014, article on the *Inquisitr* news website, the United Nations warns that ISIS has enough weapons, artillery and vehicles to last between six months and two years. ISIS is able to move over a wide range with greater mobility. And even if the U.S.-led coalitions were to destroy the insurgents' vehicles and large weapons, ISIS still has a great many small weapons at its disposal. The article also says that the ISIS weapons include T-55 and T-72 tanks, Humvees, machine guns, short-range anti-aircraft artillery, and shoulder-mounted rockets seized from Iraq and Syrian forces during military raids.

According to the Conflict Armament Research report, U.S.-made materiel was documented in Iraq close to Syria about two weeks after the fall of Mosul to ISIS forces. The distance between the two regions is about 500 kilometers, or 311 miles, which demonstrates the logistical intelligence of ISIS forces.

But for abandoned and seized weapons from the United States and Iranian, Russian and Sudanese ammunition, ISIS wouldn't have nearly as many weapons and might not pose as much of a threat as it does now.

Ukraine: Russia Denies Supplying Arms

At the same time that the ISIS situation has been unfolding, turmoil in Ukraine has created ambiguity about the source of weapons entering the conflict region. Moscow has denied involvement in arming pro-Russian rebels, according to a Nov. 8, 2014, article in *The Washington Post*. Ukraine also has accused Russia of sending tanks and heavy weapons into rebel-controlled regions. *USA Today* reported on Nov. 7, 2014, that,

although Russia continues to deny these accusations, Ukraine and the West continually have accused Moscow of deploying troops and weapons to help aid a pro-Russian rebellion in eastern Ukraine—a practice the United States does not accept.

According to a Dec. 2, 2014, *Reuters* article, looking for evidence of Russian-supplied guns in eastern Ukraine is harder than it has been in the past—for example, when Russian soldiers in Crimea wore camouflage uniforms and carried rifles that easily marked them as Russian. However, rebels began using tanks and sophisticated weapons normally issued only to the Russian armed forces. Russia produced these T-72B3 tanks but never determined their use.

This demonstrates why communications must be clear and efficient in order to maintain successful relationships and insights into where a country's (or its allies') high-value assets are sent. This added insight could help provide tracking and communication of operational data in real time, providing end-to-end visibility of goods and critical assets moving through the supply chain at any location and in any environment. The ability to track and secure the high-value assets to mitigate risk is a key to improving operational efficiency.

Solution: Sensor Technology to Track Assets

Historically, sensor technology has made it easier for the government to track high-value assets and identify the location of weapons, ammunition and other critical infrastructure and materiel to ensure that these assets are in the correct hands. This issue is not new; there was a similar development during Desert Shield and Desert Storm (the first Gulf War of the early 1990s), when tens of millions of dollars in abandoned shipping containers full of valuable goods and weapons (known as the Iron Mountains) were abandoned. As a result, the U.S. Government saw the need for improved monitoring of the location and movement of cargo and high-value resources in order to save time and money and secure its assets around the world. The Army's Project Directorate for Automated Movement and Identification Solutions (PD AMIS) set out to develop critical logistics infrastructure and a method for collecting data to provide in-transit visibility across its entire logistics chain, including high-risk areas where the assets otherwise would be invisible.

As materiel is sourced from multiple locations and through multiple depots, military supply chains bring added complexity and uncertainty to logistical operations. Systems that support the military supply chain—from the tags and readers, through the software and to the alerts and reports—need to seamlessly operate amid great complexity and harsh conditions.

The conflict in Ukraine and the threat from ISIS have further developed a well-known priority issue for the U.S. Government over the last two decades. This is given special emphasis by the Obama administration's increased spending on troops and the resulting need to track and secure cargo in the conflict region.

Evolving sensor technology and the rise of the internet of things (IoT) have led to additional tagging and deeper analysis of data, mostly through sensors and predictive and prescriptive technology. Sensors allow government agencies to track the departure and arrival of crucial materiel such as food, ammunition, medicine, etc., and to record arrival time, stops along a route, humidity and temperature levels of cargo and other key factors. The sensor and data now also provide an opportunity to reroute in high-risk areas and save lives.

Sensor technology can be used to increase safety, minimize risk and operationalize the supply channel in these dangerous areas by providing intelligence on where a cargo is at any moment, from any device—even in regions lacking modern infrastructure. The technology is used to identify troops and assets in the desert and to provide real-time visibility and operational intelligence on these otherwise invisible assets. It also can assist the identification of a breach, when and where it occurred and help adjust course to improve safety and reliability around global shipping operations for some of the highest-value assets. If U.S. weapons abandoned by Iraqi forces contained imbedded sensors, military personnel could track these abandoned weapons to keep them out of enemy hands and to provide the U.S. military more reliable communications and visibility across the full supply chain.

Conclusion

The United States and its allies should not have to worry about weapons falling into the wrong hands and can improve the

tracking, securing and management of these assets. Providing service personnel with the location of their critical parts in very long and complex supply chains increases operational intelligence, safety and security in some of the most dangerous regions. Sensors can help detect deviation from an original planned route or ending point—and the future of sensors is to provide actionable intelligence through predictive scenarios.

Real-time visibility of supplies and planning system integration are just the starting point for military supply management and tracking. The supply chains require a global view in order to deploy unit equipment and sustainment supplies in real time. With sensors and data providing an integrated link between real-time asset information and planning systems, defense forces are in a much better position to execute logistical plans. To do so, data from every type of tracking device and reader will have to be monitored continually and compared to plan data and mission requirements.

The next step is for U.S. supply chains to continue tracking certain assets even after arrival and to move toward predictive analysis to ensure that weapons, tanks and ammunition all end up in the right hands and stay there. This will help ensure full visibility into the supply chain to see where high-value assets should go and where they should end up—saving time, money, and most important, securing and protecting our troops and the countries they are assisting. &

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