

Emergency Tools, Everyday Uses, Real-Time Help

For workers at the U.S. Army's Umatilla Chemical Depot, innovative mobile technologies offered help for emergency situations and in their everyday jobs.

By Mark Henderson

Emergency response leaders have many difficult situations to consider, and many more difficult choices to make. Planning the response to a potential catastrophic emergency is their chief concern – but they must also choose the equipment that responders will take into the field. And once they've chosen that equipment, they have to find ways to ensure that responders will be ready to use it if the time comes.

In northeastern Oregon, emergency planners have found some innovative ways to protect citizens in case of a catastrophic emergency – and they've

discovered outside uses for their equipment that both train responders and help the community every day.

Creating a Mobile Safety Net

The U.S. Army's Umatilla Chemical Depot stores some of the most hazardous chemicals in the history of mankind, making the need for an emergency response plan obvious. The Umatilla Chemical Depot is one of eight Army installations that currently store chemical weapons. The chemical weapons stored at the depot consist of various munitions and ton containers, containing GB or VX nerve agents or HD blister agent. The

Army is working in partnership with Oregon state and local government agencies, as well as federal agencies like the Environmental Protection Agency and the Centers for Disease Control and Prevention, to safeguard the local community and protect the environment as we store and dispose of these chemical weapons.

The Umatilla Chemical Agent Disposal Facility is designed for the sole purpose of destroying the chemical weapons stored at the Umatilla Chemical Depot. The facility was completed in 2001, and the Army began weapons disposal in 2004.

The facility uses high-temperature incineration technology to destroy weapons, a technology employed by the Army for more than a decade, safely and successfully disposing of more than a quarter of the nation's original chemical weapons.

Being Prepared

It's an all-encompassing emergency response scenario: a rural, widespread emergency zone, highly dangerous incident potential and response scenarios involving multiple medical and transportation concerns. To coordinate response, the Army formed the Chemical Stockpile Emergency Preparedness Program (CSEPP). CSEPP is a comprehensive plan that encompasses as many as 400 emergency responders, the majority of them local volunteers.

The key to CSEPP is real-time communication in an emergency situation, but its central command model had been antiquated and essentially one-way. "Our system kept situation info internal at the central ops center," says Casey Beard, CSEPP's director. "But that's 50 miles away. Responders in the field need crucial info in real time, with two-way communication."

In working with local technology supplier IRZ Consulting, Beard discovered a rugged handheld computer that could provide all the capabilities CSEPP needed. The handheld, called the TDS Recon, was introduced by Tripod Data Systems in 2003. The Recon, which runs Windows Mobile 2003 software for Pocket PCs, meets MIL-STD-810F military standards

for drops, vibration and temperature extremes, and has an IP67 rating – meaning it's impervious to water and dust. And two-way wireless communication capabilities can be added. Recognizing that the Recon was what they were looking for, CSEPP ordered more than 50 of them.

Now that CSEPP had the handhelds they needed for the field, they had to find a way to connect them with each other and with central operations. Working with local agencies and cities, CSEPP developed a groundbreaking new WiFi network, a 600-square-mile wireless LAN that connects seven cities in two states. It has opened the door to some fairly revolutionary changes in the way CSEPP works.

"With a Recon, first responders have the entire response plan in the database," says Beard. And the enhanced communications help as well. "Responders can call up a map of the chemical plume that shows wind speed and direction in relation to their exact position. They can access a real-time status board that tells them what type of accident has occurred – when, what, how much, initial injuries – to help them answer the critical question, 'What do I need to do?' in real time. And instead of a three-ring binder with the proper procedures and report forms, the docu-

Encouraging responders to use emergency equipment in their everyday jobs ensures they will be trained and comfortable using it if an emergency occurs.

ments are in the palm of their hand. Responders can use the Recon to navigate to where they need to be, and download maps showing facility locations, occupancy numbers, building layouts, contact people, etc."

Using the handhelds opens up a host of other capabilities as well. The Recon has CompactFlash ports and other connections that let users use a variety of peripheral devices with the handheld. Beard says CSEPP has already experimented with using portable printers and bar-code scanners to put coded wristbands on injured people. The responder can enter medical information into the handheld, associate it with a bar code and transmit it ahead to a hospital or to



The Recon allows workers at the Army's Umatilla Chemical Depot to communicate in real time.

EMTs en route. A hospital can later use the bar codes to track people and treatments. Responders can use portable digital cameras to take on-the-scene photos and send them out to central ops or to medical personnel. They can also fill out and send reports on the spot, recording data immediately to ensure more accurate reports.

Everyday Uses Go Beyond Initial Product Training

So if an emergency ever occurs, CSEPP has the equipment and the network to respond. But Beard wanted a way to ensure responders would be ready to use the Recons in an emergency situation.

“Most of these people are volunteers, with regular jobs,” says Beard. “A lot of them are police officers, firefighters, EMTs. We thought it would make sense to give them the handhelds and see if they could find uses for them in their everyday jobs. That way, they’d be completely familiar and comfortable with them if they ever needed them in a highly tense emergency situation. Plus it’s

nice to take advantage of these tools to help out in the community, instead of having them sit on a shelf until a once-a-year exercise.”

So CSEPP optimized their handhelds for four different environments – law enforcement, emergency medical services, public works and fire services – and responders went forth and found ways to use their new toys. And, not surprisingly, they found plenty of new uses. Besides using bar-code scanning to identify patients and send medical information ahead to hospitals, emergency field workers are using digital photography and real-time streaming video. By forwarding this visual information to medical person-



nel, firefighters and police, they can help those departments assess the situation and determine what needs to be done to help. Responders have found other innovative uses as well. Using bar-code scanning and widely available computer software, workers can use a suit-monitoring program to track the time re-

The TDS Recon handheld runs Windows Mobile 2003 software for Pocket PCs; meets MIL-STD-810F military standards for drops, vibration and temperature extremes; and is meaning it’s impervious to water and dust.

sponders spend inside their personal protection suits. The fire department maps and inventories fire hydrants for quicker fire response. The police have uploaded department procedural documents so they can instantly access them in the field – they’ve even performed crime-pattern analysis using mapping functions. And both departments use the handhelds to file reports on alarm calls.

All these outside uses are helpful to the agencies taking advantage of them, and they’ve helped CSEPP discover new ways to use the handhelds as well. And the true value of the handhelds’ everyday use will make itself known in a specific situation – if this emergency response equipment ever needs to be used in an emergency.

Mark Henderson is a technology writer in Portland, Oregon.

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