

Emergency Dispatch

PSAP On Wheels Deploys in Time of Crisis

Loudon County's Mobile Communications Vehicle Provides On-Scene 9-1-1 Telephone and Radio Communications

The death and destruction that Hurricane Katrina brought to America's gulf coast region reinforced once again the importance—and the vulnerability—of public safety communications systems. Not only were many PSAPs damaged or totally destroyed, much of the critical infrastructure such as radio towers, cellular towers, and public telephone lines and switches, also succumbed to the winds or floodwaters and will take months to fully repair.

Faced with established and emerging threats—hurricanes, tornadoes, chemical spills, and nowadays the looming threat of terrorism—many public safety agencies are choosing to add a layer of redundancy to their 9-1-1 communications systems by creating backup PSAPs. The latest trend is to create specially-equipped, dual-purpose vehicles which can operate as a backup or secondary PSAP should the primary PSAP be knocked out of commission. These vehicles also provide additional capacity in peak times, and can be driven to the scene of a large-scale incident or disaster to provide a forward command and control post.

LOUDON CLEAR:

Loudon County, Tennessee's primary PSAP was featured in the March 2001 *Advantage*. Although they already had a modern, well-equipped 9-1-1 dispatch, the county's public safety officials recognized the flexibility and additional safety factor provided by a "PSAP on wheels."

"We wanted a mobile communications vehicle in case we had to respond to a significant law enforcement or fire incident," explains Loudon County 9-1-1 Director,

"All they have to do is plug in a 25-pair cable that runs from the side of the vehicle into a prelocated RJ 21X to have actual 9-1-1 service at different locations in the county."



The Loudon County Mobile Comm Vehicle Being Outfitted at Cartwright Communications Technology, Inc.

Jennifer Estes. "This was especially true in the case of a long-term incident that required coordinating communications between different agencies and mutual aid groups."

The need for a mobile comm center was made even more urgent when the PSAP was forced to move from its existing home in the Loudon County Justice Center due to construction.

CUSTOM SOLUTION:

During the planning of the new communications vehicle, Loudon County 9-1-1 board members consulted with Louis A. Cartwright, owner/president of **Cartwright**

Communication Technology, Inc. of Knoxville, Tennessee to recommend equipment and provide a layout of the equipment room and dispatch positions. The resulting vehicle is somewhat unique in that it is literally an E9-1-1 center on wheels, complete with CAD system and mapping, radio dispatch consoles, and



The forward compartment features two 9-1-1 call taking and radio dispatch positions.

a full-blown E9-1-1 PSAP Telephone System.

Based on his past success with Zetron equipment, Cartwright spec'd the comm vehicle for a Zetron Model 4020 CCU (Common Control Unit) and three positions of Zetron's Model 4018 Pushbutton Console, along with three positions of the company's Series 3200 9-1-1 Telephone System.

"The Series 3200 Phone system includes the ALI controller which provides interface into the CAD and mapping software." explains Cartwright. "Also, each of the three desktop positions is equipped with desktop ALI displays. The Series 3200 is preconfigured with 9-1-1 trunks in it. All they have to do is plug in a 25-pair cable that runs from the side of the vehicle into a prelocated RJ21X to have actual 9-1-1 service at different locations in the county."

The 34-foot long trailer is towed by a diesel-powered Ford Club Cab "dualie" pickup. The interior of the trailer is divided into three distinct areas. The "gooseneck" at the front of the trailer serves as the equipment room. Next is a dispatch area equipped with two Model 4018 Radio Consoles and two Series 3200 PSAP Telephone consoles. (The dispatch area also houses a bathroom.) The rear of the trailer houses the Chief's quarters, with a third radio console and call taking position for use by a supervisor or another dispatcher.

INTEROPERABILITY OFFERS REGION-WIDE RESPONSE:

The Loudon County Mobile Communications Vehicle got its first real world test as soon as it was completed when it served as a "home away from home" for three months until the existing 9-1-1 center could be relocated to a different facility. It has also seen service at several long duration incidents, including an officer-involved shooting and a missing child investigation.

Interoperability is increasingly seen as a crucial capability for public safety entities and the choice of Zetron radio consoles ensured that the mobile communications vehicle meets that key criterion.

"Ordinarily, we dispatch for 20 agencies in Loudon County,

"Estes adds, "but we are also the designated dispatch for regional response. We're in the Region Two district of Tennessee. There are a total of 16 counties in the region, and the mobile communications vehicle is built to deploy to any of those counties."

To provide interoperability, the vehicle is equipped with multiple radios which allow the Model 4018 consoles to access all radio channels used across the region.

"There are 18 separate radios (including VHF, UHF and 700/800 MHz all with at least 250 channels each) interfaced to the radio console channel cards in the 4020," Cartwright says. "This lets operators select the channel in the radio that the consoles need to talk on for the event. It also has a remote control at one of the dispatch positions for a dual-band VHF and UHF 160 channel radio which allows the dispatcher to select the needed channel for the moment that the consoles will operate on. The 700/800 MHz radios include Project 25 and SmartNet/SmartZone capability. Also, there is a 16 channel VHF and a 16 channel UHF repeater that can provide repeated

communications where coverage may be lacking or in the event that everything else has been lost."

To provide radio coverage, the vehicle has a 40-foot push-up mast located on each corner of the trailer. VHF and UHF folded dipole base station antennas located in the upper storage area can

be easily attached to these masts. Alternatively, Loudon County has a mobile crank-up tower that can towed and colocated with the mobile command when needed. Even the Ford pickup tow vehicle is equipped with radios and gain-type whip antennas, providing another resource for communications support.

The vehicle also has an amateur ("Ham") radio that covers 0.5 to 450 MHz. The Ham radio can be remotely operated from any of the console positions.

READY TO RESPOND- ANYWHERE:

The tremendous capability and flexibility of Loudon County's Mobile Communications Vehicle means that it can respond to emergencies not only a local level, but also at a regional or even a national level.



A third emergency call taker/radio dispatch position is located in the supervisor's quarters at the rear of the vehicle.

"This is the first time we've had anything with this kind of capacity," says 9-1-1 Director Estes. "Now that everyone has seen what we have, our mobile communications vehicle is starting to see more use on a regional level."

In the early days after Katrina hit the Gulf Coast, the local FEMA director requested the use of Loudon County's mobile communications vehicle. The vehicle was quickly loaded up with supplies and the Loudon County EMA Director, Gordon Harless, and two Loudon County dispatchers drove the vehicle to Brookhaven Mississippi. As it turned out, the visit was a short one, as the existing PSAP was quickly restored to working order. Still, disasters such as Katrina demonstrate the tremendous flexibility of a dual purpose mobile command center/PSAP on wheels. In the coming years, it seems likely that many other public safety agencies will adopt such vehicles to provide a second level of protection for their communities.



The Gooseneck houses the equipment room. Each corner of the trailer's roof houses a 40-foot extendable mast.

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