



We're **Live!**

Live video downlink technology can reinvent disaster management.

By Capt. Phil Charron

At the center of every field situation is the need for fast, reliable communications. The broadcast industry consistently takes advantage of live video downlink technology, and incident commanders can boost emergency response with the technology as well. But before technology comes into play, the foundation of emergency preparedness is a solid plan. A strong plan not only makes a community safer, but also creates more opportunities for funding, from local to federal levels.

Massachusetts has initiated an innovative emergency-response plan that consists of response regions. The Regional Field Communications Unit program is a new concept designed to improve communications and interoperability between the emergency and fire services of New England. Each of the six field communications units — Lowell, Taunton, Waltham, Worcester, Pittsfield, and Holyoke — has a specific geographic area to cover.

The Lowell Field Communications

Unit contains more than 66 towns and communities throughout Massachusetts and because the coverage area is so large, it requires extensive strategic planning and the right equipment. To obtain field communications equipment, the Fire Chief's Association of Massachusetts, in conjunction with the Massachusetts Department of Fire Services, received a grant from the state Executive Office of Public Safety.

New Incident Management

New technology bridges the gap that exists in emergency management. Microwave equipment, including technology from Microwave Radio Communications (MRC), delivers fast, deployable disaster communications support networks for phone, video, and Internet connectivity.

The technology generally includes equipment that can receive, record, and relay live digital video transmissions from ground-based or airborne camera positions. A microwave receiver in a

command van, for example, connects to a matrix switcher that connects the audio and video simultaneously to local monitors and recording equipment, as well as to an onboard transmitter that may be used to relay the video to a central command operations center.

With real-time video of an incident in a command center more informed decisions can be made. In the past, radio was the main mode of communications. For example, an incident commander walked around during an emergency with a radio and a clipboard and verbalized the scene back to the emergency-operations center. The future is real-time video. This new scenario includes an incident commander sitting within the central command post watching a real-time video downlink image, which can be directed from the command location, while communicating effectively to all available assets.

After a December 2006 explosion

in Danvers, Mass., the Lowell Field Communications Unit was sent to support the state hazardous materials (hazmat) team. The hazmat team gathered readings and presented research to the units on scene. Under hazmat guidelines, the leader must be able to see team members at all times. The current methodology has the leader directly onsite with team members, which can be time consuming. By using video-downlink technology, the hazmat team leader could operate from a command vehicle or EOC and use a helicopter to transmit shots of the team members back to the command vehicle where the team leader could make calculated decisions. In the future, ground-based video transmission will provide additional detail and even more value to the command network.

An additional benefit of video downlink technology outside of disaster preparedness is event management.

How it Saves Lives Video Downlink

A helicopter can transmit shots of emergency responders on the ground during an incident to a command vehicle, helping the incident commander make better decisions.

During the Lowell Folk Festival, an airborne video downlink was provided to the Lowell Field Communications Unit from the Massachusetts State Police Airwing. The video downlink tracked all traffic patterns and inbound approaches to the city, as well as performed a crowd evaluation. The field unit then broadcast the footage to the emergency operations center, allowing real-time decisions to be directed to the units stationed in and around the city.

With the increasing number of field communications units and personnel,

numerous training exercises have been held throughout the past few years. Since December 2005, for example, there have been ongoing training courses at the fire academy for live video downlink training, for example. During the fire-academy training, each technician practices the communications sequence and provides direction to the air asset from the ground. It is beneficial for both ground and air assets to communicate effectively in the event of an emergency. The teams can work more seamlessly together knowing the capabilities of the air asset, as well as the command language for ground control. ■

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