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Critical link

By **Tom Martin**
Business Lexington

The news had a terrible ring that was all too familiar to many Lexington residents with ties to the coal fields of Kentucky: six men, trapped 150 stories below the earth's surface after the Utah coal mine they were working collapsed on August 6.

Among members of the local business community with vivid recollections of such disasters was Harlan native Lee Rutherford, the coal-miner's son and son-in-law who went on to build The Tower Group, a multi-faceted communications company headquartered in downtown Lexington. Among the company's divisions is EchoSat, a national supplier of satellite high-speed broadband connectivity. And as it happened, rescuers in Utah's remote Crandall Canyon, 140 miles south of Salt Lake City, had an EchoSat unit mounted on the roof of their mobile Command Center and were in desperate need of uninterrupted communications technology.

EchoSat's high-speed satellite service features SurfBeam, a recent innovation in satellite technology. Unlike typical systems, the EchoSat SurfBeam utilizes technology similar to cable service for fast, reliable, high-speed connectivity.

The EchoSat SurfBeam system was deployed primarily for EchoSat's PCI compliant Secure Payments Gateway (SPG) service. This service allows retailers in all industry segments, such as convenience stores, grocery stores, restaurants and drug stores, to transmit credit cards, electronic benefit transactions, checks, ATM transactions and other highly sensitive financial information at high speeds for authorization by credit networks that process major credit cards. EchoSat's SPG service not only uses satellite, but can be connected to EchoSat in Lexington with DSL, cable, wireless and other broadband connections.

Earlier this year, explained Rutherford, EchoSat began making its SurfBeam satellite

service available to customers throughout the United States who required but had not had access to reliable and robust Internet connectivity. The service is now deployed in many remote areas where traditional communications are not found: Corps of Engineer dams; remote fire station forestry camps; by members of the United States Geological Survey group; an isolated village in North Dakota; and in hard-to-reach areas of Canada, Mexico and the Caribbean. "These also include first responders, SWAT teams and other highly unusual applications where satellite is critical," Rutherford said. EchoSat engineers had invented a unique mount for use in such applications, and one of them sits atop the Carbon County sheriff's department RV in Utah — a familiar backdrop to all who have followed televised press briefings from the scene of the mine collapse. It is one of two EchoSat units used at the scene.

"At the push of a button, an onboard computer reads the present GPS location of the unit, unfolds the satellite dish, and locks on to a specific satellite over 23,000 miles in space," Rutherford explained. EchoSat, he said, uses satellites owned by SES-Americom, the world's largest satellite fleet that covers 97 percent of the earth's surface. "In less than five minutes," he said, "the EchoSat satellite service is locked in, and the customer has high-speed access to the World Wide Web and its resources. VoIP (Voiceover Internet Protocol) technology can be utilized. The customer can use a telephone without the use of cell towers or traditional landlines, services that are often unavailable in such isolated areas. Because of the critical nature of the mining disaster and the need for communications, EchoSat was contacted to make sure the service was maximized to its fullest potential."

Mark Carl, EchoSat's chief technology officer, went to work immediately with SES-Americom engineers who cleared at no charge a channel that would otherwise be used for business. The critical satellite link of the sheriff's department was moved to that channel for the exclusive use of rescue officials. Those efforts ensured that the Carbon County sheriff's department had "always-on" high-speed service, 24 hours a day, without any contention by any other satellite user. A team in the EchoSat Network Operations Center, located in the basement of the Lexington Financial Center, monitored communications and stood by in case issues arose on the scene.

According to Rutherford, Carl, a Kentucky native and a Berea resident, is primarily responsible for the design, build out and highly sophisticated operations of the EchoSat network. "Mark is one of the brightest individuals I have ever known. What he does daily is truly rocket science. He has a typical Kentucky demeanor of 'If you need help, you can count on Mark.' As soon as Mark heard of the issue, he made sure that the Crandall Canyon Mine disaster received top priority."

While many observers of the Central Kentucky economy have bemoaned the level of preparedness of the workforce for jobs in high-tech fields, Rutherford has discovered the opposite. "We have encountered many people in the Lexington and outlying areas who are extremely gifted and talented, who may be working at other jobs only because they weren't lucky enough to find the position that suits their qualifications." He noted that EchoSat could have set up its Network Operations Center (NOC) in a major metropolitan area but preferred the culture and environment of Lexington. "It's unheard of to build a NOC in Kentucky or Tennessee or someplace similar because usually you don't find the talent," he said.

"I'm very proud of the EchoSat team and their always 'above and beyond the call of

duty’ attitude. Mark, his engineering staff and the 24X7 NOC Help Desk are truly unique, service-oriented individuals.”

Rutherford, who lost his best high school buddy to an Eastern Kentucky coal mine disaster and recalls attending many funerals in which multiple members of families were mourned, added, “I am also humbled that as Kentuckians, the EchoSat team could be a small part of the valiant efforts and sacrifices made by all those trying to find the trapped miners in Utah.”

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