

Carroll Technologies Group

30 Years in the Making

By Art Sanda

From a basement beginning to one of the largest distributors of mine safety supplies and equipment



Thirty some years ago, enterprising young men on opposing sides of the West Virginia-Kentucky border began businesses in the basements of their respective modest homes unaware that one day, together, they were destined to become the leading providers of wireless underground communications and tracking systems as one of the industry's largest private distributors of mine safety supplies and equipment.

In 1977 in Harlan, KY, Winston Carroll and his father, Ollie, started Carroll Engineering to repair mine phones. About the same time, across the border in Logan County, WV, John Evans, Glen White, and his son, Gary—former president of the West Virginia Coal Association and now head of International Resource Partners, a major Southern West Virginia coal producer—founded Delta Electric, Inc. to rebuild circuit breakers used in mining.

Today, both operate under the umbrella of Carroll Technologies Group. “While both companies remain true to their roots in mine communications and circuit breaker repair, they also have branched out substantially into new product areas and new territories,” said Mike Hastings, a long-time industry executive and president and chief executive officer of Carroll Technologies. “We still supply mine phones and distribute circuit breakers, as well as repair them for Eaton Corp.’s Cutler-Hammer Division,” he said, “but today, not only do we repair mine phones, we now are involved in complete mine communications systems.

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“When the MINER Act (Mine Improvement and New Emergency Response Act of 2006) was introduced, we saw an opportunity to build a business in miner and equipment tracking and underground communications,” he said. “We approached it by having Tommy Bannister and his brother, Phil, from Delta Electric, and Clark Johnson from Carroll Engineering, thoroughly investigate and evaluate each and every alternative communications system available before we focused in the one solution we would offer to the industry.”

“We’ve been involved with leaky feeder communication systems for some 16 years,” Tommy Bannister said. “To the uninitiated, having a ‘leaky’ anything has



Carroll Technologies Group Senior Management: Mike Hastings, president and chief executive officer; Tommy Bannister, president Delta Electric, Inc. and Clark Johnson, president Carroll Engineering.

a negative connotation, something's wrong somewhere. That's not the case. A 'leaky' system simply means that transmissions 'leak' out of and into the cable—really the antenna—that carries transmissions, the communications."

Carroll Technologies Group distributes the Varis/Becker wireless communications system and the Matrix Design Group personnel tracking system through the group's two operating companies, Delta Electric and Carroll Engineering. "In something like 43 percent of all the underground coal mines in the United States, our systems either have been, are being, or are under contract to be installed," said Hastings. "We figure that we have strung enough cable for these systems to stretch from the East Coast to the West Coast, round trip. Twice," he said. "And from the number of personnel tags we've sold, we are monitoring 15,000 coal miners every day.

"These systems have been specially designed, ruggedly built and, as we explain to everyone when we install a system, the radio phones involved won't work at the hunting camp; they are on special frequencies and they are secured by encryption; they have to be if they are going to perform to their potential," Hastings said.

According to Hastings, the systems offered by Carroll Technologies Group are not limited to the absolute essential use of mine emergency communications and, in fact, extend well beyond that. "These can be real production tools as well," he said.

"That's one of the key things we do that few others attempt," Hastings said, "We enhance the products we sell; we add value wherever possible. For instance, we asked ourselves the question: How would you know if just one section of a communications/tracking system was off line, as opposed to readily seeing that an entire system is down for some reason? In answer to that, we developed an integrated audible alarm. That wasn't required; it was something that we added to the system on our own.

"Going a huge step further," he continued, "looking at ways to make the communications tracking system even more useful to the coal operator, we developed a complete Mine Communications Center (below), a centralized location where tracking and communications information from several mines at one operation, or several operations, is constantly being monitored. This is another layer of safety for the mine, a second set of eyes to back up each mine's monitor, but also eyes which provide a broader view of an entire operation or operations," Hastings said.



The new SaM Central Communications Center allows mine operators to talk across several platforms and monitor several mines from a single location.

According to Hastings, it is this broader view that is central to the company's strategy and growth. "In addition to representing our 74 partner manufacturing companies, we install, troubleshoot, and service the systems we sell, and we train mine personnel to operate them," he said. "Also, being certified by 56 of the 74 companies we represent, we perform authorized repairs and rebuild units at either our own facilities or at the mine site. Not many companies can match that breadth, as well as depth, of sales and service."

Apparently this has served the company well. "In the early days, Carroll Engineering and Delta Electric had maybe 15 employees between them in West Virginia and Kentucky," said Hastings. "Today, Carroll Technologies Group has more than 100 people spread over operations in eight states."

Hastings said the Carroll Engineering and Delta Electric names have been retained because of their long history in the coal mining business. "However, from the perspective of servicing the customer, the operating companies leverage each other's strengths," he said. "What one company doesn't offer, the other does; we collaborate to provide for customers with multi-state operations and we call on each other in meeting our respective customers' individual needs."

While the vast bulk of their business is in coal mining, Carroll Technologies Group also has customers involved in mining zinc, trona, and salt. "But coal is our main business by far," said Hastings. "That's our history and that's where we see our growth and our future and we continually are on the lookout for new product partnerships to establish, or even companies to acquire, that will enable us to expand even further the services we offer the industry."

Hastings is optimistic for the future of Carroll Technologies Group's communications business. "Following 9/11, it became clear that one thing all the agencies involved in emergency response could not do was talk to each other at the same time," Hastings said. "Working with the software company Strictly Business of Huntington, WV, we developed our Mine Central Communications Room. Using the Cisco IPEX System, we make possible instant telephone communications between several remote locations and those underground in the mine, either by land phone, cell phone, central computer, PC, or Blackberry; really, any kind of voice or text device and in any combination communicating together.

"Think of the possibilities," Hastings said. "In an emergency, an *continue*



A mobile communication option allows mine operators to establish remote command centers.

Carroll continued

EMT underground can be in contact with emergency room doctors and specialists no matter where they are located. In a catastrophic event, those at the mine can be in instant and simultaneous communication with state, federal, and mining experts anywhere in the country, or the world for that matter.

“Operationally,” he continued, “those underground can be in contact with

those on the surface, at the main office, at headquarters, even with equipment and system manufacturers; whenever they need, when they are needed, no matter where they are located. As a mine operator, that’s a tremendous tool to have at your disposal. And security is not a problem; the system incorporates DPL—digital private line—that prevents unauthorized access to the calls.

“Yet another tool for the coal operator

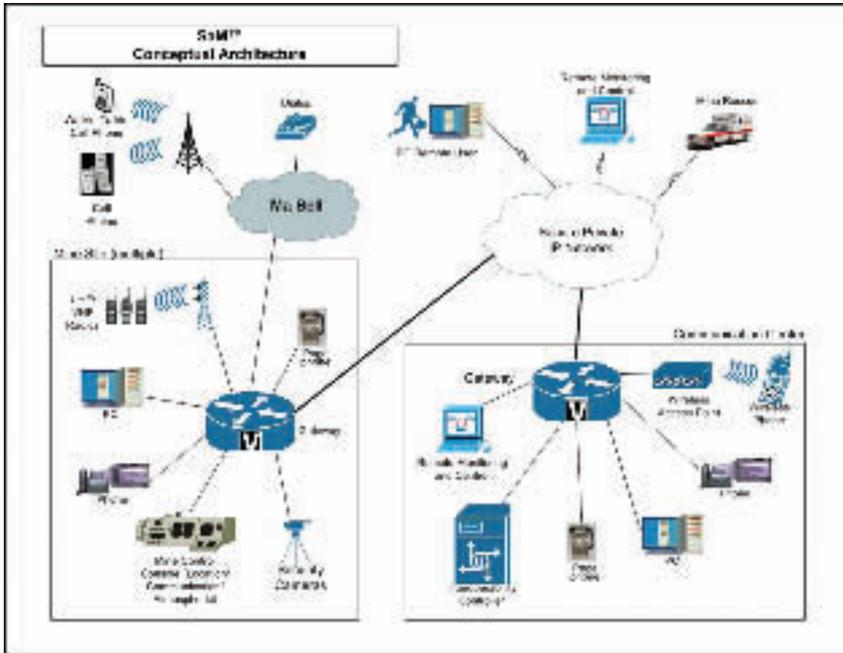
was introduced by us at last September’s Bluefield Coal Show,” Hastings added, “what we call our Power Factor Correction System. Offered by Eaton/Cutler Hammer, this system enables us to monitor and measure power consumption at the mine and, through analysis, identify those areas that can be adjusted, changed, or modified to reduce power consumption, thereby reducing power costs. Additionally, this information also can be valuable in helping to determine equipment efficiencies, and whether what had been promised in way of performance is being delivered.

“Products and services such as the Central Control Room concept and the power consumption monitoring and analysis system can help the mine operator meet the needs of today and tomorrow,” Hastings said, “but we also look beyond even tomorrow.”

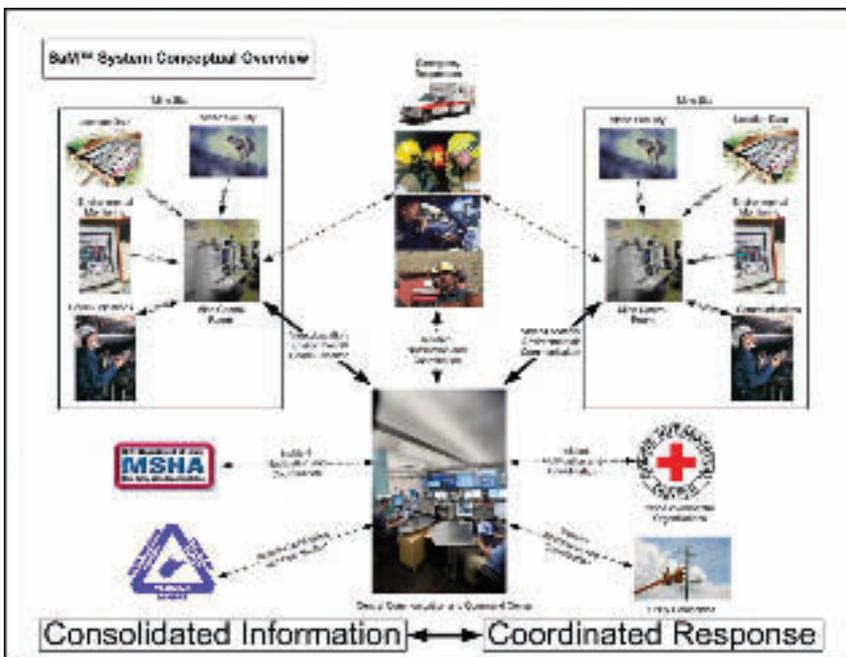
In anticipation of the future, Hastings said the next round of regulatory requirements may lead to requirements for atmospheric monitoring to measure airflow, methane, barometric pressure, carbon monoxide and, in the case of diesel, nitrous oxide. “We are working with manufacturers to develop a system that will have the ability to monitor all those elements and to transmit that information using the existing infrastructure.”

Hastings offered that it is efforts such as these that make his company “a true value-added supplier” to the mining industry. “We provide systems as well as products, service as well as sales, repairs and rebuilds as well as replacement, and we maintain an extensive inventory so our customers don’t have to,” he said. “We represent the best providers to the mining industry, the best products, at the best value and we constantly are in pursuit of the new, the unique, and the useful, things such as tape that glows in the dark for 12 hours after having been exposed to even limited light and vests that measure heart rhythms.

“We have a great company made up of great people,” Hastings added, “both of which probably account for an employee attrition rate that is less than one percent and a customer base that comprises most of the underground coal mines in the country; each of those accomplishments speaks highly of the other, as we do of both. We’re proud to be part of a proud industry, and we look forward to playing a continuing important role within it.”



The SaM system uses IPICS software to convert all communications to IP.



The control room operator acts as an intermediary between the responsible person on site and first responders.