

'Eliminator' gets real-world test

Equipment installed in Indy

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Stoplights at two of the busiest intersections of Indianapolis have been upgraded with Fort Wayne equipment that could keep traffic flowing no matter what kind of obstacle there is between the traffic signals and an emergency vehicle.

The special equipment invented by Dave Gross, founder of Collision Control Communications, is called "the Eliminator" because it can eliminate traffic congestion that slows down an emergency response.

Traffic signals in Indianapolis were upgraded on West Street where it intersects Maryland Street near the RCA Dome and Washington Street near U.S. 40. The equipment also is about to be installed on a fire engine.

The installation follows months of testing at a traffic-signal shop, where the Eliminator passed with flying colors.

"It works pretty well," said John McCollum a signal electrician with Indianapolis' Department of Public Works/Operations/Traffic. "What Dave has is going to improve on something that's already been really useful for a lot of cities."

"We've had another product ... that's more of a line-of-site visibility thing, and if there were tree limbs or trucks in the way it wouldn't work that well," said McCollum, who tested the Eliminator. "With Dave's, since it's radio (based) and doesn't count on that older technology that's line of site, you can be coming around a corner a quarter of a mile away and still get the pre-empt. It makes it a little more effective."

Lights atop emergency vehicles in Indianapolis and several major metro areas have strobe equipment that can change traffic lights to let them through, but the system relies on an optical signal that can be blocked by a bus or semi or even tree limbs or fog, Gross said.

After noticing an ambulance trying to work its way through congested traffic the day after Thanksgiving several years ago near Glenbrook Square Mall in Fort Wayne, it occurred to him that using radio equipment to control traffic signals might save lives.

In developing the Eliminator, "we've had a team that we've assembled and called on members as they've been needed," Gross said — and that team includes one of his neighbors.

"Guy Johnson is a neighbor who is a traffic-signal engineer. He was instrumental in helping develop it," Gross said.

Johnson "had extensive experience in trouble shooting traffic-signal cabinets and knew how to get our device to do what we wanted it to do. He made sure engineers stayed within design constraints of the newer traffic signals," he said.

The Eliminator uses radio signals to interact with traffic lights up to a mile away and to detect the approach of other emergency vehicles in the area.

Prior to an emergency vehicle's arrival at an intersection, traffic signals in its path recognize its approach and will turn green in the vehicle's direction of travel, while displaying a red light to all other directions of traffic flow.

In the event that two or more emergency vehicles are on a collision course, the Eliminator will warn the vehicles when they get within a mile of each other via an audible alarm and a flashing display.

Engineers are improving the device to also include a voice warning, and they expect to upgrade

the Eliminator soon with a "smart" mode that pre-empts traffic-signal lights automatically whenever a emergency vehicle's flashing lights activated.

The display on the face of the Eliminator looks like a dial, and the position of one or more lights flashing at the circumference indicates the direction of approaching emergency vehicles within 6 degrees.

Gross formed Collision Control Communications to design and develop the technology and patent and license it, spending most of his savings for retirement in the process.

He recruited Thomas Laverghetta, professor of computer science and broadcast technology at Indiana University-Purdue University Fort Wayne in 2000 to begin the design work.

Eventually, an associate professor at IPFW and two additional engineers were added to the team to design and develop working prototypes.

Electrical engineers with J&S Resource Management built the prototypes the city of Indianapolis is using by hand, Gross said.

"We donated them ... in return for being our test city," he said.

"One of the reasons we were interested in using Indianapolis as a test was they could do an apples-to-apples comparison (with strobe-based signal pre-emption equipment)," he said. "We thought it would be better than a city that had never used anything before."

The equipment was unveiled to firefighters from across the country during the Fire Department Instructors Conference in the RCA Dome about a month before it was installed on traffic signals or fire engines in the city, Gross said.

"Because of that buzz, I think a lot of the convention-goers were drawn to our booth and we had a lot more response than we had anticipated," he said. More than a dozen cities "expressed interest in seeing more of the technology."

The industry will have a chance to learn more about the Eliminator through articles soon to be published in Fire Chief's Magazine and the IMSA Journal, a publication of the International Municipal Signal Association.

The Department of Justice and the National Institute of Justice have taken an unusually keen interest in commercialization of the technology because they believe it could speed a large-scale response to an emergency caused by a terrorist attack, Gross said.

The Eliminator was among only a dozen technologies selected by the Office Of Law Enforcement Technology Commercialization three years ago for a commercialization planning workshop it held in Albuquerque, N.M.

Gross has patent rights for the technology in the United States and more than 20 foreign countries, including Canada.

Collision Control is preparing to sell the Eliminator for about \$4,000 per traffic light — the same amount charged for competing technology. And Gross has discussed outsourcing production of the Eliminator to White Electronics in Fort Wayne.

But he hopes to license the technology to another company or group of companies that would produce and market it. He has arranged for Lagerman & Associates in Washington, D.C. to handle the licensing.

"If somebody's ready to buy, we're ready to sell," Gross said. "We could easily have them ready to go for them in a few months' time."