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# Drivers no longer lo ..#!\$.. adio reception in tunnels

By Jim Ritchie

TRIBUNE-REVIEW

Saturday, July 30, 2005

Hey listen, there's no static.

A group of engineering students and staff at Carnegie Mellon University has fixed the daily commuter annoyance of losing radio reception while passing through the Fort Pitt and Squirrel Hill tunnels.

Radios long have gone silent in the tunnels for the nearly quarter-million motorists who drive them daily because the hillsides block radio waves. That's frustrating for drivers who miss news, traffic reports or a favorite song. Nearly 120,000 drivers use the Squirrel Hill Tunnel and about 121,000 motorists drive the Fort Pitt Tunnel each day.

The solution to keeping people tuned in came from a band of CMU volunteers, led by electrical and computer engineering professor Dan Stancil. The group developed a way to bring radio waves into vehicles traveling through the tunnels.

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"It is a fascinating idea because what we're doing isn't consuming a whole lot of time, but making a huge impact on a lot of people who listen to the radio," said J.P. Van't Hof, 27, a graduate student from Grand Rapids, Mich.

Radio sig

Keith Hodan

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since about July 4 and in the Squirre about two months.

"They've been good," said PennDOT Steve Marsinko. "The students put a effort to set up the system. It took a le and, hopefully, gave them good job e

Not only did Stancil's group solve a c problem, they did it at little cost. The Fort Pitt Tunnel was about \$15,000. I received estimates from contractors 1 \$100,000.

"I think a big part of this is wanting to something back to the city," said grad Ben Henty, 27, of Newtown.

The idea started with Stancil's son, Brian, who drove to a summer job in Monroeville throu Squirrel Hill Tunnel daily and decided there must be a way to wire the tunnel so motorists their radios.

"He got annoyed that he lost his favorite song every time he went through the tunnel," Da "Brian took this as a challenge."

Then a Virginia Tech student, Brian Stancil now works at the National Robotics Engineeri a part of CMU's Robotics Institute.

After Brian Stancil got PennDOT's permission to work at the tunnel, his father recruited volume engineering classes. They've been working on the two tunnels since about 2000.

An early attempt to provide radio reception didn't last. High winds in the tunnel, caused by equipment, unfastened wiring in the equipment the group installed. The new equipment ir cable that can withstand the conditions.

The system works by connecting radio antennas mounted outside the tunnels to equipme the crawl space above the tunnel roofs. That equipment retransmits the radio signals for pick up.

Most of the nearly 20 students who have worked on the project are, or were, graduate student Stancil's classes. Other students volunteered because they had an interest. Van't Hofellow student Jessica Hess spearheaded the Fort Pitt Tunnel project.

There's still more work to be done.

The students plan to resume work in the tunnels in the next few months to boost the AM stations, but not all. When the work is done, motorists will he improved signal from stations they could receive if they were walking outside.

In the Squirrel Hill Tunnel, motorists can tune in FM stations but not AM stations.

The group has no plans to work in the Liberty Tunnel, where motorists can hear AM static

Other antennas in the Fort Pitt Tunnel allow cell phone users to talk without disconnecting

T-Mobile, a cell phone provider, recently improved its equipment in the Fort Pitt Tunnel to service. Verizon and Nextel also have signal-boosting equipment in the tunnel.

Pittsburgh police also have equipment in place to maintain radio communications. "That's for us," police spokeswoman Tammy Ewin said.

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