

Little-known 'black-box' technology on cars helps diagnose accidents

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DALLAS – Someday in the next couple of years, Dallas traffic investigators may arrive at accidents armed mainly with a small box.

They will plug a cable from their "data retriever" box into the wrecked car's computer, download some information and head back to the office to analyze it.

Included will be some key pieces of crash data: the vehicle's speed at the time of the accident, the position of the throttle, when the brakes were applied and whether the driver was wearing a seatbelt.

If that is more information than some Dallas drivers want shared with authorities and insurance companies, their concerns may be a little late. The technology is not only available - it's in use and is being marketed.

Most motorists, though, probably aren't aware of it. For years, cars' computers have monitored basic crash-related data as part of their airbag systems. But it has been only in the last few years that some car computers have begun storing the data.

As a result, the information is more accessible than ever.

Thousands of 2000 model General Motors and Ford vehicles are equipped with computers that record "crash-data" numbers, and a company in Santa Barbara, Calif., began selling a \$2,500 device in March that should enable investigators to easily gather them.

"We're in talks with the California Highway Patrol now," said Don Gilman, business unit manager of Vetronix Corp. in Santa Barbara, which manufactures the Crash Data Retrieval device.

Safety sells, and the primary purpose of the technology is to provide automotive engineers and designers with real-world crash data. That, in turn, should lead to improvements in vehicles' structural and passenger-restraint systems.

"When you start putting seat sensors in cars that slow down or alter how an airbag is deployed, when you multiply the complexity of how an airbag operates, you really want to validate that it all works," said Phil Hasletine, president of the Automotive Coalition for Traffic Safety in Arlington, Va.

Storage the key

Over the last decade, cars' onboard computers have become increasingly sophisticated.

Though they primarily control a vehicle's engine and transmission, computers perform thousands of other tasks as well.

Most measure speed, brakes and the force of a collision. All that was needed to create a de facto "black box" was the capacity to store those data, auto industry officials say.

Three years ago, the National Transportation Safety Board urged automakers to begin collecting data from their crash-related devices.

"There's no such thing on a car as a 'black box,' " said Jon Harmon, Ford's technology public-affairs manager. "It's just extra memory in the car's computer. There theoretically has been the capability for some time to store that data. But up to now, we just hadn't set it up that way."

GM, which has been a leader in the effort, first put enhanced "event data recorders" on thousands of rental Cadillacs in 1998, said Terry Radigan, a GM spokesman.

This year, thousands more mainstream vehicles got the extra computer capacity, including all 2000 model Chevrolet Cavaliers and Pontiac Sunfires, Chevrolet Malibus, Impalas and Monte Carlos, the Chevrolet Venture, Pontiac Montana and Oldsmobile Silhouette minivans, and the Oldsmobile Alero and Pontiac Grand Am midsize sedans.

Ford is providing similar computer capacity in its 2000 model Ford Taurus and Mercury Sable midsize sedans. Over the next year or two, Ford Motor Co. and the National Highway Traffic Safety Administration plan - with the owners' permission - to analyze data from 100 crashes involving the cars.

Data from the enhanced recorders could show, for example, that a driver was traveling at 33 mph on impact, had his foot on the brake and off the accelerator, was wearing a seatbelt and the point at which the airbag deployed.

It could also theoretically indicate - perhaps to the chagrin of an injured motorist seeking a settlement - that the driver was exceeding the speed limit, was a little slow to hit the brakes and wasn't wearing a seatbelt.

Lawsuit fodder

Data from vehicles' computers have been used in litigation for years. Even before computers began storing the data, plaintiffs' attorneys were hiring engineers to retrieve basic airbag and seatbelt information from a wrecked vehicle's computer - often a difficult task.

With the new data retrieval devices, the task should become much easier, experts say.

"It's interesting," said Windle Turley, a high-profile personal-injury lawyer in Dallas. "Each year, they add data. But so far, I can't say it has been pivotal in a case. Most of the time, it has been supportive of the case our accident reconstructionist had outlined."

Mr. Turley said he was unaware that Vetronix was selling a data retrieval device to the public. "It's good, and we need to keep moving in this direction."

Automakers also acknowledge that the data could be useful in defending themselves against product-related lawsuits.

Crash research "is the main reason for this," said Mr. Radigan of GM. "But I think it would be a tough statement to make that the sole reason we did it was to learn more about accidents." GM, for example, was able to prevail in a lawsuit brought by the survivors of former pro football player Jerome Brown. Mr. Brown died in 1992 when his high-performance ZR-1 Corvette hit a tree.

In the lawsuit, Mr. Brown's survivors contended that the Corvette's airbag deployed when the car hit a pothole, causing Mr. Brown to lose control of it. But airbag data stored in the car's computer - a forerunner of the more sophisticated system now in use - showed that the airbag deployed on impact, as it was designed to do.

GM maintains that the crash data belong to the owner of the car. Information about the crash-data capabilities can be found in owners' manuals. So far, a few hundred owners have contacted the company after an accident and asked that the crash data from their cars be downloaded, said Mr. Radigan.

"Any time we get a chance, we will dispatch someone to download the information," he said. "We're anxious to learn more about it." Although GM maintains that the crash data are basically private information - Ford has not taken an official position yet - Mr. Gilman of Vetronix Corp. and others expect it to become more public shortly.

Already, judges have ordered crash data during evidentiary hearings. Some police departments view it as impounded evidence when a car involved in an accident is suspected of causing the accident, Mr. Gilman said.

"There are many invasions of privacy now," he said. "Your bags are searched at the airport. If an officer looks through the window of your car and sees you drinking a beer, he is going to stop you. If they see you not wearing a seatbelt, you're going to get a ticket.

"This is a gray area that in two or three years will be resolved one way or the other," he said.

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