Does Your Car Have a Spy in the Engine?

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AFTER Danny G. Hopkins's Cadillac CTS rear-ended Lindsay Kyle's Dodge Neon at a traffic light in Rochester a year ago, witnesses said Mr. Hopkins had been zooming down the road, and crash investigators who examined the condition and location of the wreckage estimated that Mr. Hopkins was traveling 65 to 70 miles an hour at the point of impact.

But in a trial that ended on Oct. 7, a witness emerged with more to say: that four seconds before the crash, it had been traveling 106 m.p.h.

The witness in the case was an event data recorder, an automotive equivalent of the black boxes used to reconstruct plane crashes. A jury convicted Mr. Hopkins of second-degree manslaughter, a crime whose elements include recklessness and which carries a penalty of up to 15 years in jail.

"Clearly the black box technology played a large part in the jury's finding of guilty," said Richard C. Roxin, the assistant attorney general who prosecuted the case. It was the first use of such data in a criminal trial in New York in a field that is still a relative novelty for the criminal courts nationally.

With millions of vehicles already equipped with data recorders and millions more joining them every year, such witnesses — computer chips that store data, like how hard the collision was, whether the brake was applied, whether the car was accelerating or decelerating, whether a turn signal was used and whether the seat belt was buckled — will be present in more crashes and in more cases, criminal and civil.

Earlier this year, the National Highway Traffic Safety Administration published a proposed rule that would require that any car that records such data to do so in a uniform format, so that it can be more easily read by the police, insurance companies, investigators and others.

The chips are byproducts of the increasingly computerized nature of cars. The computers are present anyway to control the engine, decide whether and how to deploy the air bag or apply the antilock braking system. To do such work, most of the computers do not have to record
any data, but many of them do; the traffic safety agency estimates that 65 to 90 percent of passenger vehicles in the 2004 model year have at least some recording ability.

"If your car has an air bag, it has a little memory," said Tim Hurd, a spokesman for traffic safety agency, which collected comments from the public until late August on the proposed rule. "Any air bag has an air bag controller," he said. "The air bag controller has a little internal dialogue all the time: 'Am I in a crash, should I deploy, oops, we're slowing down real fast, we're slowing down real fast, am I in a crash?' "

The automakers, led by General Motors, set up their systems to gather such data so they could refine the logic that the air bag uses to fire. The logic may include factors like the extent of brake application, rate of deceleration and other factors that could also be useful in studying a crash.

G.M., which has had event data recorders on its light-duty vehicles since the 1998 model year, has used such data to defend itself in product liability suits.

The National Transportation Safety Board, an advisory agency, was interested for a different reason. A device that measures the "crash pulse," or strength of the impact, can be used to call for help, and the data recorder would bring a precision to accident investigation that they had only dreamed of.

But the presence of an event data recorder does not necessarily mean that the car will also provide automatic crash notification. And recording the data in the first place does not appeal to everyone, judging by the comments received by the safety agency. One from Caleb J. Grawley, who did not give an address, said he did not like the idea of Big Brother "over my shoulder."

The car companies were divided. Some complained that the list of data elements was too long. Most, though, said they perceived a benefit. DaimlerChrysler said that the federal government should institute a standard to forestall a blizzard of conflicting state regulations.

A California law, for instance, requires carmakers to disclose the existence of such devices and forbids access to the data without a court order or the owner's permission, unless it is for a safety study in which the information cannot be traced to the car.

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