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A Redesigned Airplane Black Box for Automobiles

My September column explored the black boxes that are standard equipment on most airplanes. The folks at the National Highway Traffic and Safety Administration (NHTSA) feel that a redesigned airplane black box could supply extremely valuable data after a car crash. So they have mandated that starting in 2013, new vehicles sold in the U.S. will have an enhanced *event data recorder* (EDR) that can monitor a car and driver's actions that caused an accident.

This NHTSA mandate calls for the development of an EDR for automobiles that has similar capabilities to the black boxes found on airplanes. The idea of an automobile black box is not entirely new. General Motors and other car manufacturers introduced basic EDRs starting in the 1990s to monitor and improve the performance of their vehicle's airbags. You'll find a basic information gathering unit on most vehicles that are on the road today.

The first generation mandated EDR black boxes will be able to upload valuable information to a computer if its vehicle is in an accident. The NHTSA goal is to have the car provide the telemetry necessary to explain if the accident was caused by vehicle equipment failure, driver error, driver impairment, bad weather, or an act of nature that was beyond human control.

Representatives of various car manufacturers have all made statements of support for this NHTSA mandate. Michael J. Robertson, GM's vice president for environment, energy, and safety policy, says, for example, "We are convinced that EDRs can help that process [gather the best data]. . . . We agree with those who called for mandatory installation of and greater use of the data from EDRs."

The NHTSA EDR research website indicates that the first mandated EDRs will record both technical information on vehicle performance and information on what the occupants of the vehicle are doing a short time before the crash occurs through the end of the crash event. Since they indicate that the EDR will not store hours of information, we can infer that vehicle and driver dynamics will constantly be written and then overwritten so that only the events that occur just before, during, and after the accident will show up for use in an accident investigation.

NHTSA documents indicate that

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the EDR will record pre-crash vehicle dynamics and driver dynamics right down to whether or not the occupants of the vehicle were wearing seatbelts. Specifically, this system will be onboard to collect data as to why the accident happened, provide the data to help improve future auto safety systems, and help the police determine why the accident occurred and who is at fault.

Black boxes for cars (EDRs) will be required in all 2013 vehicles.

Most drivers will like the fact that the new EDRs will have the ability to automatically call for help the instant a crash happens. The faster emergency vehicles get to the scene of a bad accident the greater the chance they have of saving lives. So starting in 2013, every car will have the ability to automatically make a cellular call for help and also the ability to provide the GPS location of the vehicle—without the car's owner having to pay a yearly surcharge for OnStar or similar services.

Most drivers will not like the fact that an EDR could bear witness against them by showing it was their actions that caused the accident. It is clear that starting in 2013, the NHTSA will have the ability to gather the data. It is not yet clear how easy it will be for lawyers to acquire this data for use in accident lawsuits.

I am sure that car manufacturers won't be happy that the EDRs they will have to install in the cars they manufacture could prove that an accident was caused by a manufacturing defect. This information, for example, could prove beyond a shadow of a doubt that a gas pedal throttle control, computer software glitch, or other system design failure was responsible for a specific type of accident. At this time, the new EDR mandate definitely sounds like a win-win situation for personal injury lawyers.

To remove some auto safety redundancy, the EDRs will also perform the diagnostics currently being performed by your vehicle's *on board diagnostics 2* (OBD2) system, which has been in cars since 1996. To perform the function of an OBD2, your car's EDR will need to be accessed by your service technician. It isn't clear how the information that it gathers will be compartmentalized to restrict a technician's access to only vehicle diagnostics.

The NHTSA mandate calls for the EDR to be able to gather information that can be used to improve car safety. Without a doubt, automobile manufacturers will want to do everything possible to find defects before they turn into lawsuits. They might go beyond basic government EDR requirements and install a system that can transmit system fatigue data in real time to help them initiate recalls before defects lead to accidents.

You can also expect high-end manufacturers to tie in their vehicles' EDR to cameras and other sixth-sense technologies they have already installed on their vehicles. Perhaps the joining of these systems will soon bring us closer to a car auto-pilot system.

Recalling the Facts

1. Do you feel that this technology could lead to the government becoming a back-seat occupant of your car? Why?

2. Student research: Do members of your community support this NHTSA mandate? Create a questionnaire that your class can use to survey and gather data. Analyze and present your findings.