

NHTSA Asked to Investigate More GM Air-Bag Failures

By Jeff Green and Jeff Plungis - Apr 7, 2014

[General Motors Co. \(GM\)](#), in the midst of recalling 2.6 million small cars for an ignition-switch flaw that can deactivate air bags, also may have an air-bag defect connected to deadly accidents in its Chevrolet Impala, a safety group said.

The Center for Auto Safety, in [a letter](#) to U.S. regulators today, cited a government petition by a former [GM](#) researcher who said he found a software fault that can misread a passenger's weight and render frontal air bags inoperative. The consultant, Donald Friedman, is asking the U.S. National Highway Traffic Safety Administration to open a defect investigation into 2003-2010 model-year Impalas.

There have been at least 143 fatalities in frontal crashes when an Impala's air bag didn't deploy, Friedman said, citing data collected from NHTSA's fatal-crash database. In 98 of those cases, occupants who died were wearing seat belts.

"This is a design defect in every GM vehicle with the flawed algorithm" in the software, said [Clarence Ditlow](#), executive director of the Washington-based Center for Auto Safety, which has been tracking recalls and defects since it was founded in 1970.

NHTSA's databases don't pinpoint the cause of air-bag failures, so it's not clear how many cases can be tied to a flawed algorithm, Ditlow said.

Spokesmen [Alan Adler](#) of GM and Nathan Naylor of NHTSA said they couldn't immediately comment.

Broader Questions

The flaw cited in the petition points to questions about whether there are broader flaws with sensors in air bags used throughout the [auto industry](#).

Last month, [Nissan Motor Co. \(7201\)](#) recalled 989,701 vehicles, included the 2014 Altima sedan, because software can incorrectly classify a passenger seat as empty, leading to air-bag failure in a crash. There also have been U.S. investigations or recalls over air-bag failures involving Ford Motor Co., Toyota Motor Co., Honda Motor Co., Volvo Cars and Chrysler Group LLC products in the past two years.

So-called advanced air bags introduced in the past decade to meet tougher U.S. regulations have saved numerous lives, while introducing technology so complex that engineers sometimes don't understand its nuances. NHTSA's acting administrator told Congress last week that the agency hasn't been able to figure out how air bags in Chevrolet Cobalts and Saturn Ions with the defective ignition switches could deactivate with the cars moving.

NHTSA is asking automakers for a broad amount of information about how air bags deploy with a loss of power, the agency's acting administrator, [David Friedman](#), said at congressional hearings on April 1 and April 2.

"We are looking across industry to make sure we fully understand the algorithms they use," the administrator said.

'Very Serious'

Donald Friedman's petition calls for NHTSA to open a probe into whether GM's electronic algorithms can inhibit air-bag deployment, and whether faulty data can be produced if passengers are bumped out of their seats.

Other automakers may be using the same parts as the Impala, he said.

"There's a very serious indication something is wrong," said Donald Friedman, who testified in court cases a decade ago about rollover accidents in which vehicle roofs were crushed and pressured NHTSA to adopt a stronger safety standard.

Friedman, a former GM researcher who helped transfer the company's technology to the Lunar Rover, has spent the past 30 years consulting on product-liability cases.

Texas Crash

He was hired by lawyers of a family of Aurora Martinez after a Mission Hidalgo County, [Texas](#), crash. On April 9, 2011, Martinez's 2008 Impala was struck on a highway by an SUV on the passenger side, where her husband, Roberto, was riding. The sedan went over a road barrier and struck another barrier head-on.

The passenger-side air bag never went off, Friedman said, and [Roberto Martinez](#) died of his injuries. The driver's-side air bag worked. While Aurora Martinez was severely injured, she survived.

Friedman obtained data from the car's data recorder that showed the passenger-side air bag didn't deploy because it registered Roberto Martinez as a small adult, even though he weighed 170 pounds, Friedman said. The car being briefly bounced and lifted reduced the sensor reading of his weight, Friedman said.

Friedman said NHTSA has been in touch with him about the air-bag petition and how he arrived at his conclusions. NHTSA has asked for data and pictures of the accident he studied.

Bag Technology

The first generation of air bags sometimes deployed with such force that almost 300 people were killed. Most of the victims were children or small adults sitting in the front seat.

With a mandate from NHTSA that took effect in September 2003, manufacturers recalibrated bags to deploy with less force. Weight sensors in the front seat turn the air bag off, with a lighted warning on the dashboard, if a child is there. The cars also detect whether passengers are wearing their seat belts, and deploy at lower force for unbelted occupants.

A 2010 study by the Arlington, Virginia-based Insurance Institute for Highway Safety compared fatality rates among cars with air-bag technology developed to pass a tougher NHTSA crash test with the previous generation of devices. It found more deaths in cars with the more updated designs, especially among passengers wearing seat belts.

One explanation was the devices' algorithms resulted in some air bags not deploying when they would have helped mitigate injury, the institute said in its "Status Report" newsletter.

"The newest air bags appear to provide suboptimal protections for drivers who buckle up," [Adrian Lund](#), the institute's president, said at the time. "It's a surprising finding."

A September 2013 analysis by NHTSA, using a broader sample of crash data than the 2010 IIHS study, showed no statistical difference in fatality rates between the two kinds of air bags.

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