

## Car Safety Gear Can Pose Threat To Rescuers

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Firefighters with Edgely Fire Co. in Bucks County, Pa., had just doused a small blaze in the floor of a 2002 Mercedes-Benz when Chief Kevin Flanagan heard two loud bangs, like shotgun blasts.

Flanagan ran from his truck back to the Mercedes and found one of his firefighters lying unconscious in the car's front seat and another -- Flanagan's 18-year-old son -- wandering around in a daze. The car's front air bags had deployed in their faces, knocking out 25-year-old Andy Taggart and leaving Ryan Flanagan with powder burns and temporary hearing loss.

The two men might have died from the blows if they hadn't been wearing helmets, Kevin Flanagan said.

The incident that night in April reflects a mounting problem for emergency workers nationwide: Automakers are packing cars and trucks with new devices to increase safety for motorists, such as air bags that can fire off twice or are located in doors or roofs, but the same equipment poses dangers to rescuers, who often aren't aware the hazards even exist.

"Pre-tensioning" seat belts, which use a charge of gunpowder to yank against an occupant during impact, can explode in the hands of a firefighter working to cut someone free. A retractable roll bar that springs up behind the seats in some convertibles can cause serious injuries to an unsuspecting paramedic. Metal detonators tucked into rooftops to inflate side-curtain air bags can go off like missiles if cut into by rescuers, firing into the cabin of the vehicle.

Cars today are "a loaded bomb waiting to try to hurt us as responders," said Lt. Mark McKinney, a vehicle rescue specialist with the Howard County Department of Fire and Rescue.

Emergency workers are used to dealing with the standard hazards of gas tanks and 12-volt batteries, but technology is changing so quickly that many cannot keep up with what's on the street, from cars with as many as a dozen airbags to gas-electric hybrid vehicles with batteries powerful enough to electrocute a person.

The National Highway Traffic Safety Administration is asking emergency workers to report injuries or safety concerns about air bags and other vehicle equipment and has asked the National Registry of Emergency Medical Technicians to collect the same information from its members nationwide. The agency is trying to "start putting together the puzzle of what's going on and what it would take to resolve the issue," said Jeff Michael, director of NHTSA's office of impaired driving and occupant protection.

Advocates say the government should require carmakers to keep rescuers informed, such as by putting labels on vehicles that list all potentially hazardous systems on board. NHTSA says it is considering such a step but needs more data.

David Long, a Minnesota nurse and emergency medical technician who tutors emergency workers nationwide under the nickname "The Airbag Detective," has been traveling the country compiling cases of post-crash injuries.

Among his 30 examples are an Arizona woman killed after a police officer accidentally set off an air bag while freeing her from a wrecked vehicle, a Minnesota firefighter hit in the head by an air bag while working on a vehicle fire and several auto mechanics struck by air bags when they tapped the wrong wire.

Today's cars are designed to save lives at the moment of impact, Long said. "After that, all bets are off. . . . There are no guarantees to the EMT, the cop, the firefighters trying to do the rescue. This is not even part of the . . . curriculum that rescue workers get in training."

The auto industry is becoming more aware of the issue and debating how to respond, said Bernard I. Robertson, senior vice president for engineering technologies and regulatory affairs at DaimlerChrysler AG. "It's a valid point, and the whole industry is starting to figure out what to do about that," he said. "We've already got labels plastered all over vehicles; at some point it just becomes a blur of labels. But there is a lot of interest in, how do you get better information out to first responders? It's sort of in its infancy."

Some fire and rescue departments take extra steps to stay current. Fairfax County, for instance, works with local car dealerships to learn of new automotive developments and how to deal with them.

But because there is no quick way to see what equipment is on a particular car -- a Jeep Grand Cherokee with side curtain airbags looks no different from one without them, for instance, but contains explosive detonators in the roof -- first responders must take valuable time at crash scenes to play detective, scanning each vehicle for clues to what potential booby traps are waiting to spring.

"The classes we're getting at conferences and what we read in magazines -- that's about it right now, that's about all that's available to us," said Ken Bouvier, vice president of the National Association of Emergency Medical Technicians and a paramedic for the city of New Orleans. "And in very small rural communities that maybe aren't fortunate to have exposure to new cars or to that kind of training, they could be running across these things and just having to deal with it."

It's not just safety devices that have emergency workers concerned. New fuel or engine technologies such as explosive propane gas tanks or powerful electric batteries also pose risks.

A Montgomery County firefighter, for instance, noticed something strange recently when he approached a wrecked car. Though the engine was shut off, the injured driver kept her foot on the brake. It turned out the car was still running on silent electric power and could have surged forward, hitting rescuers or bystanders.

The car was a Toyota Prius, a gasoline-electric hybrid vehicle that uses battery power at low speeds. "We had talked about it in training, and there it was," said Lt. Monte Fitch, a rescue instructor with the Montgomery County fire department who took that report from one of his trainees.

In addition to running silently, the battery in a hybrid packs enough voltage to kill a person -- more than 500 volts in the 2004 Prius, compared with 12 volts in the standard car battery. In the Prius, the battery is in an unexpected spot, behind the rear seat.

Both Toyota and Honda, the only companies currently selling hybrids, win high praise from rescue workers for marking high-voltage parts with attention-grabbing blaze orange and for engineering their cars with safety in mind. For instance, the powerful batteries are not grounded to the frame, so there is little danger someone could be electrocuted by simply touching a wrecked car.

Rescuers need to know quickly that they're dealing with a hybrid so they can take special precautions not to cut into a battery or its cables, though, and that's not always easy.

If the Prius's nameplate is crushed in a wreck, a rescuer rushing to cut off the roof to remove a passenger might identify the car as a hybrid by finding an air vent inside the driver's side support pillar. But firefighters complain that they don't often get access to scrapped late-model cars to practice spotting such clues.

Holmatro Inc., a Maryland-based manufacturer of hydraulic rescue equipment, tried to address that problem in 2000 by publishing a "Rescuer's Guide to Vehicle Safety Systems" reference book, which it updates periodically. So far the company has sold the 600-page, \$138 manual to about 3,000 of some 35,000 fire departments nationwide, marketing manager Fran Dunigan said. Now the company is developing a CD-ROM version that firefighters could use to quickly look up details about vehicles at crash sites.

NHTSA is the government agency that tests vehicles for crash safety, but it doesn't look at what can happen to rescuers or occupants in the aftermath of a crash.

The agency has created training videos for emergency workers that show safe methods for dealing with some types of crashed vehicles, but they are not regularly updated. The most recent video about alternative-fuel vehicles, for instance, was made in 1996, when gas-electric hybrids weren't even on the market.

The Society of Automotive Engineers, which sets out industry guidelines for auto designs, considered putting standardized labels about air-bag systems on new cars and trucks but dropped the matter a year ago after failing to reach consensus, SAE spokesman Keith Hancock said. "Given that SAE's committees routinely deal with safety issues, it's entirely possible this issue could again be on the agenda," he said.

The label was proposed to SAE by Ron Moore, a fire battalion chief from McKinney, Tex., and nationally recognized expert on vehicle rescues. He said automakers are reluctant to take on the added labeling expense without a government mandate.

"It's maybe nickels or dimes per car, but what a difference it would make to us as responders. . . . It would be immediately accessible information that's lifesaving," Moore said.

Flanagan, the Pennsylvania fire chief, said some kind of warning would have been invaluable to his men that night in April. He said he had no idea that air bags can deploy long after a crash if the electrical system is damaged, though the cause of the incident that injured his men is still under investigation.

"We don't need any extra problems to deal with when we get there, and really that's what technology is bringing us right now," Flanagan said. "All these things are great in their place and probably very good at protecting the driver and passenger, but they're something that can cause injury to a firefighter. . . . I think warnings should be required by the government."

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