

Cutting-Edge Solution

By Eric Mayne

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DaimlerChrysler AG's Mercedes-Benz brand is on the cutting edge of occupant safety. Literally.

The all-new '07 S-Class sedan features markings to show rescue workers where it's safe to cut when removing a vehicle's roof — one of the first actions taken to free a crash victim trapped in a wreck.

But this operation can be hazardous.

Rescue workers cut roof pillars that often house airbag inflators. If an airbag does not deploy during a crash, the unused inflator poses an explosion risk from cutting tools such as the Jaws of Life.

"In some tests, shrapnel has flown from the vehicle," says Mark Uttley, a firefighter in Windsor, Ont., Canada who teaches rescue techniques.

Why not simply avoid the inflators? Easier said than done, experts say.

Because vehicle design differs from manufacturer to manufacturer, model to model and sometimes year to year, rescue workers have difficulty knowing the precise locations of these devices. And the task of locating them can waste valuable time.

"When it comes to saving someone's life, seconds count," warns Pete Methner, education chairman of the Transportation Emergency Rescue Committee's Canadian arm.

An international organization, TERC advises firefighters, paramedics and police officers worldwide about safe rescue techniques. The currently recommended practice for removing a roof calls for locating airbag inflators by manually stripping out the vehicle's interior trim.

This can delay a victim's transfer to a hospital.

"This simple marking will cut down the extrication time from having to strip the inner trim to recognize the compressed air cylinder," says Methner, a firefighter in Niagara Falls, Ont., Canada "There is no second-guessing. I commend (Mercedes) for taking this step forward and assisting rescuers in making our job safer."

Other brands, such as Volvo, use graphics to indicate the presence of airbag inflators. But Methner and Uttley say Mercedes is the first auto maker to pinpoint where cutting tools can be safely used.

"If we could get other manufacturers on board with this technology, then the rescuers would be safer; do

a quicker job of making access for the patient; and most importantly, provide additional safety," Uttley says.

Auto makers have begun to share design details with rescue workers, but only sporadically.

This is not adequate to minimize the explosion risk facing rescue workers and accident victims, especially considering an increasing number of vehicles that feature growing numbers of airbags.

More than 1.4 million '05-model domestic cars featured side-curtain airbags, according to Ward's data. Just two years earlier, there were none.

And nearly 2 million '05-model domestic cars were equipped with side airbags, an increase of 54% compared with the 1.3 million-unit total from model-year '03. "With today's technological advances (in restraint systems), rescue workers need to be educated more now than ever," says Angelina Errico, a Connecticut-based engineer who has studied the challenges facing rescue workers.

Rescue workers often receive no more design information than can be found in ownership manuals.

"Automotive manufacturers should prioritize that rescue workers receive more information than the consumer," says Errico, who will present her findings at the Society of Automotive Engineers' World Congress in Detroit in April.

As for Mercedes, the decision to address the issue stems from its "holistic" approach to occupant safety, a spokesman says, noting technologies such as Pre-Safe, which automatically tightens an occupant's seatbelt in aggressive braking situations, and DISTRONIC, an advanced adaptive speed control system.

"The rescue industry would be forever grateful if all manufacturers were to jump on board," Methner says.

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