

Understanding Safety - European Style

By Pete Melthner

In this article, I would like to discuss some of the safety features that Mercedes Benz has incorporated into their newer vehicles. In many ways Mercedes Benz leads the industry in building stronger and safer vehicles.

Motor vehicle manufacturers have always produced vehicles with varying levels of safety features. For instance, some manufacturers, until recently, have chosen to make side impact air bags an option while other manufacturers have been non-negotiable in this regard and made air bags a standard feature for some time.

Recently, however, owner expectations about vehicle safety features have resulted in a consumer demand for superior levels of both active and passive occupant protection devices.

In the fire service, our first priority is (as it has always been) to save lives. As rescuers this requires that we respond quickly; interpret the nature of the collision and the deformation of the affected vehicles; decide on an appropriate course of action; and then extricate the occupant(s) of the vehicle(s) using the most effective tools and techniques. And did I mention that this all has to be done in a measure of seconds?

Given the many different types of accidents and automobile model configurations, one has to wonder whether it's possible to know the intricacies of every vehicle, light truck, and van on the road today. The answer is no, it is not possible, but, it is possible to use a good understanding of the evolution of safety technology as a starting point to successful (and safe) extrication maneuvers.



While observing auto extrication competitions across Canada and the United States, both as a competitor and as a fan, I often hear rescuers refer to Mercedes Benz as a leader in motor vehicle safety features. Mercedes Benz has dedicated considerable cost, time, and effort to safety programs development, and it stands as an example of leadership in passenger (and even rescuer) care.

The New Mercedes

Mercedes Benz has increased its use of magnesium for reinforcement structures in the body of its vehicles, primarily within the inner door skins of the S-Class Coupe and the SL-Class Roadster models. The increased presence of magnesium not only makes it tougher for us to use our hydraulic spreaders and cutters, but also makes it more difficult during vehicle fires. In the event of a fire occurring and the pyrotechnic devices not already deploying, they could in fact be triggered by the increased temperatures of the burning metal, especially where it reaches the range of 320 to 356 degrees C. On other vehicle makes and models, I have seen passenger side frontal air bags deploy into the rear seating area.

A particularly brilliant idea used by Mercedes Benz is the "Central Locking Emergency Opening" release which, in the event of an accident, can unlock the doors on a pre-set time delay. If the accident is severe enough, and airbags have also deployed or a seatbelt tensioning device has deployed, the hazard warning system automatically activates. This is an incredibly helpful feature to rescuers searching for a vehicle that has gone off the road in a low light area and far enough from the roadway that it might otherwise not be visible.

Batteries

Location of batteries: The batteries in Mercedes-Benz passenger car model series are located as follows if equipped:

VEHICLE MODEL BATTERY LOCATIONS

Engine Compartment	Right-Fron Passenger Compartment	Under Front Passenger Seat	Under Left- or Right-Rear Seat	Trunk
M-Class (model 163)	F-Cell	M-Class (model 164) [2 - an auxiliary battery to the rt. of main battery]	E-Class (model 210)	SLR McLaren (model 199) [2 in trunk]
SLK-Class (models 170 and 171)	R-Class (model 251) [under the seat]*	R-Class (model 251)	G-Class (model 463) - [between front and rear seat]	SL-Class (model 129 and 230)
C-Class (model 203)				E-Class (model 211)
CLK-Class (model 208 and 209)				CL-Class (model 215)
E-Class (model 211)*				CLS-Class (model 219)
CLS-Class (model 219)*				S-Class (model 220)
SL-Class (model 230)**				

* indicates an auxiliary battery ** indicates a starter battery

On the SLR McLaren (model 199) both batteries are located in the trunk. All current models are fitted with a prefuse which breaks the connection between the alternator and the positive battery terminal in the event of a short circuit. SLK-Class vehicles (model 170) with the Kompressor (super-charged) engines are equipped with a cutoff relay (alternator/battery) or a prefuse. The cutoff relay interrupts the connection between the alternator and the positive battery terminal when a crash activates an air bag or the seat belt emergency tensioning devices. This helps to prevent possible short circuits caused by deformed vehicle parts. The cutoff relay is activated on "Ignition ON" and is triggered directly by the air bag control unit.



With as many as 12 airbags potentially located within the vehicle, there is a risk presented by un-deployed airbags activating unexpectedly - a good reason to consider disconnecting the battery(ies) as part of scene survey. Care should be taken to check for the possibility of two batteries, and the potential for the airbag system to remain active even where one battery is disconnected. This requirement is contained within the Mercedes Benz Emergency Response Guide. Both batteries must be disconnected on the following Mercedes Benz models: E-Class (model 211), CLS-Class (model 219), SL-Class (model 230), M-Class (model 164), R-Class (model 251), and the SLR-McLaren. If you notice that there are un-deployed airbags within the vehicle and the batteries have not been disconnected, do not perform any cutting maneuvers near the un-deployed airbags. You could interfere with the wiring harness sufficiently to cause airbag deployment. This is also discussed in the Mercedes Benz Emergency Response Guide. Cutting through the steering wheel ring or spoke will not deploy an airbag.

When performing a total roof removal or a roof flap in

Continued on page 20

the hottest deals in gas detection!

The M40 Multi-Gas and the T40 Rattler™ gas monitors provide Industrial Scientific's superior reliability at very competitive prices. These feature-packed units are ideal for protecting personnel in the fire/emergency response, oil/petroleum, drilling, wastewater, pulp/paper and manufacturing fields.

M40 Multi-Gas

- ▶ CSA Approved
- ▶ Detects up to four gases
- ▶ Weighs just 8.6 oz.
- ▶ 18-hour run time
- ▶ Std. datalogging
- ▶ Std. vibrating alarm
- ▶ Std. visual/audible alarms
- ▶ Std. peak, STEL and TWA
- ▶ Optional sampling pump



T40 Rattler™

- ▶ Maintenance-free
- ▶ Single gas - H₂S or CO
- ▶ Std. vibrating alarm
- ▶ Std. visual/audible alarms
- ▶ Push-button operation
- ▶ Continuous monitoring
- ▶ Replaceable battery
- ▶ Weighs only 98 grams

INDUSTRIAL SCIENTIFIC CORPORATION

www.indsci.com

1-877-746-1266 (toll-free product info)

