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# In the Automotive News

## Auto Makers Take Crash Testing Seriously

By Arthur Croft, DC, MS, MPH, FACO

In the early 1990s, the New Car Assessment Program (NCAP) went into action and the National Highway Traffic Safety Administration began voluntary crash testing of new cars in offset collisions. Auto makers, who had previously designed their cars to withstand the less rigorous full-width Federal Motor Vehicle Safety Standards crashes at slightly lower speeds, gradually began to take notice. The resulting NCAP ratings, which are graded with stars (five is the best rating), are frequently used in promotional pieces. Another group that crashes cars in more realistic and demanding scenarios is the Insurance Institute for Highway Safety (IIHS).

Both Volkswagen and Toyota have made great strides in this area of crashworthiness. They and other manufacturers are now routinely crashing their vehicles into offset deformable barriers: the most common configuration is a 40 percent contact with the vehicle's front end. All of this has served to greatly increase the car's crashworthiness, which, after all, was the point in the first place. A clever trick nevertheless, since the more difficult to pass NCAP and IIHS tests are currently not required by law.

The 1995 VW Passat scored poorly in earlier crash tests, but the 1998 model earned the top institute rating. Even the new Beetle ranks high on the list, with good performance in low-speed, offset and full frontal crashes.

Toyota, for its part, has also raised the bar, transmogrifying its previously poorly rated 1996 Previa minivan into the new 1998 Sienna minivan, which ranked the highest in IIHS crash tests. The 1997 Camry was awarded the "best pick" in its class as well.

Having said all that, I must remind some that these ratings can be somewhat misleading for real world crash dangers and overall vehicle crashworthiness. The crash tests pit only the car tested against either a rigid or

deformable barrier, not against other vehicles.

Crashing a small car into a barrier is roughly the equivalent to crashing it into another small car -- not a Ford Expedition. When two vehicles of different mass collide, the smaller of the two is nearly always more seriously damaged. Occupants of vehicles colliding with other vehicles 50 more massive (and that describes, for example, a subcompact crashing into a midsized car) are 3-6 times more likely to die than the occupants of the larger vehicle (the numerical variance is related to different model years -- a reflection of the variations in vehicle design which have been influenced by many factors, such as fuel economy).

The potential for injury is probably similar. The reason? Larger cars have greater potential crush distance. This gives them more time to crash and allows a greater "ride-down" for the occupants. Smaller cars are essentially stiffer than larger cars. Acceleration (or deceleration) is equal to the change of velocity divided by the change in time: increase the duration and you decrease the acceleration. And decreasing the acceleration (or deceleration) often means the difference between injury or no injury, or quite literally between life and death.

**Roadkill Stew**

Until recently, if you ran down a deer or other edible critter in West Virginia, you had to wait until the authorities got to the scene and made their report. Having done that, you could take your victim home for dinner (hey, if God didn't want us to eat animals, He wouldn't have made them out of meat).

Unfortunately, even roadkill can spoil by the time the troopers arrive. But there is good news for the carnivorous hunter-drivers of West Virginia. The state senate recently approved a bill allowing motorists to take their trophies home fresh from the scene, sans a police report. This saves cleanup costs, say the bill's proponents. Some of the state legislators, however, objected to the bill because they didn't want it going on their voting record that they passed a bill encouraging people to eat roadkill. (This could give a whole new meaning to the phrase "grilled" steak.)

**Low-Speed Buggy Rear-Ender**

It was recently reported that a police cruiser in Ontario, Canada was rear-ended by a buggy driven by a Mennonite man who claimed that his vision was temporarily obscured during a brief downpour -- not from the driving rain, mind you, but by the umbrella he was holding. (I'm a city boy myself, raised on the rich and rolling LA pavement, but I have ridden a horse or two in my time. They do usually look where you steer

them, don’t they?)

**MacGyvers They Are Not**

Here are a couple of candidates for this year’s Darwin award (OK, actually, they are not eligible for it because you technically have to perish in the process of some absurdly stupid act and this considerately remove your errant genes from the existing human gene pool).

It was reported that a couple of Arkansas men were driving their pickup truck when a fuse blew. Taking a tip gleaned from something they had seen in the February issue of Road and Track magazine, they removed the old fuse and replaced it with a .22 cartridge (that’s a bullet for you non-shooters). Sure enough, it overheated and discharged, striking the driver in the groin (yeow!), causing the truck to crash and (further) injuring both men. The passenger was quoted later as saying, "Good thing we weren’t on a bridge when (the driver) shot his (genitalia) off or we might have been dead." (Also a good thing they weren’t out shooting shotguns that day.)

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