

European Pedestrian Crash Standards Will Make Global Changes in Car Design Inevitable

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Imagine a Jag without the company's signature image leaping off the front hood or an SUV outfitted with exterior airbags. In Europe, that metal cat is already extinct and those airbags are on their way in, under new European Union pedestrian impact regulations that will take effect in October. Although American automakers are not embracing these changes, manufacturers and suppliers say that the global drive to increase pedestrian safety coupled with the global nature of the auto industry will eventually affect cars sold in the U.S., possibly forcing changes to auto design, price, styles and fuel efficiency.

The focus of the new EU standards has been on safer front-end design to minimize injuries to the legs and head in 25 mph crashes. They will require passenger cars and light vans to pass tests involving the A-pillar, bumper, the hood's leading edge and windshield to determine if they protect adults and children from leg and head injuries in frontal impact accidents. Automakers will also be required to install flexible bumpers and hoods that crumple and to add 8 inches of space between the exterior structure and the under-hood structure from the front bumper to the windshield to better disperse the impact energy of a person hitting the front end. More stringent rules are expected to be phased in beginning in 2010, when the number of tests doubles to four – two for leg injuries and two for head injuries. The changes are expected to save 2,000 lives annually.

Japan is expected to impose similar requirements in 2007.

Exactly how cars should be designed to pass these new crash tests, and at what cost has been a matter of contention among automakers and suppliers. Companies are considering everything from new front end designs with more rounded corners to the addition of exterior devices that sense an obstacle in a vehicle's path.

For the last five years, the European Union has been exploring pedestrian safety measures under a broader goal to reduce traffic deaths by 50 percent in 2010. In early 2000, with new legislation imminent, European automakers proposed to voluntarily remove the rigid "bull bars" often used on SUVs and trucks as well as hood ornaments that can act as spears in pedestrian accidents. They will also proposed to include active safety measures on new models such as daytime running lights and anti-lock braking systems phased in over the 2002 and 2003 model years. In 2003, with much debate over the effectiveness of the voluntary measures and the efficacy of proposed crash tests, the European Commission issued a directive.

The pressure to reduce pedestrian fatalities is greater abroad, because there are many more such deaths than in the U.S. In the European Union countries, more than 200,000 pedestrians and cyclists are injured annually and more than 9,000 die--accounting for 20 percent of all traffic fatalities. According to a European Transport Safety Council report, most of the victims were children and elderly persons struck by the car's front end in low-speed crashes in urban and resident areas. In Japan, the pedestrian fatality rate is 30 percent.

In contrast, pedestrian traffic fatalities only account for 11 percent of the traffic deaths in the U.S. According to a March 2004 study by the NHTSA's National Center for Statistics and Analysis, pedestrian deaths have fallen from a high of 8,069 in 1979 to 4,808 in 2002. The U.S. does not tests vehicles for pedestrian safety and the NHTSA dropped efforts to impose pedestrian safety standards on U.S. automakers more than a decade ago.

According to some news reports, American companies have been cool to the idea of applying EU pedestrian standards to cars for the U.S. market, arguing that the need is less pressing in America and that consumers might react negatively to price and appearance changes. Eron Shosteck, director of communications for the Alliance of Automobile Manufacturers says that American automakers are committed to engineering more safety features into each new model year, but with limited resources and currently some 68 NHTSA rulemakings to implement, automakers must prioritize these improvements. Manufacturers' current focus on crash avoidance technology will improve pedestrian safety. Nonetheless, it is expected that these new EU requirements will eventually influence the design of American models.

"It's going to come," says Shosteck. "It just can't happen over night."

While American carmakers have moved the issue to the back burner, foreign manufacturers, auto suppliers and consumer groups have been gearing up for the changes. Honda has led the way since the 2001 model year, redesigning the Civic and other models to include windshield wiper arms that break on impact and an extra 3-4 inches of space under the hood, so sheetmetal – not the engine block – absorbs most of the impact. The company is also testing radar systems that could detect an obstacle and automatically brake the car.

Last December, Flexpoint Sensor Systems, a Utah-based company that announced strong demand for its Bend Sensor ® Pedestrian Impact Detection System, which measures impact on the vehicle's front bumper and could be coupled with a countermeasure such as raising the hood or deploying an airbag. Airbag supplier Autoliv Inc. is working with several manufacturers on an exterior airbag that deploys near the windshield base to reduce head injuries. And Siemens Restraint Systems, a subsidiary of Siemens VDO Automotive, announced that it had been exploring a variety of strategies ranging from hood and engine compartment alterations to move components such as the battery out of the pedestrian impact area to active pedestrian accident protection systems that might employ pyrotechnics, hydraulics, electric motors or springs.

With the new standards seven months from implementation, consumer groups were already pushing automakers to improve their pedestrian safety records. In March, the European New Car Assessment Programme released crash test results rating, among other measures, cars' pedestrian-friendliness. *Which?*, a UK consumer publication released the results and chided automakers who fared poorly, calling their cars "potential death threats to pedestrians despite the fact it's cheap and easy for manufacturers to make cars more pedestrian friendly."