

changed so that the impact is on the side of the vehicle where the fuel filler pipe or filler neck is located. VW argued that impacting the side of the vehicle where the fuel filler pipe or filler neck is located would represent the worst case condition and establish a more objective requirement for enforcement purposes.

VW also commented that in order to assure compliance with the higher speed rear impact test, the vehicle rear end structure would have to be made stiffer, particularly in smaller cars. VW stated that this would tend to increase the potential for whiplash type injuries in lower speed crashes. VW recommended that NHTSA address this issue before issuing a final rule.

Ford commented that it has conducted voluntary, in-house 80 km/h vehicle-to-vehicle rear impact crash tests to evaluate fuel system integrity since the mid-1980s. Ford supported the agency's proposed test upgrade, stating, "Ford believes this test can provide a robust evaluation of a fuel system's integrity."

Syson-Hille commented that other vehicle manufacturers, such as GM, began conducting 80 km/h vehicle-to-vehicle rear impact crash tests in the 1980s, and that Mercedes-Benz marketing materials note that its vehicles have been designed to provide fuel system integrity in offset rear impact crashes since the early 1980s.

The Insurance Institute for Highway Safety (IIHS), Advocates for Highway and Auto Safety (Advocates), and American Automotive Design (AAD), urged NHTSA to require the use of a 4,000-pound rigid barrier, instead of the 3,015-pound MDB. IIHS and Advocates urged this based on their view that the Standard No. 214 barrier does not reflect the characteristics of pickup trucks and sport utility vehicles (SUV) and thus may not reproduce the patterns or extent of deformation seen when those types of vehicles strike cars in the side or rear.

#### B. Side Impact Test Procedure Upgrade

None of the commenters opposed the proposed side impact test procedure upgrade.

DC recommended that, as in the proposed rear impact test procedure, the agency specify that the MDB be lowered 50 mm (2 inches) in the proposed side impact test procedure. DC stated that data indicate that pre-impact braking occurs in 54 percent of side impacts.

#### C. Door System Integrity

Vehicle manufacturers generally opposed adding a post-crash test door operability requirement to Standard No.

206. The Alliance and GM agreed with and supported the logic regarding a post-crash test door operability requirement. However, the Alliance and GM stated that Standard No. 206 addresses component level performance, while a post-crash test door operability requirement would address vehicle level performance. The Alliance stated that adding such a requirement to Standard No. 206 would necessitate the addition of vehicle crash test requirements to the standard as well. The Alliance also stated,

Prior to proposing such requirements in future rulemakings, NHTSA would need to develop and define an objective set of meaningful and measurable requirements pertaining to the applicability of doors (front rear, sliding, etc.), number of doors (per row, per vehicle, etc.), and methodology by which operability would be assessed (without the use of tools is an insufficient measure, as NHTSA has concluded in past rulemaking efforts).

GM stated that such a requirement would be more appropriate if it were added to crash tests that are already required for other safety standards, such as Standard No. 208, *Occupant crash protection*, Standard No. 214, *Side impact protection*, or Standard No. 301. GM noted that it currently performs door operability evaluations following most barrier tests.<sup>18</sup> GM argued that NHTSA should develop meaningful, appropriate, objective, and repeatable requirements for post-crash test door operability after further research and through separate rulemaking.

DC argued that NHTSA has not provided sufficient evidence to demonstrate the need for adding a post-crash test door operability requirement to Standard No. 206. DC recommended that NHTSA conduct research to determine such a requirement's real world benefits, feasibility, and effects on vehicle design, cost, and weight. DC suggested that if NHTSA persists in such a rulemaking, the agency require only one operable door per vehicle.

Advocates supported adding a post-crash test door operability requirement to Standard No. 206. Advocates stated:

Advocates believes that ensuring that doors can be opened after crashes is not a safety problem involving only fire-related collisions. It is a major safety issue long overdue for agency regulatory attention. Many thousands of crashes every year result in vehicle deformation preventing door opening. In these crashes, numerous people

are seriously injured whose lives could be saved or the severity of their injuries substantially reduced if rescue squads could quickly reach them without recourse either to the use of Jaws of Life or to being forced to extricate a seriously injured person through a window or windshield, a common practice.

Syson-Hille also supported a post-crash test door operability requirement. Syson-Hille recommended that the agency require at least one door on two-door vehicles and three doors on four-door vehicles to be operable after a crash test.

#### D. Lead Time

##### 1. Rear Impact Test Upgrade

The vehicle manufacturers all supported the three-year lead time proposed in the NPRM for the rear impact test upgrade, but recommended that the agency add a phase-in after that period. The Alliance recommended a four-year phase-in with an implementation schedule of 25 percent compliance the first year, 40 percent the second year, 70 percent the third year, and 100 percent the fourth year. The Alliance also recommended that the agency grant carry forward credits for early compliance.

The Alliance argued that a phase-in is necessary because the Alliance considered this to be a "major rulemaking, particularly in response to the substantially increased impact energy of the high speed rear offset impact testing proposed." The Alliance stated:

Significant vehicle redesign and retooling for production will likely be required in a number of vehicles. The small number of tests conducted by the NHTSA, often with a sample size of one vehicle, simply is inadequate to identify whether vehicle changes are required or for any manufacturer to assure compliance for all its vehicles.

DC supported the Alliance's recommended phase-in schedule. DC argued that such a phase-in would "allow the efficient phasing out of older models designed to the current requirements with replacements that are thoroughly designed, constructed and tested to meet the more stringent requirements without very costly and disruptive mid cycle manufacturing changes."

Subaru recommended a three-year full phase-in, with complete compliance after the third year. Honda suggested a four-year phase-in with an implementation schedule of 10 percent, 30 percent, 70 percent, and 100 percent. Porsche supported the Alliance's recommended lead time but requested that the agency provide small volume manufacturers the option of coming into compliance at the 100 percent level in

<sup>18</sup> GM stated, "These evaluations start by first actuating the door latch. Assuming the door unlatches a nominal force of approximately 100 pounds is applied to open the door using a hook-type dial gage. A measurement of how far the door could be opened is made and recorded."