

by NAMIC

Thirty-four vehicles earn the Insurance Institute for Highway Safety's TOP SAFETY PICK award for 2008. The award recognizes vehicles that do the best job of protecting people in front, side, and rear crashes based on ratings in the Institute's tests. Winners also have to be equipped with electronic stability control (ESC), which research shows can significantly reduce the risk of crashing.

Compared with last year, automakers have more than doubled the number of vehicles that meet criteria for TOP SAFETY PICK. At the beginning of the 2007 model year, 13 models qualified, but as manufacturers have made changes and introduced new and safer vehicle designs, 10 additional vehicles qualified during the year. Now another 11 vehicles are being added to the list for 2008. Designating winners based on the tests makes it easier for consumers to identify vehicles that afford the best overall protection without sifting through multiple sets of comparative crash test results.

"For 2008, consumers have the widest selection of vehicles they've ever had that afford the best protection in the most common kinds of crashes," says Institute president Adrian Lund. Front and side impacts are the most common kinds of fatal crashes, killing nearly 25,000 of the 31,000 vehicle occupants who died in 2005. Rear-end crashes usually aren't fatal, but they result in a large proportion of the injuries. About 60 percent of insurance injury claims in 2002 reported minor neck sprains and strains.

All current car and minivan models, small and midsize SUVs, and small and large pickup trucks are eligible to win TOP SAFETY PICK. Eight vehicles from Ford and its subsidiary Volvo make the list of winners for 2008. Seven winners are from Honda and its subsidiary Acura.

Winners have features that help avoid crashes: The Institute added a crash prevention criterion last year to earn TOP SAFETY PICK. Winning vehicles have to be equipped with ESC, which can help drivers avoid crashes altogether. ESC is a control system comprised of sensors and a microcomputer that continuously monitors how well a vehicle responds to a driver's steering input and selectively applies the vehicle brakes and modulates engine power to keep the vehicle traveling along the path indicated by the steering wheel position. This technology helps prevent sideways skidding and loss of control that can lead to rollovers. ESC can help drivers maintain control during emergency maneuvers when their vehicles otherwise might spin out.

"Vehicles should be designed to provide good occupant protection when crashes occur, but now with ESC we have the possibility of preventing many crashes altogether," Lund says. "If all vehicles were equipped with ESC, as many as 10,000 fatal crashes could be avoided each year." Institute research indicates that ESC reduces the risk of fatal single-vehicle crashes by 56 percent and fatal multiple-vehicle crashes by 32 percent. Many single-vehicle crashes involve rolling over, and ESC reduces the risk of fatal single-vehicle rollovers by 80 percent (SUVs) and 77 percent (cars).

For first time pickups are eligible: Pickup trucks haven't been eligible to win TOP SAFETY PICK until now because the Institute hadn't begun side testing them. The Toyota Tundra is first to qualify. Pickups aren't as likely as cars or SUVs to have side airbags or ESC, but Toyota has made these features standard in the Tundra. "Pickups are among the top selling vehicles in the United States," Lund points out. "They're also more likely than in the past to be used as family vehicles, so equipping them with the latest safety features is important."

Protection in rear impacts improves: Crash tests have driven major improvements in the designs of all kinds and sizes of passenger vehicles. The Institute began frontal crash tests for consumer information in 1995. Side tests were added in 2003, and rear tests in 2004. Most vehicles now earn good ratings in the frontal test, but significant differences are still apparent in vehicle performance in side and rear tests.

Some manufacturers have been working to improve the ratings of their vehicles in the rear test. For example, the seat/head restraints in the Honda Accord, Element, and Odyssey as well as the BMW X3 and X5 are rated good compared with previous designs that were rated marginal or poor. Audi improved the design of seat/head restraints in the A3 from acceptable to good. Another 23 vehicles would have won 2008 awards if they had good seat/head restraint designs. Toyota could have claimed 10 more awards, including 3 for Lexus models. Nissan and Volkswagen could have picked up 4 awards apiece.

Another area where safety is improving is occupant protection in side impacts. More 2008 model vehicles include as standard equipment side airbags designed to protect people's heads. The Saturn was side tested twice. In the first test, the side curtain airbag didn't deploy properly, and the head of the dummy positioned in

the back seat was struck by the sill of the window in the door. This impact didn't produce high head injury measures, but head protection was inadequate. In response, General Motors redesigned the side curtain airbag to ensure more rapid inflation and better coverage of the airbag next to the dummy's head. In the second test, the fix was successful, and the VUE's side rating improved from acceptable to good. TOP SAFETY PICK applies to VUEs built after December 2007.

Each year, the Institute offers to test TOP SAFETY PICK candidates early in the model year. The policy is for manufacturers to reimburse the Institute for the cost of vehicles if the tests aren't part of the group's regular schedule. TOP SAFETY PICK is presented by vehicle size because size and weight are closely related, and both influence how well occupants will be protected in serious crashes. Larger, heavier vehicles generally afford better protection in crashes than smaller, lighter ones.

How the vehicles are evaluated: The Institute's frontal crashworthiness evaluations are based on results of frontal offset crash tests at 40 mph. Each vehicle's overall evaluation is based on measurements of intrusion into the occupant compartment, injury measures from a Hybrid III dummy in the driver's seat, and analysis of slow-motion film to assess how well the restraint system controlled dummy movement during the test.

Each vehicle's overall side evaluation is based on performance in a crash test in which the side of the vehicle is struck by a barrier moving at 31 mph that represents the front end of a pickup or SUV. Ratings reflect injury measures recorded on two instrumented SID-II's dummies, assessment of head protection countermeasures, and the vehicle's structural performance during the impact. Injury measures obtained from the two dummies – one in the driver's seat and the other in the back seat behind the driver – are used to determine the likelihood that a driver and/or passenger in a real-world crash would have sustained serious injury. The movements and contacts of the dummies' heads during the crash also are evaluated. Structural performance is based on measurements indicating the amount of B-pillar intrusion into the occupant compartment.

Rear crash protection is rated according to a two-step procedure. Starting points for the ratings are measurements of head restraint geometry – the height of a restraint and its horizontal distance behind the back of the head of an average-size man. Seats with good or acceptable restraint geometry are tested dynamically using a dummy that measures forces on the neck. This test simulates a collision in which a stationary vehicle is struck in the rear at 20 mph. Seats without good or acceptable geometry are rated poor overall because they can't be positioned to protect many people

11 new winners for 2008

Midsized cars

Audi A3

Honda Accord

Small car

Subaru Impreza equipped with optional electronic stability control

Minivan

Honda Odyssey

Midsized SUVs

BMW X3

BMW X5

Hyundai Veracruz built after August 2007

Saturn VUE built after December 2007

Toyota Highlander

Small SUV

Honda Element

Large pickup

Toyota Tundra

All 34 winners

Large cars

Audi A6

Ford Taurus with optional electronic stability control

Mercury Sable with optional electronic stability control

Volvo S80

Midsized cars

Audi A3, A4

Honda Accord

Saab 9-3

Subaru Legacy with optional electronic stability control

Midsized convertibles

Saab 9-3

Volvo C70

Small car

Subaru Impreza with optional electronic stability control

Minivans

Honda Odyssey

Hyundai Entourage

Kia Sedona

Midsized SUVs

Acura MDX, RDX

BMW X3, X5

Ford Edge, Taurus X

Honda Pilot

Hyundai Santa Fe

Hyundai Veracruz built after August 2007

Lincoln MKX

Mercedes M class

Saturn VUE built after December 2007

Subaru Tribeca

Toyota Highlander

Volvo XC90

Small SUVs

Honda CR-V, Element

Subaru Forester with optional electronic stability control

Large pickup

Toyota Tundra

Also vans

Twenty-three vehicles earn good ratings in front and side crash tests. They have ESC, standard or optional. They would be 2008 TOP SAFETY PICK winners if their seat/head restraints also earned good ratings:

Acura RL, TL

BMW 3 series

Chrysler Sebring convertible

Infiniti M35/M45

Kia Amanti

Lexus IS 250/350, ES 350, GS 350/460

Nissan Pathfinder, Xterra both with optional side airbags

Nissan Quest

Toyota Avalon, Camry, FJ Cruiser, 4Runner, Prius, RAV4, and Sienna

Volkswagen Eos, Jetta, Passat, Rabbit

Source: Insurance Institute for Highway Safety

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Number of Vehicles Earning the TOP SAFETY PICK Award Increases in 2008; Pickups Eligible for First Time by NAMIC