

[REDACTED]

From: Test, Crash <NHTSA>
Sent: Friday, March 21, 2008 9:53 AM
To: [REDACTED]
Subject: FW: Side Curtain Air Bags (Did Not Deploy)

CL-10223891-7043

2008 MAR 27 AM 11: 29

Hello [REDACTED],

I responded to this consumer's email below and they responded back to me with the following feedback. Could you please see to it that someone helps answer this consumers email question at there earliest convenience?

Thank you very much,
[REDACTED]

From: [REDACTED]
Sent: Thursday, March 20, 2008 9:08 PM
To: Test, Crash <NHTSA>
Subject: RE: Side Curtain Air Bags

[REDACTED]

Thank you very much for your time and the valuable information that you provided. I was asking the below questions because I just purchased a 2008 Dodge Grand Caravan. My wife was involved in a side impact collision in which a vehicle ran a red light and collided into the front left fender panel of our vehicle. No airbags deployed and my wife received serious injuries. We contacted Chrysler to conduct an investigation and they are claiming that their vehicle operated properly, but can't explain why the side impact airbags did not deploy. I am only afraid that more people could be injured or even killed if the are hit by another vehicle in the side corner panel at 40-50 MPH and their airbags don't deploy.

My wife was very lucky even though she got seriously injured, but someone else may not be that fortunate. Thank you again for your time and consideration.

Sincerely,

[REDACTED]

3/27/2008

AA
03/26/08
KG

--- On Thu, 3/20/08, ctest@dot.gov <ctest@dot.gov> wrote:

From: ctest@dot.gov <ctest@dot.gov>

Subject: RE: Side Curtain Air Bags

To: [REDACTED]

Date: Thursday, March 20, 2008, 7:24 AM

Hello [REDACTED],

When do airbags deploy? Airbags deploy only when they might be needed to prevent serious injury. Frontal driver and passenger airbags are designed to inflate in moderate to severe frontal crashes equivalent to hitting a solid barrier at 10-12 mph. Some manufacturers use different inflation thresholds depending on whether people are using their safety belts. Thresholds of 10-12 mph typically are used for unbelted occupants, but thresholds are higher — about 16 mph — for belted occupants because the belts alone are likely to provide adequate protection up to these moderate speeds.

Side airbags are designed to protect an occupant's head and/or neck from striking objects inside or outside the vehicle in the event of a side impact crash. Because of the small amount of space between an occupant's head and the side of the vehicle, these airbags must deploy very quickly to cushion the occupant from any intruding vehicle or object such as a tree. Sensors detect when a crash is severe enough for deployment. Some curtain side airbags may stay inflated longer to protect occupants in rollover crashes. Allowing the airbags to remain inflated or triggering their deployment during a rollover can help prevent full or partial ejection of occupants.

Try to choose vehicles with 4 and 5 star ratings from our website, www.safercar.gov. You should then also use the Insurance Institute For Highway Safety website http://www.hwysafety.org/vehicle_ratings/ratings.htm and try to select a vehicle that performs well on their test. NHTSA does not set the price for new or used vehicle purchases.

Remember that all vehicles, regardless of star ratings, are inherently safe to drive. If they are sold in this country they have already passes federal regulations. NCAP is simply a program that goes above and beyond the federal minimum standards.

2008 Dodge Grand Caravan w/SAB

<http://www.safercar.gov/portal/site/safercar/menuitem.db847bd57e3dc1f885dfc38c35a67789/?vgnextoid=c95df2905bf54110VgnVCM1000002fd17898RCRD&model=Grand+Caravan>

What is NCAP?

NCAP stands for New Car Assessment Program. If you've heard of "government 5-star ratings," then you know NCAP. NCAP is part of the National Highway Traffic Safety Administration, which is part of the U.S. Department of Transportation.

NCAP provides consumers with vehicle safety information, primarily front and side crash test results, and more recently rollover ratings, to aid consumers in their vehicle purchase decisions. The test results are relayed to consumers via an easily recognizable

star rating system - from 1 to 5 stars, with 5 being the highest.

How does NHTSA perform the frontal crash test and how are vehicles rated?

For frontal crash tests, crash-test dummies representing an average-sized adult are placed in driver and front passenger seats and secured with the vehicle's seat belts. Vehicles are crashed into a fixed barrier at 35 miles per hour (mph), which is equivalent to a head-on collision between two similar vehicles each moving at 35 mph. *Since the test reflects a crash between two similar vehicles, make sure you compare vehicles from the same weight class, plus or minus 250 lbs., when looking at frontal crash star ratings.*

Instruments measure the force of impact to each dummy's head, neck, chest, pelvis, legs and feet. Frontal star ratings indicate the chance of a serious head and chest injury to the driver and right front seat passenger. A serious injury is one requiring immediate hospitalization and may be life threatening.

★★★★★	= 10% or less chance of serious injury
★★★★	= 11% to 20% chance of serious injury
★★★	= 21% to 35% chance of serious injury
★★	= 36% to 45% chance of serious injury
★	= 46% or greater chance of serious injury

How does NHTSA perform the side crash test and how are vehicles rated?

For side crash tests, crash-test dummies representing an average-sized adult are placed in the driver and rear passenger seats (driver's side) and secured with the vehicle's seat belts. The side crash test represents an intersection-type collision with a 3,015 pound barrier moving at 38.5 mph into a standing vehicle. The moving barrier is covered with material that has "give" to replicate the front of a vehicle. *Since all tested vehicles are impacted by the same size barrier, it is possible to compare all vehicles with each other when looking at side crash protection ratings.*

Instruments measure the force of impact to each dummy's head, neck, chest, and pelvis. Side-collision star ratings indicate the chance of a serious chest injury for the driver, front seat passenger, and the rear seat passenger (first and second row occupants). Head injury, although measured, is not currently included in the star rating. An excessive head injury score (HIC greater than 1,000) is reported separately as a *safety concern*. As with the frontal crash ratings, a serious injury is one requiring immediate hospitalization and may be life threatening.

★★★★★	= 5% or less chance of serious injury
★★★★	= 6% to 10% chance of serious injury
★★★	= 11% to 20% chance of serious injury



= 21% to 25% chance of serious injury



= 26% or greater chance of serious injury

Rollover Related Information May Be Found At:

http://www.nhtsa.dot.gov/cars/problems/Rollover/ratingsub_interpret.htm

Unfortunately you cannot compare cars across classes for frontal scores. However, you may for side impacts. I offer the following discussion about our program:

For testing frontal collisions, crash-test dummies are placed in driver and front passenger seats and secured with the vehicle's seat belts. Vehicles are crashed into a fixed barrier at 35 miles per hour (mph), which is equivalent to a head-on collision between two similar vehicles each moving at 35 mph. Since the test reflects a crash between two similar vehicles, you may **ONLY** compare vehicles from the same weight class, ± 250 lbs., when looking at frontal crash protection ratings.

For testing side impact collisions, crash-test dummies are placed in driver and (driver's side) rear passenger seats, on the side of vehicle struck, and secured with the vehicle's seat belts. This test represents an intersection-type collision with a 3,015 pound barrier moving at 38.5 mph into a standing vehicle. The barrier is covered with material that has "give" to replicate the front of a vehicle. Since all tested vehicles are impacted by the same size barrier, it is possible to compare all vehicles with each other when looking at side crash protection ratings.

In a car to car collision, age, gender, and vehicle mass are three variables that govern the probability of a severe trauma. While age and gender cannot be reasonably changed to be safer while driving, vehicle mass can be increased by buying a heavier vehicle. However, vehicle mass is a "two way street". On the average, my probability of severe trauma goes down when I buy a heavier vehicle. On average, the probability of trauma, for the people in the lighter vehicle I strike, goes up.

How does NHTSA categorize vehicles?

NHTSA categorizes vehicles by vehicle class and "curb" weight. Curb weight represents the weight of a vehicle with standard equipment including the maximum capacity of fuel, oil, coolant, and air conditioning, if so equipped. Passenger cars are further subdivided.

- Passenger cars – mini (PC/Mi) (1,500-1,999 lbs. curb weight)
- Passenger cars – light (PC/L) (2,000-2,499 lbs. curb weight)
- Passenger cars – compact (PC/C) (2,500-2,999 lbs. curb weight)
- Passenger cars – medium (PC/Me) (3,000-3,499 lbs. curb weight)
- Passenger cars – heavy (PC/H) (3,500 lbs. and over curb weight.)
- Sport utility vehicles (SUV)
- Pickup trucks (PU)
- Vans (VAN)

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Can I compare vehicles from different classes?

Side crash rating results can be compared across all classes because all vehicles are hit with the same force by the same moving barrier.

Rollover ratings can also be compared across all classes.

Frontal crash rating results can only be compared to other vehicles in the same class **and** whose weight is plus or minus 250 lbs of the vehicle being rated. This is so because a frontal crash rating into a fixed barrier represents a crash between two vehicles of the same weight. Examples:

- It would not be permissible to compare the frontal crash results of a 4,500 lb SUV with those of a 3,000 sedan (different classes and exceeds the weight requirement).
- It would not be permissible to compare the frontal crash results of a 3,600 lb pickup with those of a 3,400 lb van (meets the weight requirement, but different classes).
- It would be correct to compare the frontal crash results of a 3,400 lb passenger car with a 3650 lb passenger car (same class and meets the weight requirement)

How necessary are side impact airbags as a safety feature? Or

Do I need side airbags in my vehicle? Or

What is better, side airbags or no side airbags?

Vehicles with side air bags have proven to perform very well in NCAP side impact. Every vehicle we have tested with a driver's side airbag (in a normally seated, fully belted position), has rated 3 Stars or better. Most passenger cars that receive 5 Stars for the driver do have side airbags of some kind installed. On the other hand, we have noticed that cars can use the side structure and interior, energy-absorbing padding to achieve similar results in NCAP side impact tests.

SABs can provide significant safety benefits to adults in side impact crashes. NHTSA estimates that if all the vehicles on U.S. roads were equipped with head protection SABs, 700 to 1,000 lives would be saved per year in side impact crashes. NHTSA also estimates that, in side-impact crashes involving at least one fatality, nearly 60 percent of those killed have suffered brain injuries.

Unlike front air bags, SABs are *not* required by NHTSA. Because they are not required safety equipment, the Federal government does not mandate that vehicles be equipped with SABs. NHTSA has recently proposed an upgrade to the Federal standard for side impact protection. The standard establishes occupant protection performance requirements, but does not mandate particular technologies to meet those requirements. Manufacturers may meet this upgraded rule with various types of innovative head, chest, and pelvis protection systems, such as SABs.

How do I discern between vehicles that received relatively similar scores? Or

How do I choose between vehicles that have the same scores?

If you are finding it difficult to choose since both vehicles did relatively well all-around, perhaps you should drive each vehicle and see which vehicle is most comfortable for you (which offers

the least distracting features and the best line of sight, etc.), as these factors alone could help you to avoid an accident, which is the best way to avoid getting injured. You should also consider the additional safety features that each vehicle has because these features may help you to avoid an accident as well. A list of available safety features is listed on safercar.gov for each vehicle.

*Can one assume that a vehicle would have done better and maybe even gotten a better star rating if it was tested with side airbags? Or
Why did NCAP not test the side airbag model of my vehicle?*

Typically it is the case that vehicles equipped with side airbags have lower injury readings and therefore better star ratings, signaling that side airbags are a safety feature. Unless both vehicles are tested, however, one cannot be totally sure that this would be the case in vehicle model that you are inquiring about.

NCAP performs side impact crash tests of side airbag-equipped vehicles for those models in which side airbags are a standard safety feature. If side airbags are an option to the consumer, NCAP will choose a vehicle for testing that does not come equipped with the side airbags in order to hopefully provide the consumer with a "worst-case" rating for that particular vehicle, meaning that, if you did purchase the vehicle with side airbags, the design of those side airbags is such that you should be afforded additional safety protection in a side crash. A manufacturer can request an optional NCAP test at their expense if they would also like the side airbag-equipped model to be tested for those models in which side airbags are optional.

Thank you for your continued interest in our program.
NCAP
www.safercar.gov
1-888-DASH-2-DOT

From: [REDACTED]
Sent: Wednesday, March 19, 2008 9:23 PM
To: Test, Crash <NHTSA>
Subject: Side Curtain Air Bags

To whom it may concern,

I had a question regarding the side impact curtain air bags on the 2008 Dodge Grand Caravan. If a vehicle was traveling at approximately 40- 50 MPH and hit your vehicle in the front left fender, would that make the side impact air bag deploy? Note: this would be the front left fender of the vehicle prior to the door panel. Or does it have to be in the door panel to trigger the side air bag? I know that it has to be within 30 degrees of the front sensor for the front ones to deploy, but what are the areas in which the side ones should deploy? I was not sure how this works because the majority of the studies are done based upon the collision directly in the door frame. Thanks you for your time.

3/27/2008

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