

CENTER FOR AUTO SAFETY

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June 26, 2000

Ms. Rosalyn Millman
Deputy Administrator
National Highway Traffic Safety Administration (NHTSA)
400 Seventh Street, SW
Washington, DC 20590

Re: NHTSA-2000-7013, 65 Fed. Reg. 30680 (May 12, 2000) -- Advanced Airbag Final Rule

Dear Ms. Millman:

The Center for Auto Safety submits the attached petition for reconsideration on behalf of itself, the Consumer Federation of America, Parents for Safer Air Bags, and Public Citizen. As stated in the petition, our groups believe that the advanced airbag final rule contains certain shortcomings that need to be addressed by NHTSA. We request that you place a copy of this petition in the appropriate NHTSA docket.

Should you have any questions concerning the contents of this document, please feel free to contact me at (202) 328-7700, Ext. 112.

Sincerely,



Michael Kido
Staff Attorney

Attachment(s): 1

June 26, 2000

Ms. Rosalyn G. Millman
Deputy Administrator
National Highway Traffic Safety Administration ("NHTSA")
400 Seventh Street, SW
Washington DC 20590

PETITION FOR RECONSIDERATION

Re: NHTSA-2000-7013, 65 Fed. Reg. 30680 (May 12, 2000) -- Advanced Airbag Final Rule

Dear Ms. Millman:

In June of 1998, Congress passed the Transportation Equity Act for the 21st Century ("TEA 21"), which directed NHTSA to promulgate a rule by April 1, 2000 "to improve occupant protection for occupants of different sizes, belted and unbelted, . . . while minimizing the risk to infants, children, and other occupants from injuries and deaths caused by air bags, by means that include advanced air bags."¹ After missing the Congressional deadline due to protracted review at the Office of Management and Budget ("OMB"), NHTSA issued a Final Rule on May 5, 2000 that dismally fails to meet the statutory mandate. Rather than the balanced improvement in advanced air bag protection for all occupants required by Congress, NHTSA has produced a Final Rule that not only does not improve occupant protection for all occupants but even decreases protection for some occupants. For the reasons set forth below, the Center for Auto Safety, Consumer Federation of America, Parents for Safer Air Bags and Public Citizen [hereinafter "Petitioners"] petition for reconsideration of the Final Rule in the specific ways set forth in this petition.

Overview

Throughout the rulemaking, from the initial notice of proposed rulemaking ("NPRM") to the supplemental notice of proposed rulemaking ("SNPRM"), the Agency drafted a comprehensive approach to mitigate the risks of airbag deployment injuries and to improve frontal occupant crash protection.² Slowly and inexorably the balanced approach mandated by Congress was winnowed out of the Final Rule ultimately adopted. Even the NHTSA's recommended option for the Final Rule presented to OMB maintained a crucial element of the balanced approach required by Congress in providing for high speed protection for both the 50th% male and 5th% female, in an unbelted 30 mph barrier test, which is 44% more severe than a 25 mph test.

¹National Highway Traffic Safety Administration Reauthorization Act of 1998, Pub. Law No. 105-178, § 32102, 112 Stat. 465, 466 (June 9, 1998) (codified as amended at 49 U.S.C. § 30127) [hereinafter *Reauthorization Act*].

²NPRM, 63 Fed. Reg. 49958 (Sept. 18, 1998); SNPRM, 64 Fed. Reg. 60556 (Nov. 5, 1999).

The Final Rule requires no high speed crash protection for the 5th% female since the only high speed measure, a 35 mph belted crash test, applies only to a 50th% male. The Final Rule requires no protection for unbelted occupants in soft pulse crashes, where most of the occupant airbag fatalities have occurred, because the soft pulse 25 mph offset deformable barrier test applies only to belted occupants. The Final Rule requires no protection for 5th% females in oblique crashes even though it requires such protection for 50th% males. The Final Rule requires no crash protection for passengers in low speed, soft pulse crashes, even though most of the airbag fatalities are passengers, because the soft pulse 25 mph offset deformable barrier test applies only to the driver side. The Final Rule also requires no protection for children in dynamic crashes because it relies on a static test, a gamble with children's lives.

The Final Rule discriminates against passenger car occupants because sport utility vehicles ("SUVs") and light trucks have more difficulty in complying with a 30 mph unbelted test due to their stiffer frames. To satisfy the SUV models, the protection was lowered to 25 mph for all vehicles, even though NHTSA has traditionally adopted two phase-in standards with passenger cars being required to meet stiffer safety standards sooner than light trucks. This discrimination is all the more deadly because in frontal crashes between light trucks/SUVs and cars, the lighter car experiences a higher crash severity than the heavier truck -- e.g., a 3000 pound car hitting a 6000 pound SUV head-on at 30 mph experiences a 40 mph change in velocity compared to only 20 mph for the SUV. The cars that need more protection received less protection under the Final Rule. These discrepancies must not be allowed to remain.

1. Separate SUV and Passenger Car Phase-In Schedules

Paramount throughout the Final Rule is that SUVs have a more difficult time complying with the advanced airbag test requirements. Nowhere is this difference more apparent than in NHTSA's observation that SUVs and light trucks (collectively known as "LTVs") will have a harder time with a 30 mph unbelted barrier test due to the stiffer frame which produces a harder crash pulse and requires a more aggressive airbag than passenger cars have. The Final Rule candidly notes that the lower 25 mph unbelted test speed "gives vehicle manufacturers more flexibility to address the greater compliance problems associated with vehicles e.g., SUVs, with particularly stiff crash pulses."³ NHTSA admits some passenger cars already meet the unbelted 30 mph test requirements for both the 50th% male and 5th% female, which would support the position that passenger cars can meet the new injury criteria in a 30 mph unbelted test.⁴ Since the 30 mph test speed represents the median speed of all fatal frontal crashes,⁵ NHTSA is clearly sacrificing passenger car occupants by not requiring 30 mph protection at least for passenger cars.

³65 Fed. Reg. at 30689

⁴*See id.* at 60580 (noting that "the MY 1999 Saturn SL1 and the MY 1998 Ford Taurus . . . passed all the injury criteria performance limits for the driver and passenger using both unbelted 5th% adult female and unbelted 50th% adult male dummies in the rigid barrier crash tests at 48 km/h (30 mph).").

⁵*See* 64 Fed. Reg. at 60573.

Since manufacturers already build cars that meet the 30 mph unbelted test, NHTSA should have required the industry to meet the 30 mph unbelted test for cars but meet a 25 mph test for LTVs. Adopting such a measure would increase the level of vehicle safety to a greater degree than that allowed and set forth in the Final Rule. It would also provide manufacturers with both additional time and the necessary design flexibility to develop engineering solutions for LTVs to meet a 30 mph test at some future date that NHTSA deems appropriate.⁶

Adopting a separate track would also take into account the need to improve occupant protection in light of the increased number of LTVs appearing on the road. With LTVs accounting for over half of new vehicle sales, the need for high levels of occupant protection for passenger car occupants is especially acute since car occupants are four times more likely to be killed in collisions with LTVs than their LTV counterparts.⁷ Because of this clear danger from LTVs and the ability of manufacturers to immediately take steps to mitigate the risks to passenger car occupants, NHTSA should ensure that the improvements it intends to make to airbags do not result in restraint system performance with decreased protection for anyone.

2. Unbelted Occupants and Passengers Have No Required Soft Crash Pulse Protection

Although NHTSA recognizes that many of the airbag fatalities occur in low speed, soft pulse crashes, where the airbag deploys late and strikes an out-of-position (“OOP”) occupant who has moved forward in the crash before the airbag deploys, NHTSA failed to require any test to protect against this in the Final Rule. Instead, the Final Rule contains only a belted offset deformable barrier test and a static suppression test.⁸ Neither of these tests requires protection for an occupant who starts to move forward as a vehicle crashes into an object that does not generate a crash pulse sufficient to trigger the airbag until late in the crash (50 to 100 milliseconds after the crash has begun) and the unrestrained or improperly restrained occupant has moved closer to the late deploying airbag.

⁶NHTSA has long adopted the strategy of more lenient and delayed standards for light trucks. See GAO, *Unwarranted Delays By The Department of Transportation To Improve Light Truck Safety* (July 6, 1978). Ultimately, the answer became to set the most stringent standards for cars to be followed as soon as possible by light trucks. When the Intermodal Surface Transportation Efficiency Act of 1991 (“ISTEA”) went into effect, NHTSA received a mandate from Congress to require the installation of airbags in vehicles. Pub. L. No. 102-240, 105 Stat. 2081 (Dec. 18, 1991). In developing the phase-in schedule, NHTSA provided separate schedules for passenger cars and light trucks. See 58 Fed. Reg. 46551, 46563 (Sept. 2, 1993) (establishing separate phase-in tracks for cars and light trucks to comply with ISTEA airbag mandate).

⁷H. Gabler & W. Hollowell, *NHTSA's Vehicle Aggressivity and Compatibility Research Program*, 16TH INTERNATIONAL TECHNICAL CONFERENCE ON THE ENHANCED SAFETY OF VEHICLES, 640, 642 (1998) (observing that in LTV-car crashes, car occupants were killed at a rate of slightly over four times that of LTV occupants).

⁸The initial NPRM proposed to require manufacturers to conduct 25 mph offset testing into a deformable barrier using both a belted driver and passenger. See 63 Fed. Reg. at 49968 (presenting diagram of proposed test requirements “to preserve and improve occupant protection for different size occupants, belted and unbelted.”).

a) 25 mph Belted Driver Deformable Barrier Test Is Inadequate

In adopting the 25 mph belted offset test for the 5th% female driver, NHTSA ignored the statutory mandate to protect all occupants and omitted requiring protection for the passenger even though the latest available Special Crash Investigation ("SCI") data show that 102 individuals have been killed by passenger airbags out of 162 total deaths.⁹ At least half of these crashes involved low speed impacts with out-of-position occupants where a soft pulse, low speed crash test requirement would be particularly effective. Instead of requiring such protection the Final Rule provides for at most monitoring to see whether passengers continue to be killed.¹⁰

Requiring the 25 mph offset test to be run with a dummy on the driver's side flies in the face of evidence in the record that unbelted drivers are more likely to be killed by airbags than belted drivers. An unbelted occupant is much more likely to be in close proximity to the airbag cover during the initial stages of deployment, when the airbag is most likely to cause serious injury, than a belted occupant. As evidenced by the cases listed in NHTSA's SCI summary tables, it is this type of scenario that presents manufacturers with significant problems. Out of the 67 driver cases in the SCI tables (60 of which involve fatalities), 44 (37 deaths) involved chest injuries caused by the airbag.¹¹ These injuries included heart and lung lacerations, ruptured aortas, and bilateral rib fractures. Failing to include a procedure that increases the likelihood of duplicating the worst-case scenario actually experienced in the field seriously undercuts Congress' expressed intent behind the TEA-21 amendments.

As pointed out by a major supplier, the 25 mph belted test permits manufacturers to produce systems that suppress deployment during these types of softer collisions because the injury criteria can be so readily met in such a crash without an airbag.¹² Requiring an unbelted occupant would more likely require deployment and the use of a multi-stage inflator which will avoid injury to the OOP occupant.

⁹According to the May 2000 SCI airbag injury report, 6 were adults and 96 were children -- 18 in rear facing infant seats, 5 in other types of child safety seats, and 79 who were not in any type of child safety seat.

¹⁰See 65 Fed. Reg. at 30709 (stating Agency will monitor airbag designs and consider changing its decision if sensor systems are optimized for driver's side frontal impacts).

¹¹SCI Report (presenting list of driver fatalities due to airbag deployment).

¹²One major supplier has suggested that the 25 mph offset test may not even require an airbag deployment to meet the adopted injury criteria. See 65 Fed. Reg. at 30708 (noting Delphi's suggestion to increase offset test speed to 30 mph in order to ensure airbag deployment). Since the adopted offset test enables manufacturers to comply with FMVSS 208 without an airbag deployment, the new amendments to the standard cannot fulfill its purpose to reduce deployment-related injury risk. With manufacturers able to suppress deployment in the out-of-position (i.e. worst-case scenario) tests and the 25 mph offset test not being sufficiently severe enough to initiate airbag deployment, NHTSA will not be able to evaluate an airbag's interaction with vulnerable occupants (in this case 5th% female drivers).

b) Dynamic Suppression for Out-of-Position Occupants Was Dropped

An alternative to designing an airbag with a multi-stage inflator with reduced injury levels is to design a system that dynamically suppresses an airbag (“DASS”) in a real world crash when sensors detect an occupant has moved out-of-position and is more likely to be killed or seriously injured by a deploying airbag. The NPRM proposed that manufacturers conduct a number of different types of dynamic tests in order to ensure that the airbag system suppresses or deploys appropriately. NHTSA indicated that “DASS holds significant promise for improving occupant safety.”¹³ It also observed that:

The primary factor linking these deaths is the proximity of occupants to the air bag when it deployed. These deaths occurred under circumstances in which the occupant’s upper body was very near the air bag when it deployed.¹⁴

The Final Rule contain only a series of static-based tests that are far simpler to meet than a dynamic test. Simply put, the static tests require placing a child or 5th% female in one of a number of designated out-of-positions and determining if the static sensor identifies the OOP occupant and suppresses the airbag. Such sensors are typically weight-based (including those using pattern recognition) and can be fooled into false readings. NHTSA compounded this problem in the Final Rule by deleting “rough road” testing, which is designed primarily to assess the ability of these weight-based sensor systems to discriminate between small adults and children¹⁵

3. High Speed Crash Protection Does Not Protect 5th% Females

Having reduced the level of protection for unbelted occupants to 25 mph because SUVs did not comply with 30 mph, the Final Rule adopted a 35 mph belted test to provide high speed protection, but limited the protection to 50th% males. Instead of providing the same level of protection for 5th% female occupants in high speed crashes as for 50th% males as the law requires, NHTSA deferred protection for small women to future rulemaking.¹⁶ By choosing to delay the introduction of 35 mph testing for female occupants, NHTSA has unnecessarily created two levels of high speed protection -- one level (higher) for 50th% males, another level (lower) for 5th% females.

The NHTSA chose to omit the 5th% female as part of the 35 mph test procedure “because

¹³64 Fed. Reg. at 60586.

¹⁴63 Fed. Reg. at 49961.

¹⁵*Id.* at 60556, 60584-87 (Nov. 5, 1999).

¹⁶*See id.* at 30690.

of sparse information on the practicability of such a requirement.”¹⁷ This explanation is inconsistent with the other actions that the Agency has taken with regard to this rulemaking and the facts. The advanced airbag rulemaking consists of multiple components in which the Agency needed to decide on procedures in which it had “sparse information.” For example, out-of-position test protocols for 5th% female drivers and children were adopted as part of the rule with relatively little information on their practicability.

The 35 mph test with the belted 50th% male is little more than the New Car Assessment Program (“NCAP”) 35 mph belted test with the addition of neck injury criteria (“Nij”). The Final Rule points out that the majority of 1999-2000 vehicles tested in NCAP already meet this standard which is not even phased in until the 2008-2011 model years.¹⁸ The decision to apply this requirement to the 50th% male alone during the 2004-2007 model years is arbitrary and capricious, as is the decision not to apply it to small women.

4. 25 mph Unbelted Test Speed Fails to Protect 5th% Females in Oblique Crashes

Although the NPRM would have required the 30 mph solid barrier test to include an oblique or 30° angle test, the Final Rule (which reduced the speed to 25 mph) has no such requirement.¹⁹ In requiring oblique testing only for the 50th% male, NHTSA again ignores the Congressional mandate and assumes that, if the male is protected, so will the female. It was that very logic that led so many small women to be killed by airbags. Moreover, NHTSA has run tests that show that the interaction of the airbag with the anatomy of small women can lead to fatal airbag injuries. During 30° oblique vehicle compatibility testing, the passenger airbag in a 1997 Dodge Caravan caught the neck of a 5th% female dummy in a way NHTSA found was likely to cause death or serious injury:

The extremely high Nij value for the 5th% passenger in the Dodge Caravan is due to the air bag interaction. For this occupant, the air bag caught the dummy under the chin and produced large neck injury value, indicating a high probability of serious injury or death as a result of the interaction.²⁰

Conclusion

The Final Rule fails to follow the Congressional mandate of providing advanced airbag protection for all occupants, male and female, large and small, belted and unbelted. The Final Rule

¹⁷*Id.*

¹⁸“The 56 km/h (35 mph) belted barrier test has been used in [NCAP] since 1979, and most vehicles today meet the injury criteria in today’s rule at that speed.” 65 Fed. Reg. at 30707.

¹⁹63 Fed. Reg. at 49968 (presenting proposed compliance testing that included 30 degree oblique testing for unbelted and belted 5th% female drivers and passengers).

²⁰S. Summers, et al., *NHTSA’s Vehicle Compatibility Research Program*, SAE No. 1999-01-0071, at 3 (1999).

does not even minimize the risk to infants, children and other occupants from airbags because of the numerous loopholes created in the Rule and the deferral of important elements such as high speed crash protection for small women and dynamic out-of-position occupant tests to future rulemaking. Congress gave NHTSA a mandate to protect all occupants while minimizing risk, together with a deadline to accomplish that protection. NHTSA neither met the deadline nor provided the protection to occupants.

Instead the Final Rule protects the auto makers' profits in SUVs at the expense of consumers' safety. Passenger cars, which have softer frames and less aggressive airbags, can already meet the more stringent requirements proposed by petitioners and rejected in the Final Rule after OMB review. Rather than require the more stiff-framed SUVs with more aggressive airbags to be upgraded, the Final Rule has degraded the safety required for passenger cars.

Petitioners request NHTSA to reconsider the Final Rule and amend it as follows:

1. Require passenger cars to meet a 30 mph unbelted barrier test and LTVs (i.e. light trucks, vans and SUVs) to meet a 25 mph unbelted barrier test on the same phase-in schedule as provided in the Final Rule.
2. Require that manufacturers conduct the 25 mph deformable barrier test with unbelted rather than belted dummies and on both the driver and passenger sides.
3. Require manufacturers to meet a 35 mph belted barrier test with the 5th% female as well as the 50th% male dummy.
4. Require that manufacturers conduct all barrier tests in both the perpendicular and 30° oblique modes.

Respectfully submitted,

Center for Auto Safety

Public Citizen

Consumer Federation of America

Parents for Safer Air Bags