

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety
Administration

49 CFR Part 575

[Docket No. NHTSA-2001-9663; Notice 3]

RIN 2127-A181

Consumer Information; New Car
Assessment Program; Rollover
ResistanceAGENCY: National Highway Traffic
Safety Administration (NHTSA), DOT.

ACTION: Final policy statement.

SUMMARY: The Transportation Recall Enhancement, Accountability, and Documentation Act of 2000 requires NHTSA to develop a dynamic test on rollovers by motor vehicles for the purposes of a consumer information program, to carry out a program of conducting such tests, and, as these tests are being developed, to conduct a rulemaking to determine how best to disseminate test results to the public. This document modifies NHTSA's rollover resistance ratings in its New Car Assessment Program (NCAP) to include dynamic rollover tests after considering comments to our previous document. The changes described in this document will improve consumer information provided by NHTSA, but will not place regulatory requirements on vehicle manufacturers.

DATES: NCAP rollover resistance ratings in the 2004 model year will be determined using the system established by this document.

Petitions: Petitions for reconsideration must be received by November 28, 2003.

FOR FURTHER INFORMATION CONTACT: For technical questions you may contact Patrick Boyd, NVS-123, Office of Rulemaking, National Highway Traffic Safety Administration, 400 Seventh Street, SW., Washington, DC 20590 and Dr. Riley Garrott, NVS-312, NHTSA Vehicle Research and Test Center, P.O. Box 37, East Liberty, OH 43319. Mr. Boyd can be reached by phone at (202) 366-6346 or by facsimile at (202) 493-2739. Dr. Garrott can be reached by phone at (937) 666-4511 or by facsimile at (937) 666-3590.

SUPPLEMENTARY INFORMATION:

- I. Executive Summary
- II. Safety Problem
- III. Background
 - A. Existing NCAP Program and the TREAD Act
 - B. National Academy of Sciences Study
- IV. Notice of Proposed Rulemaking
- V. Results of Dynamic Maneuver Tests of 25 Vehicles

- A. J-Turn Maneuver
- B. Fishhook Maneuver
- C. Loading Conditions
- D. Test Results
- VI. Rollover Risk Model
- VII. Comments to the Previous Notice
 - A. Combined or Separate Rollover Resistance Ratings
 - B. Crash Avoidance Technologies
 - C. The J-Turn and Fishhook Maneuvers
 - D. Tire Wear
 - E. Pavement Temperature
 - F. Surface Friction
 - G. Steering Reversal
 - H. Fifteen-Passenger Vans
 - I. Tip-up Criterion
 - J. Testing of Passenger Cars vs. Light Trucks
 - K. Testing with Electronic Stability Control Systems
- VIII. Final Form for Rollover Resistance Ratings "Alternative I"
 - A. Combined Ratings
 - B. Dynamic Testing
 - C. Demonstration Program
- IX. Cost Benefit Statement
- X. Rulemaking Analyses and Notices
 - A. Executive Order 12866
 - B. Regulatory Flexibility Act
 - C. National Environmental Policy Act
 - D. Executive Order 13132 (Federalism)
 - E. Unfunded Mandates Act
 - F. Civil Justice Reform
 - G. Paperwork Reduction Act
 - H. Plain Language
- Appendix I. Fishhook Test Protocol
- Appendix II. Development of Logistic Regression Risk Model

I. Executive Summary

While the total number of highway fatalities has remained relatively stable over the past decade, the number of rollover deaths has risen substantially. According to NHTSA's National Center for Statistics and Analysis, from 1991 to 2001 the number of passenger vehicle occupants killed in all motor vehicle crashes increased 4 percent, while fatalities in rollover crashes increased 10 percent. In the same decade, passenger car occupant fatalities in rollovers declined 15 percent while rollover fatalities in light trucks increased 43 percent. In 2001, 10,138 people died in rollover crashes, a figure that represents 32 percent of occupant fatalities for the year.

In response to that trend, NHTSA has been evaluating rollover testing since 1993. In 2001, NHTSA began publishing rollover rating information for consumers, supplementing New Car Assessment Program (NCAP) frontal crashworthiness ratings that began in 1979 and side impact ratings that began in 1997.

When Congress approved the "Transportation Recall, Enhancement, Accountability and Documentation (TREAD) Act of November 2000", Section 12 directed the Secretary of Transportation to "develop a dynamic

test on rollovers by motor vehicles for a consumer information program; and carry out a program conducting such tests. As the Secretary develops a [rollover] test, the Secretary shall conduct a rulemaking to determine how best to disseminate test results to the public."

On July 3, 2001, NHTSA published a Request for Comments notice (66 FR 35179) discussing a variety of dynamic rollover tests that we had chosen to evaluate in our research program and what we believed were their potential advantages and disadvantages.

We published a Notice of Proposed Rulemaking on October 7, 2002 (67 FR 62528) that proposed alternative ways of using the dynamic maneuver test results in consumer information on the rollover resistance of new vehicles.

Beginning with rollover ratings for the 2004 model year, NHTSA will combine a vehicle's Static Stability Factor (SSF) measurement with its performance in the so-called "Fishhook" maneuver. The so-called "J-Turn" dynamic test maneuver discussed in previous notices will be not be used by NHTSA for rating rollover resistance. Our analysis has found that the J-Turn maneuver test does not add any meaningful information to what is obtained from the fishhook maneuver test alone (see Appendix II.B). The predicted rollover rate will be translated into a five-star rating system that is the same as the one now in use: One star is for a rollover rate greater than 40 percent; two stars, between 30 and 39 percent; three stars, between 20 and 29 percent; four stars, between 10 and 19 percent; and five stars for 10 percent or less.

This decision maximizes the vehicle information used to make the rollover rate prediction and will allow us to ensure that rollover NCAP information corresponds even more closely to real-world rollovers. We have also decided to present our rollover information as a single combined rollover rating that most commenters agreed would be more understandable to consumers.

This document also includes a test procedure (Appendix I) for conducting vehicle maneuver tests, and discusses testing regimes that have been incorporated to minimize variability in test data.

II. Safety Problem

Rollover crashes are complex events that reflect the interaction of driver, road, vehicle, and environmental factors. We can describe the relationship between these factors and the risk of rollover using information from the agency's crash data programs. We limit our discussion here to light vehicles,