4. In § 97.207(g) introductory text, (h) and (i) are revised to read as follows:

§ 97.207 Space station.

* * * * *

(g) The licensee of each space station must give two written, pre-space station notifications to the Wireless Telecommunications Bureau, FCC, Washington, DC 20554. Each notification must be in accord with the provisions of Articles 11 and 13 of the Radio Regulations.

* * * * *

(h) The licensee of each space station must give a written, in-space station notification to the Wireless Telecommunications Bureau, FCC, Washington, DC 20554, no later than 7 days following imitation of space station transmissions. The notification must update the information contained in the pre-space notification.

(i) The licensee of each space station must give a written, post-space notification to the Wireless Telecommuncations Bureau, FCC, Washington, DC 20554, no later than 3 months after termination of the space station transmissions. When the termination is ordered by the FCC, notification is required no later than 24 hours after termination.

[FR Doc. 95–23894 Filed 9–27–95; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 571

[Docket No. 94–70, Notice 3]

RIN 2127–AF35

Federal Motor Vehicle Safety Standards; Door Locks and Door Retention Components

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: This final rule amends the Federal motor vehicle safety standard pertaining to door locks and door retention components. This rule extends the standard's requirements, currently applicable only to side doors, to the back doors of passenger cars and multipurpose passenger vehicles (MPV) so equipped, including hatchbacks, station wagons, sport utility vehicles, and passenger vans, with a gross vehicle weight rating (GVWR) of 4,536 kilograms (kg) (10,000 pounds) or less. Further, to allow for differences between side doors and back doors, including the different directions in which they open in relation to the vehicle, this rule amends certain performance requirements and test procedures to make them appropriate for back doors. Extension of the standard to back doors will reduce the likelihood of occupants being ejected through the back doors of vehicles in the event of a crash, thereby reducing fatalities and serious injuries.

DATES: This final rule is effective September 1, 1997.

The incorporation by reference of the Society of Automotive Engineers material listed in this document is approved by the Director of the Federal Register.

Any petition for reconsideration of this rule must be received by NHTSA not later than October 30, 1995.

ADDRESSES: Petitions for reconsideration should refer to the docket and notice numbers noted above for this rule and be submitted to Docket Section, National Highway Traffic Safety Administration, 400 Seventh Street, S.W., Room 5109, Washington, DC 20590. Docket hours are from 9:30 a.m. to 4:00 p.m., Monday through Friday. Telephone (202) 366–4949.

FOR FURTHER INFORMATION CONTACT: For other than legal issues: Dr. William Fan, Office of Vehicle Safety Standards, National Highway Traffic Safety Administration, 400 Seventh Street, SW, Washington, DC 20590. Telephone (202) 366–4922; FAX (202) 366–4329.

For legal issues: Walter Myers, Office of Chief Counsel, National Highway Traffic Safety Administration, 400 Seventh Street, SW, Washington, DC 20590. Telephone (202) 366–2992; FAX (202) 366–3820.

SUPPLEMENTARY INFORMATION:

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I. Background

(a) Current Provisions

Federal Motor Vehicle Safety Standard (Standard) No. 206, *Door locks and door retention components* (49 CFR 571.206), specifies performance requirements for side door locks and retention components including latches, hinges, and other supporting means. These requirements are intended to minimize the likelihood of occupants being ejected from the vehicle in the event of a crash. The standard applies to passenger cars, MPVs, and trucks, and provides that components on any side door leading directly into a compartment containing one or more seating accommodations must comply with the standard. The full requirements of the standard apply to side doors other than sliding doors and cargo-type doors, to which more abbreviated requirements apply, as discussed below.

Excluded from the standard are folding doors, roll-up doors, doors designed to be easily attached to or removed from vehicles manufactured for operation without doors, and side doors equipped with wheelchair lifts that are linked to either an audible or visible alarm system that is activated when the door is open.

(1) Full Requirements

(i) Latch/striker assemblies. Each door latch and striker assembly must have a fully latched position and a secondary latched position. The secondary latched position serves as a backup to the fully latched position in the event the fully latched position is not properly engaged.

The standard requires that the latch and striker assembly, when in the fully latched position, must not separate when a longitudinal load of 11,000 Newtons (2,500 pounds) or a transverse load of 8,900 Newtons (2,000 pounds) is applied to the latch. A ''longitudinal'' load is applied parallel to the vehicle's longitudinal, or lengthwise, centerline and perpendicular to the latch face. A ''transverse'' load is applied perpendicular to the vehicle's longitudinal centerline, in the direction of door opening. Further, a door latch must not disengage from the fully latched position when an inertia load of 30g is applied to the latch/striker system in either the longitudinal or the transverse direction.[1] Finally, the standard requires that the latch/striker assembly must not separate when a longitudinal or a transverse load of 4,450 Newtons (1,000 pounds) is applied to the latch while in the secondary latched position.

(ii) Hinges. The standard requires each hinge system to support the door and not separate when a longitudinal load of 11,000 Newtons (2,500 pounds) is applied. Further, each hinge system must not separate when a transverse load of 8,900 Newtons (2,000 pounds) is applied.

(iii) Locks. Each door must be equipped with a locking mechanism that has an operating means on the interior of the vehicle. Further, when the locking mechanism is engaged in front side door locks, the outside handle or other outside latch release mechanism must be inoperative. In passenger cars and MPVs, when the locking mechanisms are engaged in rear side door locks, both the inside and outside door handles or other latch release mechanisms must be inoperative.

(2) Abbreviated Requirements

(i) Hinged cargo-type doors. ''Cargo-type door'' is defined in the standard as ''a door designed primarily to accommodate cargo loading including, but not limited to, a two-part door that latches to itself.'' These doors are required to have only the fully latched position, not the secondary latched position. Each latch system must not separate when a longitudinal load of 11,000 Newtons (2,500 pounds) or a transverse load of 8,900 Newtons (2,000 pounds) is applied. The hinges on these doors are required to support the door and shall not separate when a longitudinal load of 11,000 Newtons or a transverse load of 8,900 Newtons is applied.

(ii) Sliding doors. The track and slide combination or other supporting means for each sliding door shall not separate when a total transverse load of 17,792 Newtons (4,000 pounds) is applied with the door in the closed position.

(3) Test Procedures

Under Standard No. 206, latch and hinge assemblies are tested individually as components and not as part of the vehicle structure to which they are attached. The standard incorporates the test procedures set forth in Society of Automotive Engineers (SAE) Recommended Practice J839b, *Passenger Car Side Door Latch Systems,* May 1965 (SAE J839b), and SAE Recommended Practice J934, *Vehicle Passenger Door Hinge Systems,* July 1965 (SAE J934). The provisions of SAE J934 do not apply to piano-type hinges, however. For those hinges, the arrangement of the test fixture shall be altered as required so that the test load will be applied to the complete hinge.

(b) Agency Review of Back Door Openings

Although Standard No. 206 applies only to side doors of passenger cars, MPVs, and trucks, NHTSA has reviewed the potential safety problems associated with back door openings on vehicles so equipped several times in recent years. An agency report entitled *Hatchback, Tailgate, and Back Door Opening in Crashes and Occupant Ejection through the Back Area* issued on April 5, 1990 (1990 report) (NHTSA docket no. 90–08–GR–001) concluded that the back doors of vehicles so equipped opened in 5–6 percent of crashes that required towing from the scene (hereinafter referred to as ''towaway crashes''), while side doors opened in 1–3 percent of such crashes. The report was based on 1982–1986 and 1988 data from the National Accident Sampling System (NASS) and the 1988 Fatal Accident Reporting System (FARS). Further, a hatchback or tailgate was found to be about 3 times as likely to open as one of the front side doors and 7–8 times as likely to open as one of the rear side doors. The data also showed that rollovers accounted for about 53 percent of back door openings, 23 percent of left front door openings and 40 percent of right front door openings. However, although back doors opened more frequently than side doors, only 1 percent of back door openings resulted in occupant ejection, as opposed to 8–13 percent occupant ejections through front side door openings. Finally, depending on the methodology used to analyze the data, NHTSA calculated the fatalities due to back door ejections in 1988 to be between 93 and 130.

Also on April 5, 1990, NHTSA wrote to 9 manufacturers: Chrysler, Ford, General Motors, Honda, Mazda, Nissan, Toyota, Volkswagen, and Volvo asking their comments on the issue of back door openings and requesting information on their back door latch/lock designs. Of the 8 that responded, only Mazda reported that some of its models had back doors that met the requirements of Standard No. 206. All indicated, however, that they did not consider back door openings to be a significant safety problem and argued that the proper use of seat belts is the best way to prevent occupant ejections.

By Federal Register notice dated November 20, 1990 (55 FR 48261), the agency denied a June 19, 1990 petition for rulemaking from the Insurance Institute for Highway Safety (IIHS) to extend the requirements of Standard No. 206 to back doors. Citing the 1990 report and the comments of the 8 manufacturers responding to NHTSA's April 5, 1990 letter, the agency stated that of the 25 people ejected through back doors as reported in the 1982–1988 NASS data, only one was using a seat belt. Thus, the agency agreed at that time that the increased use of seat belts in rear seats would be a more effective means of reducing back door ejections. The agency determined, therefore, that there was not a safety need significant enough to justify the suggested rulemaking, and that extending the then-current side door requirements to back doors would not be the most effective means of reducing back door ejections.

On January 21, 1994, the agency issued a report entitled *Door Opening and Occupant Ejection through Rear Hatches, Tailgates, and Other Back Doors* (1994 report) (NHTSA docket no. 90–06–N03–001), which updated the 1990 report. Based on NASS and FARS data from 1988–1992, NHTSA estimated that there are 147 fatalities and 189 serious injuries annually resulting from ejections through hatches, tailgates, and other back doors. About 95 percent of those victims were not properly belted and about 10 percent of the improperly belted victims were children under 10.

[1] ''Inertia'' is the property of matter that requires that a load be applied on a body to accelerate it, calculated by multiplying the mass of a body by its acceleration.

Rollovers accounted for about 35 percent of left front door openings, 40 percent of right front door openings, and 42 percent of back door openings. Finally, the data showed that the most common damage associated with door openings was damage to the latch/striker assemblies: 60 percent for left front door openings, 50 percent for right front door openings, and 71 percent for back door openings.

(c) Notice of Proposed Rulemaking

(1) Rationale

In view of the number of fatalities and injuries resulting from back door ejections, NHTSA published a Notice of proposed rulemaking (NPRM) on August 30, 1994, proposing to extend the requirements of Standard No. 206 to the back doors of passenger cars and MPVs with a GVWR of 4,536 kg (10,000 pounds) or less, including hatchbacks, passenger vans, station wagons, and sport utility vehicles. In addition, the agency proposed certain modifications to the test procedures applicable to back doors.

Based on agency data, NHTSA believes that its side door latch requirements for passenger cars reduce the risk of ejection in rollover crashes by 15 percent, thereby saving an estimated 400 lives per year. Thus, although the agency has acknowledged that increased use of safety belts is effective in reducing vehicle ejections, extending Standard No. 206 requirements to back doors would help reduce injuries and fatalities resulting from back door ejections of unbelted occupants. Further, because of the increasing popularity of vehicles equipped with back doors, especially passenger vans, this safety problem may become more serious unless preventive measures are taken.

As noted in the NPRM, there is a greater variety of designs of back doors than of side doors. While most side doors open to the side and have hinges on their front and latches on the rear, back doors may open upward, rearward or to the side, and have latches and hinges on the top, bottom or side. In addition, back doors may be vertical or sloped when viewed from the side.

Nevertheless, the NPRM pointed out four basic designs of back doors typically used in production vehicles:

(i) Door opens upward, with a single latch (or striker) centered at the bottom of the door with a single striker (or latch) on the back door sill or floor panel;

(ii) Door opens sideways, with latch on the door and striker on the door frame, such as back doors on large station wagons;

(iii) Split doors with top, typically of glass, opening upward and bottom tailgate opening downward, with striker at the bottom of the top door and latches or rod/pin connectors at the top and sides of the tailgate, such as back doors of sport utility vehicles; and

(iv) Double cargo-type doors, a 2-part door that latches to itself with one latch located at the center between the doors, such as the back doors of some cargo vans.

Because of the wide variety of back door designs and the variation in latch and hinge orientations in relation to the vehicle, NHTSA indicated in the NPRM that directions in which test loads are applied should be specified in relation to the orientation of each latch and hinge. The agency further indicated that latches and hinges on doors that open upward should meet load requirements in 3 rather than in 2 directions. For those reasons, NHTSA proposed to modify the test procedures applicable to back door latches and hinges, as discussed below.

In addition to proposing modifications to the existing latch/striker test procedures, the agency announced that it was considering applying the secondary latched position requirement currently applicable to side door latches to some or all back door latches. The agency therefore requested comments on what types of back doors should be included or excluded from this requirement and why.

(2) Proposed Test Procedures for Back Door Latches

(i) Load Test One. For back doors, NHTSA proposed basically the same test as the longitudinal test, that is, applying a load perpendicular to the face of the latch, utilizing the same test loads. Rather than refer to the test as ''longitudinal load,'' however, NHTSA proposed to refer to it as ''Load Test One,'' since most back door latches are oriented so that a load applied parallel to the vehicle longitudinal centerline would not be equivalent to the longitudinal test of side door latches.

(ii) Load Test Two. The agency proposed to apply to back doors a test corresponding to the transverse load test for side doors, but rather than apply the load in the direction of door opening, NHTSA would apply the load in the direction of the fork-bolt opening and parallel to the plane of the latch face. The agency proposed to use the same test loads as in the transverse load test, but would refer to this test as ''Load Test Two.''

(iii) Load Test Three. NHTSA proposed to require latches on doors that open upward to meet load requirements in a third direction that is orthogonal, i.e. perpendicular, to both of the directions in which loads are applied in Load Tests One and Two. The set-up for Load Tests Two and Three would be identical, except that in Load Test Three, the latch would be mounted in a position perpendicular to those in Load Tests One and Two. The agency requested comments on whether a load of 11,000 Newtons (2,500 pounds) or 8,900 Newtons (2,000 pounds) should apply to Load Test Three.

(iv) Inertia load. In view of the many orientations of back doors, NHTSA proposed that back door latches meet the 30g inertia load requirement in any direction, as opposed to a limited number of directions for side door latches. The agency requested comments on the appropriateness of that proposal.

(3) Proposed Test Procedures for Back Door Hinges

The agency stated that the same considerations concerning load orientations apply to back door hinges as to back door latches. Accordingly, the agency proposed the following 3 load tests for hinges:

(i) Load Test One. Load is applied perpendicular to the hinge face plate;

(ii) Load Test Two. Load is applied perpendicular to the axis of the hinge pin and parallel to the hinge face plate; and

(iii) Load Test Three. In this test, which is applicable to the hinges on doors that open upward, the load is applied parallel to the axis of the hinge pin.

The agency requested comments whether the load for the three hinge tests should be 8,900 Newtons (2,000 pounds) or 11,000 Newtons (2,500 pounds).

(4) Back Door Locks

The agency stated that it was considering extending the door lock requirements of Standard No. 206 to some or all back door locks, and requested comments on that issue.

(5) Additional Considerations

The agency requested comments on the following issues:

(i) To what extent should full versus abbreviated requirements apply to back doors?

(ii) Are the proposed test requirements clear and appropriate for all back doors?

(iii) Which and how many hatchbacks, station wagons, passenger vans, and sport utility vehicles would need to be upgraded to meet the proposed requirements? What is the consumer cost and relative strength increase for each upgrade?

(iv) Identify and/or provide the agency with any data that would assist the agency in quantifying the safety or other benefits of the proposed requirements.

(6) Costs and Benefits

Assuming an effective date on or before September 1, 1997, the agency estimated that about 1.5 million hatchbacks, 0.4 million station wagons, 1.6 million sport utility vehicles, and 1.8 million passenger vans, for a total of 5.3 million vehicles expected to be produced during model year 1998, could be affected by these amendments. In a NHTSA evaluation of 8 passenger minivan back door latches (docket No. 97–70–N 01), representing about 1 million vehicles sold in 1993, 2 failed the longitudinal load test (equivalent to Load Test One) and another failed the transverse load test (equivalent to Load Test Two). All the others exceeded the proposed load requirements. The 5 complying latches represent about 50 percent (0.5 million) of the 1993 minivan sales. The agency concluded, therefore, that about half the minivan fleet already meets or exceeds the requirements proposed in the NPRM. Although the back door latch assemblies of hatchbacks, station wagons and sport utility vehicles were not tested, NHTSA considered that since most of the 1.6 million sport utility vehicles have back door latch systems similar to those of minivans, about 50 percent (0.8 million) of sport utility vehicles would also meet the proposed requirements. Although the remaining vehicles could require some upgrading of their current back door locks and retention components, the agency estimated that the proposed requirements would not require more than minor changes in either latch, hinge, or locking mechanisms.

The retail costs of the tested latches ranged from $22.03 to $81.74. The costs of the 3 failing latches were $23.52, $63.19, and $81.74. The tests showed that a latch that complies with Standard No. 206 need not be more expensive than one that does not. Assuming, therefore, that no more than 4.0 million vehicles may require upgrades and that the cost of the upgrades may not be higher than that of current designs, NHTSA estimated that the cost of extending the requirements of Standard No. 206 to the back doors of the proposed vehicles would be minimal.

Compliance tests for back door locks and retention components would typically be conducted with similar, but perhaps slightly modified, test equipment of the type currently used to evaluate side door locks and retention components. NHTSA estimated, therefore, that no significant test equipment costs should be incurred by manufacturers.

The agency pointed out that of the deaths and injuries that occur annually involving occupant ejection through back doors, over 80 percent involve hinge or latch damage. The agency anticipated, therefore, that the proposed upgrades should reduce such deaths and injuries, although the agency is not able to quantify such benefits or costs. Accordingly, the agency solicited comments and data on that issue.

II. Overview

Today's final rule is based on the NPRM of August 30, 1994, summarized above. This final rule:

* Extends the motor vehicle door latch, hinge, and lock requirements of Standard No. 206 to the back doors of passenger cars and MPVs so equipped, including hatchbacks, station wagons, sport utility vehicles, and passenger vans with a GVWR of 4,536 kg (10,000 pounds) or less;

* Revises existing performance requirements and test procedures, insofar as they apply to back doors, and establishes an additional test for back door latches and hinges;

* Requires inertia load testing of back door latches in 3 directions instead of in any direction, as proposed in the NPRM;

* Requires door locks and interior and exterior release mechanisms only for back doors equipped with interior door handles or that lead directly into compartments containing one or more seating accommodations, instead of all back doors as proposed in the NPRM;

* Revises definition of ''back door'' from that proposed in the NPRM to exclude passenger car trunk lids as well as doors and windows composed entirely of glazing materials where the latches and/or hinges are mounted directly onto the glazing;

* In addition to adding a definition of ''back door,'' adds definitions of ''auxiliary door latch,'' ''fork-bolt,'' ''fork-bolt opening,'' and ''primary door latch'' to the standard; and

* Replaces the reference to Society of Automotive Engineers (SAE) Recommended Practices J839b, *Passenger Car Side Door Latch Systems,* May 1965, in S5.1.1.1, S5.1.1.2, and S5.2.1 with reference to the revised version of J839, which is dated June 1991; and the reference in S5.1.2 and S5.2.2 to SAE J934, *Vehicle Passenger Door Hinge Systems,* July 1965, with reference to the revised version of J934, which is dated July 1982.

III. Public Comments and Agency Responses

Fourteen interested parties submitted comments in response to the NPRM, including 2 private citizens, 2 safety organizations, 2 automotive trade associations, and 8 motor vehicle manufacturers. A summary of their significant comments and the agency's responses are set forth below.

(a) Vehicle Population Trends

The American Automobile Manufacturers Association (AAMA) commented that, since 1989, sales of hatchback style vehicles have been steadily declining, being replaced by sales of passenger minivans and sport utility vehicles. Referring to NHTSA's 1994 report, AAMA stated that back door openings in towaway crashes were the highest for hatchback cars (18,059) and lowest for minivans (767). AAMA argued that minivan and sport utility vehicles are rapidly replacing hatchback style vehicles and that the already low incidence of door openings and ejections should further decline as the vehicle mix changes in the future.

While NHTSA does not dispute the fact that the total number of back door openings in minivans is lower than in hatchback cars, the agency believes this discrepancy to be due primarily to the larger number of hatchbacks on the road compared to minivans. In its 1994 report, NHTSA analyzed the incidence of back door openings as a rate per 100 towaway crashes for minivans, utility vehicles, and hatchback cars. The agency's analysis shows that back door openings for minivans is about 1.9 compared to 3.6 for hatchback cars. The back door opening rates for utility vehicles were 2.6 and 4.1 for large and compact utility vehicles respectively. The overall rate for all light trucks equipped with back doors and hatches is 2.7 percent. Based on this data, AAMA's contention that increasing numbers of minivans in the fleet will reduce the number of back door openings and ejections in future crashes is not well founded, although if the observed rates continue into the future, the problem size could diminish somewhat.

(b) Load Requirements and Test Procedures

(1) Magnitude of Test Load

Toyota Motor Corporate Services of North America, Inc. (Toyota) suggested

that a test load of 8,900 Newtons (2,000 pounds), as proposed for Load Test Two, be applied to all back doors. Toyota further suggested that since the NPRM made no reference to doors equipped with more than one latch/striker set, the specified load be divided by the number of latch/striker sets fitted to a single door, and that the load so divided be applied simultaneously to each latch/striker set. Advocates for Highway and Auto Safety (Advocates) suggested that a load of 11,000 Newtons (2,500 pounds) be applied in all tests. Mazda (North America), Inc. (Mazda) believed that NHTSA simply proposed the same test loads as presently specified in Standard No. 206 and, along with Rockwell, suggested that the test loads for back doors be based on real world test data.

In 1989, NHTSA published a study entitled *An Evaluation of Door Locks and Roof Crush Resistance of Passenger Cars—FMVSS Nos. 206 and 216* (1989 study). That study, based on actual crash data, showed that the requirements of Standard No. 206 are responsible for a 15 percent reduction in side door ejections in rollover accidents. Real world crash data also showed that latches that met the 11,000 (2,500 pounds) and 8,900 Newton (2,000 pounds) loads in the longitudinal and transverse directions respectively were effective in preventing door openings while latches that did not meet those test requirements were not effective in preventing door openings. NHTSA believes, therefore, that the extension of the requirements of Standard No. 206 to back doors as proposed, including the test loads proposed in the NPRM, would be effective in preventing back door openings and occupant ejection through that route.

Based on the real world crash data discussed above, NHTSA has also concluded that the appropriate test load for Load Test Three is 8,900 Newtons (2,000 pounds). In most production back door latch designs, the latch would fail only if the striker disengages. This is seldom likely when loads are applied in the third direction perpendicular to the directions of Load Tests One and Two. In this test, the striker is usually pressing against the side of the fork bolt and the latch casing. If properly designed, a latch should be able to sustain a large force in this third direction. The results of the agency's back door latch tests showed that most latches tested can sustain a load of 8,900 Newtons (2,000 pounds).

NHTSA does not agree with Toyota's suggestion that the specified test load should be divided by the number of latches fitted to a single door. Real world crash data show that latch failures are the dominant cause of door openings and that they are seldom loaded symmetrically. Since side door latches that individually meet the requirements of Standard No. 206 have significantly reduced side door openings in crashes and have saved an estimated 400 lives per year, NHTSA has decided that the proposed requirements should be applied to each back door latch tested. However, this final rule does specify separate requirements for the primary and auxiliary latches, as discussed in III(b)(5) below.

(2) Directions of Load Tests One and Two

AAMA commented that the proposed load test directions of Load Tests One and Two need clarification. AAMA argued that while side door latches and hinges are typically mounted in body and door planes that intersect at approximately 90° to each other, back door latches and hinges may be at angles other than 90°. Nissan stated that NHTSA's proposed definition of ''hinge face plate'' does not adequately describe certain hinge systems. Specifically, Nissan stated that in some vehicle back doors, when closed, their hinges are positioned such that the faces do not bear load perpendicular to the mounting surfaces. Nissan further stated that some hinge systems may not even have an actual ''face.'' Thus, for a more objective test procedure, Nissan suggested applying Load Test One at the intersection of a line along the longitudinal vertical plane that passes through the center points of 2 hinges and the plane passing through 2 hinges and the latch. Load Test Two would then be applied along the longitudinal vertical plane in a direction perpendicular to Load Test One. AAMA stated that the addition of a definition of ''latch face'' is necessary to determine the surfaces to which the test loads must be perpendicular or parallel. Nissan stated that it interprets the term ''face plate'' to mean the area of the hinge that is mounted to the body and to the door and that acts as the load-bearing surface that supports the weight of the door.

NHTSA believes that Nissan's suggested loading directions will not, in many cases, be consistent with the loading directions of the hinges in actual crashes and that a new set of test devices other than those called for in J934 might be necessary to conduct Nissan's tests. NHTSA believes that its 3 orthogonal tests will cover all loading directions experienced in real world tests, irrespective of the configuration or orientation of the back doors. The agency continues to believe that the hinge tests should be conducted in accordance with SAE J934 and that Load Tests One and Two correspond to the longitudinal and transverse loads, respectively, as called for in SAE J934. The third direction is orthogonal to the other two. The agency believes, therefore, that the proposed test procedures are appropriate.

NHTSA acknowledges that the NPRM did not contain definitions of ''face plate'' and ''latch face.'' The NPRM did, however, refer in proposed Load Test One to SAE J839 where details of load directions are given. NHTSA believes that SAE J839 provides sufficient explanation of those terms and that no further definition is necessary in this rule.

(3) Load Test Three

Toyota, AAMA, and Rockwell Automotive (Rockwell) opposed Load Test Three for doors that open upward. These commenters stated, without explaining the basis for their position, that Load Test Three is unnecessary, and that NHTSA has not demonstrated any benefits that support the need for the test. Rockwell commented that a third load test is not the most effective means of reducing occupant ejections. That commenter suggested instead that a systems approach be taken in which the vehicle body together with the door system, taken as a whole, should be required to pass load tests. Conversely, the Insurance Institute for Highway Safety (IIHS) and Advocates both supported Load Test Three and urged that a load of 11,000 Newtons (2,500 pounds) be applied. IIHS suggested that Load Test Three be applied to all doors, including side doors.

NHTSA does not agree with Toyota, AAMA, and Rockwell that Load Test Three is not necessary. NHTSA notes that there are many design differences between side doors and back doors with regard to their mounting locations and orientations. Except for cargo-type doors and side-swing station wagon doors, most back doors open either in the rearward (longitudinal) or upward (vertical) directions. Those directions correspond generally to the longitudinal and transverse loading directions of side doors. As opposed to side doors, however, latch/hinge failure can occur in upward or rearward-opening back doors due to force in the third direction orthogonal to those directions. For example, in the event of a rear side impact, the back door latches and hinges are subject to a large force perpendicular to the upward and rearward-opening directions. Agency tests showed that the back doors of

some minivans opened when struck at the rear quarter panel. NHTSA believes that this happens when the door panel is displaced sideways, away from the plane of the door frame, forcing the latch to disengage. NHTSA believes, therefore, that in view of the loads to which back doors are subjected in some crashes, it is necessary to test back door latches and hinges in a third direction, orthogonal to the directions of loading to which side doors are normally subjected.

NHTSA declines to adopt the suggestion of IIHS that Load Test Three be applied to all doors. It is beyond the scope of the NPRM and this final rule to amend the requirements applicable to side doors, since this rulemaking action applies only to back doors. In any case, since side doors of production vehicles normally do not open in a vertical direction, NHTSA sees no need at this time to require side door latch and hinge tests in the direction of Load Test Three.

When proposing in the NPRM to apply Load Test Three to doors that open upward, it was NHTSA's belief that such doors were equipped with latch/striker assemblies only on the bottoms of the doors (see II.A.(1) of the NPRM, 59 FR 44694). NHTSA has learned, however, that the upward-swinging back doors of certain models of MPVs are equipped with latch/striker assemblies on the sides of the doors. Testing those latches in the direction of Load Test Three would be meaningless because in that test the load is applied in a direction in which such doors are not likely to open in a crash. This is the same reason Load Test Three does not apply to side doors. Accordingly, NHTSA has decided to apply Load Test Three to the hinges of back doors that swing upward to open, and to the latch/striker assemblies of upward-swinging doors that are equipped with a single latch/striker assembly.

(4) Inertia Load Requirements

As previously noted (see section I(a) above), Standard No. 206 currently provides that side door latches shall not disengage when an inertia load of 30g is applied in the longitudinal and transverse directions. The NPRM proposed to require back doors to withstand an inertia load of 30g in any direction. Nine commenters addressed this issue, 7 of whom opposed and 2 supported the proposal.

Toyota and Nissan stated that the omni-directional inertia load requirement is unnecessary and impractical, and that the current requirements applicable to side doors are sufficient to simulate real world crash experience. AAMA, Rockwell, and Volkswagen of America, Inc. (VW) stated that the omni-directional inertia load requirement is not practical and suggested instead that the load be applied in not more than 3 directions. Isuzu Motors Limited, Japan (Isuzu) argued that there is no need for an inertia load test for back doors. Mitsubishi Motors America, Inc (Mitsubishi) stated that the requirement, as proposed, would create repeatability problems. On the other hand, Advocates and IIHS supported the proposal, IIHS stating that the proposal is reasonable because inertia loads can occur in any direction in real world crashes.

NHTSA proposed the inertia load test requirement in the NPRM in the belief that in view of the many different orientations of back door latches and because real-world inertia forces are omni-directional, a large number of inertia load tests in various directions would be required to ensure adequate latch performance. However, in view of the manufacturers' comments that the requirement to test in any direction would be impractical and almost impossible to achieve, NHTSA is persuaded that, for practicability reasons, the number of inertia tests needs to be limited. Manufacturers argued that a requirement to test in any direction would require testing in theoretically infinite directions, which not only is not practical, but may not give sufficient emphasis on the worst case loading directions in real-world crashes. While it is difficult to predict inertial loading directions in real-world crashes, test requirements in the 3 principal directions would suffice to ensure that the latch would be unlikely to fail in many of the crash modes. In view of this, NHTSA concludes that 3 test load directions are adequate to ensure acceptable latch performance in the various loading conditions experienced in real world crashes. NHTSA has decided, therefore, to require inertia loads of 30g be applied to back door latch systems in the 3 directions specified in Load Tests One, Two, and Three.

(5) Abbreviated Requirements for Back Doors

As stated in the summary of current provisions in section (I(a)) above, Standard No. 206 specifies a set of full requirements for regular side doors and abbreviated requirements for cargo-type and sliding side doors. Ford Motor Company (Ford) and Isuzu argued that back doors and hatches are used primarily for cargo area access rather than for passenger access, therefore the abbreviated requirements applicable to hinged cargo-type and sliding side doors would likewise be appropriate for all back doors.

The agency has evaluated this suggestion and disagrees that only the abbreviated requirements should be applicable to all back doors. The agency's intent in this rulemaking action is to prevent the back door ejection of occupants by upgrading the latch/striker and hinge systems of back doors to reduce the incidence of unintended back door opening. NHTSA believes that this cannot be achieved by applying only the abbreviated requirements of Standard No. 206 to all back doors. Accordingly, the agency has decided that the primary latches of all back doors must meet the requirements of both the fully latched and the secondary latched positions. Auxiliary latches, if any, defined as a latch other than the primary latch of a multi-latch door system, need only meet the abbreviated requirements, that is, the requirements for the fully latched position (they need not have a secondary latch position or meet the strength requirements for the secondary latch).

On a related issue, AAMA commented that certain vehicle models are manufactured with more than one back door latch/striker set. AAMA suggested that, in that situation, it should be sufficient that one latch include both a fully latched and a secondary latched position while the others, designated as auxiliary latches, have a fully latched position only. NHTSA considers the AAMA suggestion to be reasonable because typically, the primary latch/striker assembly directly connects the left and the right segments of a double cargo type door system to each other while the auxiliary latches connect one segment of the door system to the roof and/or floor of the vehicle. In a crash, door openings would occur as a result of primary latch failure. Thus, even if the auxiliary latch(es) failed, the door segments could still be held together by the primary latch set because the loading on the different latches is in different directions. For that reason, simultaneous failure of the primary and auxiliary latches is highly unlikely, occurring only in very severe crashes. Accordingly, only the primary latch system in multiple-latch door systems is required to meet both the fully latched and the secondary latched position requirements of Standard No. 206. Auxiliary latches are required to meet the fully latched requirements only. They are not required to have a secondary latch position or meet the strength requirements for a secondary latch. ''Primary'' and ''auxiliary'' latches

are defined in the regulatory text of this final rule.

(6) Secondary Latched Position

AAMA, Mazda, Nissan, and Toyota opposed the proposal to require a secondary latched position in back doors on the basis that such a requirement would increase costs to manufacturers. Advocates and Rockwell, on the other hand, supported the proposal. NHTSA disagrees that this proposal would increase costs. On current designs, both the fully latched and secondary latched positions are provided by the same fork bolt detent lever. Typically, side door latches have two teeth on the detent lever with one tooth corresponding to the fully latched position and the other to the secondary latched position. The design load specifications for the latch assembly must be based on the load requirements for the fully latched position. Since the test load for the secondary latched position is less than that for the fully latched position, NHTSA believes the incremental cost for providing an additional tooth on the fork bolt detent lever to be negligible. This belief is based on a NHTSA cost/weight study, *Cost Comparison—Two MY 93 Rear Door Latch and Striker Sets,* NHTSA docket no. 94–70, Notice 01–001, in which the agency examined the costs of the 2 least expensive back door latches from the 8 latches it evaluated. One of the latches complied with the current requirements of Standard No. 206, while the other did not. The better latch had the lowest production and purchase prices. In addition, the better latch had both the fully latched and the secondary latched positions, while the inferior latch had only the fully latched position. As previously noted, NHTSA believes that the back door latches of most current production minivans and station wagons already have 2 latch positions. Accordingly, the agency does not believe that back door latches would require any major design changes in order to comply with the proposed fully latched and secondary latched position requirements.

(7) Incorporating Latch/Hinge Tests With Other Tests

Rockwell commented that NHTSA should consider incorporating latch/hinge tests into an existing crash test or a modified existing crash test. Advocates suggested that NHTSA consider roof strength performance standards in determining how roof strength in full rollover crashes affects back door retention.

The agency agrees with the concept of combining tests where possible, and has done so in certain recent rules (see, for example, S5.3.1 and S5.3.2, Standard No. 214, *Side impact protection.* S5.3.1 requires that any side door struck by the moving deformable barrier shall not totally separate from the vehicle. S5.3.2 requires that any door, including a rear hatchback or tailgate, not struck by the moving deformable barrier shall not disengage from the latched position, nor shall the latches or hinges separate or pull out of their anchorages). Taking such a step would not eliminate the necessity of bench testing of latches as components, however, since the agency wishes to assure the safety of latches under all possible crash conditions and loadings. To ensure that latches are safe in all crash modes, a system level test would require several tests which would be impractical and costly. In addition, if such an approach were used, the agency would need to develop new test procedures for such latch evaluation.

(c) Interior Lock Mechanisms

Except for most station wagons with third seats in the rear of the vehicle, many production vehicles have neither locking mechanisms nor inside door handles on their back doors. Thus, unlatching cannot be accomplished from the inside. The agency has received several complaints about this, citing the potential danger of being trapped in the rear compartment area of a vehicle, especially young children, in fire or submersion situations. While agency accident data do not show this as a significant safety problem, NHTSA nevertheless requested comments in the NPRM on whether the requirements for front and/or rear side door locks should be extended to back doors.

Four commenters opposed requiring door locks on the back doors, one supported it, and one (Mitsubishi) requested clarification of the term ''locking mechanism with an operating means in the interior of the vehicle'' (S4.1.3, Standard No. 206). AAMA, Toyota, and VW argued that there is no need or justification for back door locks. AAMA and Toyota repeated their assertions that back doors are not intended for passengers, and Rockwell stated that a properly designed system does not need a lock. Nevertheless, Toyota stated that lock requirements would be appropriate for back doors designed for passenger ingress and egress. VW stated that if a back door locking requirement were adopted, both the inside and outside door handles or other release mechanism should be inoperative when the locking mechanism is engaged. Rockwell stated that if a locking requirement were adopted, the inside handle should be disengaged either electrically or manually when the vehicle is moving. Rockwell also stated that if a lock were required, an inside handle should also be required. Advocates stated that locking requirements should be prescribed for all back doors, regardless of design, in view of increased risk of multiple back door ejections because of back door lock disengagements.

Standard No. 206 requires door locks in order to reduce unintentional door openings due to impact upon or movement of the inside or outside door handles (see 33 FR 6465, April 27, 1968). The standard requires the locks to engage so as to render the exterior front door handles inoperative and both the exterior and interior rear side door handles inoperative. Standard No. 206 does not specifically require doors to have door handles. However, many manufacturers already voluntarily provide inside handles on back doors of station wagons with third seats.

NHTSA concludes that back doors that lead directly into a passenger compartment or that are otherwise already equipped with an interior door handle shall be equipped with a locking mechanism with operating means in both the interior and exterior of the door. The reason for this is similar to the reason door locks are required for side doors, i.e., to prevent inadvertent door openings due to impact upon or movement of the interior or exterior door handles. NHTSA acknowledges that the back doors of some vehicles so equipped are designed for loading and unloading cargo rather than passengers. Nevertheless, sometimes those doors are also used for ingress and egress of back seat occupants. Therefore, if doors designed primarily for loading and unloading cargo lack an interior door handle, no door lock is required. If an interior door handle is present, this rule requires a means for making the door handle (a door release mechanism) inoperative when the locking mechanism is engaged. Further, when the locking mechanism is engaged, both the inside and outside door handles or other latch release controls must be inoperative.

(d) Vehicle and Other Exclusions

Five commenters addressed the applicability of the proposal to passenger motor vehicles with a GVWR of 4,536 kg (10,000 pounds) or less. The National Truck Equipment Association (NTEA) stated that most multi-stage produced vehicles can demonstrate compliance with safety standards only to the extent that the chassis manufacturer passes through its

certification. NTEA stated further that many such manufacturers will permit their certification to pass through only if no changes or alterations are made to their components by the final-stage manufacturer. Thus, NTEA argued that in cases where doors are widened or lengthened, such as for ambulances and vehicles for physically challenged persons, there can be no pass-through. In those situations, NTEA said that final-stage manufacturers, most of which are small businesses, would be obliged to assume the burden and expense of compliance testing themselves. NTEA suggested, therefore, that NHTSA either lower the GVWR level for this rule to 2,721 kg (6,000 pounds) or exclude all vehicles built on a truck type chassis in 2 or more stages and equipped with a body designed for carrying cargo, or work-performing or specialty equipment such as that found on ambulances, fire trucks, and the like.

AAMA suggested that hinged windows, liftglass, and glass hatches should be exempt from the proposed requirements because glazing in those configurations typically would yield in a crash before the hinges and latches would fail. Similarly, Isuzu suggested that the glass top portion of split doors on which the striker and hinges are installed on the glass itself should be exempt. Mazda stated that extending Standard No. 206 requirements to back doors that have large window openings or large glass areas will have little or no effect in reducing unbelted back door ejections since occupants could be ejected through the window opening. Finally, similar to NTEA's suggestion, Nissan suggested that back doors designed for loading and unloading cargo be excluded from the rule.

NHTSA recognizes that there is a substantial number of vehicles produced by businesses involved in manufacturing vehicles in more than one stage, and in converting or altering MPVs (e.g., van converters). Many of these are small businesses. Final-stage manufacturers typically install truck bodies and/or work-related equipment on chassis. Alterers modify the structure of new, completed vehicles. Under NHTSA's regulations, a final-stage manufacturer must certify that the completed vehicle conforms to all applicable safety standards, and alterers must certify that the altered vehicle continues to comply with all applicable safety standards.

The impact of this rule on commercial vehicles will not be significant. This rulemaking does not apply to buses or trucks such as cargo vans and many specially-designed and equipped commercial vehicles. The proposal only applied to passenger motor vehicles such as station wagons, hatchbacks, and MPVs with a GVWR of 4,536 kg (10,000 pounds) or less. An MPV is defined in 49 CFR 571.3 as a motor vehicle ''designed to carry 10 *persons* or less'' (emphasis added). Examples of MPVs include passenger vans and sport utility vehicles. MPVs also include motor homes, ambulances, and other customized *passenger* vehicles. Except for ambulances, some of those vehicles do not have back doors and will therefore not be affected by this rule.

In response to NTEA's concerns, as to final-stage manufacturers and alterers that produce vehicles that are subject to today's rule, it should not be difficult for those entities to satisfy their certification responsibilities with respect to Standard No. 206. NHTSA believes that many final-stage manufacturers should be able to meet the requirements of Standard No. 206 by utilizing the latch and hinge systems that were originally certified by the incomplete vehicle manufacturer as complying with the standard. Even if the final-stage manufacturer or alterer cannot use the original latch and hinge systems, it should not be unduly burdensome for those entities to obtain back door latch systems that comply with Standard No. 206 and certify compliance of their vehicles with the standard. Latch designs similar to those used for side doors can be used for back doors in many MPVs and are commercially available at low cost. Side doors of new vehicles are currently subject to Standard No. 206, and this rule essentially only extends those side door requirements to back doors. Thus, the certification responsibilities of final-stage manufacturers and alterers under Standard No. 206 with respect to back doors should be very similar to their current responsibilities under Standard No. 206 with respect to side doors. Moreover, the test burdens associated with this final rule are not significant.

This rule specifies a relatively simple component test that provides for bench testing of latches and hinges. It does not specify a dynamic test requirement. Manufacturers and alterers may, but are not required, to test their vehicles using the test procedures specified by Standard No. 206. The test procedures of Standard No. 206, like those of all other Federal motor vehicle safety standards, set forth the test procedures NHTSA uses in its compliance testing. In view of the standards to which manufacturers and alterers already certify and the manufacturing operations they undertake, final-stage manufacturers and alterers should have the necessary technical expertise and resources to certify to the back door standards. Alternatively, those final-stage manufacturers and alterers who install back door latches could require that their suppliers provide certification that their back door latch systems comply with the requirements of the standard. NHTSA does not require final-stage manufacturers and alterers themselves to conduct the testing specified in this final rule.

NHTSA agrees with the suggestions of AAMA and Isuzu that windows and doors on which latch/hinge systems are mounted directly onto the glazing (glass, glass/plastic, or plastic) should be excluded from the standard. In virtually all such cases, the glazing would fail before the latch and/or hinge fails. Thus, strengthening the latches and hinges on those doors would not prevent them from opening. The agency disagrees, however, with Mazda's suggestion that doors containing large glass areas be excluded. While it may be true that occupants could be ejected through large windows in back doors, the agency believes that ejection is less likely when the doors remain closed than if they opened. With a closed door, the occupant may be retained by the door structure and not ejected through the window. Thus, the agency has included back doors in this final rule, regardless of the size of the windows in those doors, because upgrading the strength of latches and hinges is needed to better ensure that those doors remain closed in a crash.

Finally, the agency does not agree with Nissan's suggestion that back doors designed for loading and unloading cargo be excluded from the rule. Even though back doors in many vehicles may be designed primarily for cargo loading and unloading, an unbelted occupant can be ejected through those doors in a crash. NHTSA's data show that back doors in general open more frequently than side doors, and that the majority of back door ejections occurred from hatchback cars, passenger vans, and utility vehicles. The back doors of those vehicles are designed primarily for cargo loading and unloading. However, occupant ejections through those doors, especially unbelted occupants, are a serious safety problem. Accordingly, by this final rule the agency extends the requirements of Standard No. 206 to the latch and hinge assemblies of back doors of passenger cars and MPVs, and to the locks and interior release mechanisms of back doors equipped with interior door handles or that are designed for passenger ingress and egress. Nissan's suggestion, therefore, is not adopted.

(e) Lead Time

NHTSA proposed in the NPRM a lead time of 2 years following the first September 1 after publication of a final rule, i.e., a lead time of 2–3 years. Six comments were received on this proposal. AAMA stated that more lead time and an appropriate phase-in period would be necessary to allow the time to evaluate and make necessary changes. Nissan and Mazda urged an effective date of 3 and 4 years, respectively, after the issuance of the final rule to allow for revisions, possibly extensive, of function and styling of body structures. Ford commented that it could not meet the proposed date because of the testing necessary to determine what changes would be needed, and suggested a phase-in period starting with model year 1998. VW stated that it could meet the proposed 2-year lead time if NHTSA adopted the substantive suggestions in their comments. Advocates commented that the proposed effective date was reasonable.

The agency continues to believe that most of the latches and hinges currently installed in back doors would meet the requirements of this final rule with little or no design changes, as discussed above. Manufacturers did not provide an analysis of why they could not comply with the proposed lead time. They only requested generally more time, without explaining why more time was necessary. Therefore, in the absence of data to the contrary, the agency considers September 1, 1997 to be sufficient lead time to meet the new requirements.

(f) Definitions

AAMA, Toyota, Nissan, and Mitsubishi commented that the proposed definition of ''back door'' is not clear because it neither distinguishes between doors and cargo compartment covers such as trunk lids of passenger cars, nor between doors and hinged windows. AAMA also stated that latch ''face'' needs to be defined to facilitate identification of the surface to which the test load must be parallel or perpendicular. AAMA also said that while door latches typically have planar (flat 2-dimensional characteristic) mounting surfaces, some designs may have mounting surfaces which are not planar or which are multi-planar. Toyota and Nissan stated that ''hinge face plate'' needs to be defined, Toyota suggesting that it should be defined as the mounting side of the hinge on the body of the vehicle.

The agency has decided, in response to these comments, to modify the definition of ''back door'' so that it clearly excludes trunk lids on passenger cars. The agency does not, however, adopt Toyota's and Nissan's suggestions to define ''latch face'' and ''hinge face plate'' since SAE J839 and SAE J934 provide detailed drawings showing how to mount the component on the test fixture and how and where to apply the required test loads.

(g) Belt Use

AAMA, Mazda, and Rockwell referred to NHTSA's 1990 denial of the IIHS petition, commenting that the situation has not changed that much since then, and that the agency's current analysis still has not shown that upgrading latch and hinge performance will reduce back door ejections. IIHS expressed approval that NHTSA is conducting this rulemaking at this time.

The commenters are correct that seat belts are effective in preventing ejections. However, as explained above, more than 95 percent of the back door ejections are passengers who were unbelted at the time of the crash. Since NHTSA's data show that fatalities from back door ejections have increased from an estimated 93 to 130 in the time period 1982–1988 to an estimated 147 in the time period 1988 to 1992, finding innovative ways to encourage seat belt use, as suggested by Mazda, is not by itself sufficient to address the problem of unbelted occupants. Thus, the agency believes that the significant increase in fatalities through back door ejections now justifies rulemaking action to upgrade the performance requirements of back door latches, hinges, and locks.

IV. Cost/Benefit Analysis

(a) Projected Vehicle Fleet

According to 1992 data available to NHTSA, 20 percent of passenger cars were hatchbacks and station wagons, while approximately 54 percent of all light trucks and vans (LTVs) were sport utility vehicles and passenger vans. Also, based on available data, the agency estimates that approximately 9.4 million passenger cars and 6.2 million LTVs will be sold in 1997. Applying the 1992 percentages to those figures, NHTSA estimates that of the 15.6 million vehicles predicted to be sold in 1997, approximately 5.2 million will be equipped with back doors, compared to 4.2 million in 1992. This represents an estimated 24 percent increase in the number of model year 1997 vehicles potentially affected by this rule compared to the number of model year 1992 vehicles that could have been so affected.

Similarly, the total vehicle population has increased since 1990 and is expected to continue to increase in the future. While the passenger car fleet has held relatively steady since 1990, the LTV fleet has increased by 17 percent. Assuming the continuation of those trends, NHTSA estimates a total vehicle fleet of approximately 194 million passenger cars and LTVs in the 1998–1999 period, up from a total vehicle fleet of 181.5 million in 1992. This represents an increase of about 7 percent. Assuming a similar increase in the target vehicle population, the agency estimates that in 1998 and beyond there will be approximately 160 fatalities and 200 serious injuries annually resulting from back door ejections.

(b) Costs and Potential Benefits

(1) Agency Analysis of Cost Data

As discussed above in section I(c)(6) regarding the costs and benefits of the proposal, NHTSA tested the back door latches of eight 1993 model year minivans for compliance with the current requirements of Standard No. 206 for the fully latched position. Two failed the longitudinal load test (equivalent to proposed Load Test One) and 1 failed the transverse load test (equivalent to Load Test Two), while the remaining latches complied with the standard's current requirements. The 3 failing latches had the highest, second highest and second lowest purchase prices. The lowest price latch gave a performance superior to the others and included both the fully latched and the secondary latched positions. In addition, the agency conducted a cost/weight study using 2 minivan latches that had the lowest and the second lowest prices among the 8 latches tested. The results showed that the estimated production cost for those 2 latches was less than $4.00, which is less than 15 percent of the consumer replacement cost charged by dealers. All latches, except the one that failed the Load Test Two requirement, had secondary latched positions. That latch has since been modified. The 1995 model year latch complies with all three load tests.

The agency also conducted latch tests on 12 different model year 1995 vehicles, using Load Tests One, Two, and Three. A total of 6 tests were conducted, composed of Load Test One in the fully and secondary latched positions; Load Test Two in the fully and secondary latched positions; and Load Test Three in the left and right loading directions. The test vehicles included 5 hatchbacks, 2 station wagons, and 5 MPVs. The 5 hatchbacks and 1 MPV did not have the secondary latched position. Among the 5

hatchback latches tested, 1 failed all tests, another failed Load Test One in both positions and Load Test Two in the secondary latched position. The remaining 3 hatchback latches failed Load Tests One and Two in the secondary latched position. Two station wagons passed all 6 tests. The MPV which did not have a secondary latched position failed Load Test Two in the fully latched position. One MPV failed Load Tests One and Two in the secondary latched position, another failed Load Test One in the fully latched position. Finally, a sport van failed 4 of the 6 tests. These tests showed again that latch price is not directly related to the latch's level of performance. The tests also showed that many of the current production light passenger vehicles already comply with the back door latch requirements of this rule. NHTSA believes that all production latches could comply with the requirements of this rule with only minor modifications, and that the costs of complying with the secondary latched position requirement are negligible to none. Thus, NHTSA believes that extending the requirements of Standard No. 206, including the addition of Load Test Three, will not result in any significant increase in production costs. The agency also concludes that the cost of complying with the secondary latched position requirement, if needed, could cost up to $1.00 per latch.

The agency also tested the back door hinge systems of 11 production vehicles. Load Test Two was not conducted on one vehicle hinge and Load Test Three was not conducted on 2 others. Those three components were judged to be strong, however, and their ultimate strength is expected to exceed the requirements as proposed. Aside from those 3, all hinges passed all the tests to which they were subjected.

To estimate the incremental new vehicle costs from upgrading hinges, the agency began by examining the replacement part costs of both the side door and back door hinges of a series of production vehicles. All vehicles had side doors with 2 hinges, but some of their back doors had auxiliary hinges that allowed those doors to open in different directions. The consumer replacement prices for primary hinges ranged from $40 to $120 for a pair of side door hinges and $20 to $100 for a pair of back door hinges. The agency calculated that the weighted average consumer price of replacement side and back door hinges would be about the same, approximately $53 per pair. Thus, NHTSA estimates that the incremental consumer cost to upgrade back door hinges, if improvements were required, would range from $0 to $20 with an average of about $10 per pair of replacement hinges. NHTSA emphasizes that those prices are estimated consumer replacement costs which are usually much higher than new vehicle consumer costs. Thus, based on NHTSA's estimates that incremental production costs are less than 15 percent of retail consumer costs, NHTSA estimates that the incremental production costs for necessary hinge improvements, if needed, would range from $0 to $3.00.

With respect to the issue of back door locks and interior release handles, NHTSA examined 24 station wagons, some with back doors designed for passenger ingress. Fourteen had either rear or side-facing third seats in the rear of the vehicles, the other 10 did not have the third row of seats. Twelve of the 14 vehicles in the former group had inside door handles, while none in the latter group did. It appears, therefore, that most manufacturers have already voluntarily addressed the issue of occupant ingress and egress through back doors by providing inside door handles on their station wagons equipped with a third row of seats. Accordingly, since most mid and large size station wagons already have a locking system similar to that specified in this final rule, as do ambulances and motor homes, NHTSA estimates that incremental costs for lock improvements needed to comply with the requirements of this final rule are minimal, no more than $1.00 per vehicle.

(2) Estimated Lives Saved

NHTSA has previously noted that the door latch requirements of Standard No. 206 have reduced the risk of side door ejections in rollover crashes by at least 15 percent, saving at least 400 lives per year (see section I(c)(6) above on costs and benefits of the proposal). The 1990 report concluded that a hatchback or tailgate was 3 times as likely to open in a crash as one of the front doors and 7–8 times as likely to open as one of the rear side doors. Further, the back door of a van is 4 times as likely to open as one of the front doors and twice as likely to open as the right rear side door (passenger vans seldom have a left side rear door). NHTSA believes, therefore, that extending the requirements of Standard No. 206 to back doors will be as effective in reducing back door openings as the standard's requirements have been in reducing side door openings. This is because the back door requirements will include 3 tests instead of the 2 currently required. Accordingly, by applying that effectiveness value to the estimated noncomplying target vehicle population, NHTSA estimates that 13 lives will be saved and 17 serious injuries prevented annually by extending the requirements of Standard No. 206 to back doors.

(3) Estimated Cost/Benefit Ratio

As discussed in section IV(a) above on the projected vehicle fleet, NHTSA projects that approximately 5.2 million vehicles equipped with back doors will be produced in 1997. This target vehicle fleet is expected to consist of 1.9 million passenger cars and 3.3 million other types of light passenger vehicles. NHTSA further estimates that approximately 0.4 of the 1.9 million passenger cars will be station wagons (0.24 million mid and large size station wagons and 0.16 small station wagons) and 1.5 million will be hatchbacks. Based on the agency's test results, NHTSA estimates that approximately 190,000 of the mid and large size station wagons and approximately 20,000 small station wagons will be equipped with third seats and, therefore, required to meet the proposed door lock requirements. In addition to station wagons, an estimated 2,500 ambulances, mostly with 2 back doors, and 20,000 motor homes, mostly with 1 back door, will be produced in 1997. The agency estimates, therefore, that approximately 240,000 vehicles produced in 1997 will be required to be equipped with back door locks. The agency also estimates that 1.5 million hatchbacks and 1.1 million MPVs produced in 1997 may require some minor latch modifications other than providing a secondary latched position at minimal cost. In all, NHTSA estimates that about 55 percent of the vehicles expected to be produced in 1997 will require some minor improvements in their latch and/or lock designs under this rule at a total estimated cost of up to $1,740,000, not including potential costs for compliance testing. The agency also concludes that hinge improvements will not be necessary. Accordingly, using the projected safety benefits of this final rule, that is, prevention of approximately 13 fatalities and 17 serious injuries annually, the annual cost of this rulemaking action is estimated to be approximately $112,000 per equivalent life saved.

V. Rulemaking Analyses and Notices

(a) Executive Order No. 12866 and DOT Regulatory Policies and Procedures

This rulemaking document was not reviewed under E.O. 12866, *Regulatory*

Planning and Review. NHTSA has considered the impact of this rulemaking action under the DOT's regulatory policies and procedures and has determined that it is not ''significant'' within the meaning of those policies and procedures.

The amendments promulgated by this final rule extend the requirements of Standard No. 206 to back doors of passenger cars and MPVs, including hatchbacks, passenger vans, station wagons and sport utility vehicles with a GVWR of 4,536 kg (10,000 pounds) or less that are so equipped. The agency believes that the economic impact of this rulemaking action is minimal both to manufacturers and consumers since agency data indicate that many back door latches, hinges, and locks already comply with the requirements of this rule. If any changes must be made by manufacturers to comply with this rule, the agency believes that such changes will be minor in nature, of very little or no cost, and easily capable of being accomplished within the lead time provided. As noted above, the total cost of bringing the remaining noncompliant vehicles into compliance is estimated to be up to a total of $1,740,000. Accordingly, a full regulatory evaluation was not prepared.

(b) Regulatory Flexibility Act

NHTSA has considered the effects of this rulemaking action under the Regulatory Flexibility Act. I hereby certify that the amendments promulgated by this final rule will not have a significant impact on a substantial number of small entities. Accordingly, a regulatory flexibility analysis has not been prepared.

The agency believes that few, if any, motor vehicle manufacturers qualify as small businesses. Small businesses, small organizations, and small governmental units may be affected by this rulemaking action only to the extent that they could pay a few dollars more for the vehicles that they purchase with the complying back door latches, hinges, and locks.

(c) Executive Order 12612, Federalism

NHTSA has analyzed this rulemaking action in accordance with the principles and criteria of Executive Order No. 12612 and has determined that this rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

(d) National Environmental Policy Act

NHTSA has analyzed this rulemaking action for the purposes of the National Environmental Policy Act and has determined that implementation of this rulemaking action will not have any significant impact on the quality of the human environment.

(e) Paperwork Reduction Act

In accordance with the Paperwork Reduction Act of 1980, P.L. 96–511, NHTSA states that there are no information collection requirements associated with this rulemaking action.

(f) Civil Justice Reform

This rule does not have any retroactive effect. Under 49 U.S.C. 30103(b), whenever a Federal motor vehicle safety standard is in effect, a state or political subdivision thereof may prescribe or continue in effect a standard applicable to the same aspect of performance of a motor vehicle only if the standard is identical to the Federal standard. However, a state may prescribe a standard for a motor vehicle or equipment obtained for its own use that imposes a higher performance requirement than the Federal standard. 49 U.S.C. 30161 sets forth a procedure for judicial review of final rules establishing, amending or revoking Federal motor vehicle safety standards. A petition for reconsideration or other administrative proceedings is not required before parties may file suit in court.

List of Subjects in 49 CFR Part 571

Imports, Motor vehicle safety, Motor vehicles, Rubber and rubber products, Tires, Incorporation by reference.

PART 571—FEDERAL MOTOR VEHICLE SAFETY STANDARDS

In consideration of the foregoing, 49 CFR Part 571 is amended as follows:

1. The authority citation for Part 571 continues to read as follows:

Authority: 49 U.S.C. 322, 30111, 30115, 30117, and 30166; delegations of authority at 49 CFR 1.50.

2. Section 571.206 is amended by revising S1; adding the definitions of ''auxiliary door latch,'' ''back door,'' ''fork-bolt,'' ''fork-bolt opening,'' and ''primary door latch'', in alphabetical order, to S3; revising S4, S4.1.1.1, S4.1.1.2, S4.1.2, S4.2.1.1, S4.2.1.2, S4.2.2, and S4.3; adding S4.4 through S4.5; revising the heading of S5.1; revising S5.1.1.1, S5.1.1.2, S5.1.2, S5.2.1, S5.2.2, and S5.3; revising the heading of S5.2; adding S5.4 through S5.5; and adding Figure 1 to the end of the section, to read as follows:

§ 571.206 Standard No. 206, Door locks and door retention components.

S1. *Purpose and Scope.* This standard specifies requirements for door locks and door retention components including latches, hinges, and other supporting means, to minimize the likelihood of occupants being thrown from the vehicle as a result of impact.

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S3. *Definitions.*

Auxiliary door latch means a latch or latches, other than the primary latch or latches, fitted to a back door or back door system that is equipped with more than one latch.

Back door means a door or door system on the back end of a vehicle through which passengers can enter or depart the vehicle, or cargo can be loaded or unloaded, except—

(1) the trunk lid of a passenger car whose trunk is separated from the passenger compartment by a partition; and

(2) a door or window composed entirely of glazing material whose latches and/or hinges are attached directly onto the glazing material.

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Fork-bolt means the part of the door latch that engages the striker when in a latched position.

Fork-bolt opening means the direction opposite to that in which the striker enters to engage the fork-bolt.

Primary door latch means, with respect to a back door or back door system, the latch or latches equipped with both the fully latched position and the secondary latched position.

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S4. *Requirements.* Components on any side door leading directly into a compartment that contains one or more seating accommodations, and components on any back door of a passenger car or multipurpose passenger vehicle manufactured on or after September 1, 1997 with a gross vehicle weight rating of 4,536 kilograms (10,000 pounds) or less shall conform to this standard. A particular latch or hinge assembly (i.e., test specimen) need not meet further requirements after having been subject to and having met any one of the requirements of S4 or S5.1 through S5.4. Components on folding doors, roll-up doors, doors that are designed to be easily attached to or removed from motor vehicles manufactured for operation without doors, and doors that are equipped with wheelchair lifts and that are linked to an alarm system consisting of either a flashing visible signal located in the driver's compartment or an alarm audible to the driver that is activated when the door is open, need not conform to this standard.

S4.1 *Hinged Side Doors, Except Cargo-Type Doors.*

* * * * *

S4.1.1.1 *Longitudinal Load.* The door latch and striker assembly, when in the fully latched position, shall not separate when a longitudinal load of 11,000 Newtons (2,500 pounds) is applied. When in the secondary latched position, the door latch and striker assembly shall not separate when a longitudinal load of 4,450 Newtons (1,000 pounds) is applied.

S4.1.1.2 *Transverse Load.* The door latch and striker assembly, when in the fully latched position, shall not separate when a transverse load of 8,900 Newtons (2,000 pounds) is applied. When in the secondary latched position, the door latch and striker assembly shall not separate when a transverse load of 4,450 Newtons (1,000 pounds) is applied.

* * * * *

S4.1.2 *Door Hinges.* Each door hinge system shall support the door and shall not separate when a longitudinal load of 11,000 Newtons (2,500 pounds) is applied. Similarly, each door hinge system shall not separate when a transverse load of 8,900 Newtons (2,000 pounds) is applied.

* * * * *

S4.2 *Hinged Cargo-Type Side Doors.*

S4.2.1 *Door Latches.*

S4.2.1.1 *Longitudinal Load.* Each latch system, when in the latched position, shall not separate when a longitudinal load of 11,000 Newtons (2,500 pounds) is applied.

S4.2.1.2 *Transverse Load.* Each latch system, when in the latched position, shall not separate when a transverse load of 8,900 Newtons (2,000 pounds) is applied. When more than one latch system is used on a single door, the load requirement may be divided among the total number of latch systems.

S4.2.2 *Door Hinges.* Each door hinge system shall support the door and shall not separate when a longitudinal load of 11,000 Newtons (2,500 pounds) is applied, and when a transverse load of 8,900 Newtons (2,000 pounds) is applied.

S4.3 *Sliding Side Doors.* The track and slide combination or other supporting means for each sliding door shall not separate when a total transverse load of 17,800 Newtons (4,000 pounds) is applied, with the door in the closed position.

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S4.4. *Hinged Back Doors.*

S4.4.1 *Door Latches.* Each back door system shall be equipped with at least one primary latch and striker assembly.

S4.4.1.1 *Load Test One.* The primary door latch and striker assembly, when in the fully latched position, shall not separate when a load of 11,000 Newtons (2,500 pounds) is applied in the direction perpendicular to the face of the latch (corresponding to the longitudinal load test for side door latches) such that the latch and the striker anchorage are not compressed against each other. When in the secondary latched position, the primary latch and striker assembly shall not separate when a load of 4,450 Newtons (1,000 pounds) is applied in the same direction.

S4.4.1.2 *Load Test Two.* The primary door latch and striker assembly, when in the fully latched position, shall not separate when a load of 8,900 Newtons (2,000 pounds) is applied in the direction of the fork-bolt opening and parallel to the face of the latch (corresponding to the transverse load test). Figure 1 depicts the loading direction for this test. When in the secondary latched position, the primary latch and striker assembly shall not separate when a load of 4,450 Newtons (1,000 pounds) is applied in the same direction.

S4.4.1.3 *Load Test Three.* The primary door latch and striker assembly on back doors equipped with a latch and striker assembly at the bottom of the door and that open upward shall not disengage from the fully latched position when a load of 8,900 Newtons (2,000 pounds) is applied in a direction orthogonal to the directions specified in S4.4.1.1 and S4.4.1.2 above.

S4.4.1.4 *Inertia Load.* The primary door latch shall not disengage from the fully latched position when an inertia load of 30g is applied to the door latch system, including the latch and its activation mechanism with the locking mechanism disengaged, in the directions specified in S4.4.1.1, S4.4.1.2, and S4.4.1.3.

S4.4.1.5 *Auxiliary Door Latches.* Each auxiliary back door latch and striker assembly shall be provided with a fully latched position and shall comply with the requirements specified in S4.4.1.1, S4.4.1.2, and S4.4.1.4.

S4.4.2 *Door Locks.* Each back door system equipped with interior door handles or that leads directly into a compartment that contains one or more seating accommodations shall be equipped with a locking mechanism with operating means in both the interior and exterior of the vehicle. When the locking mechanism is engaged, both the inside and outside door handles or other latch release controls shall be inoperative.

S4.4.3 *Door Hinges.*

S4.4.3.1 *Load Test One.* Each back door hinge system shall support the door and shall not separate when a load of 11,000 Newtons (2,500 pounds) is applied perpendicular to the hinge face plate (longitudinal load test) such that the hinge plates are not compressed against each other.

S4.4.3.2 *Load Test Two.* Each back door hinge system shall not separate when a load of 8,900 Newtons (2,000 pounds) is applied perpendicular to the axis of the hinge pin and parallel to the hinge face plate (transverse load test) such that the hinge plates are not compressed against each other.

S4.4.3.3 *Load Test Three.* Each hinge system on back doors that open upward shall not separate when a load of 8,900 Newtons (2,000 pounds) is applied in the direction of the axis of the hinge pin.

S4.5 *Sliding Back Doors.* The track and slide combination or other supporting means for each sliding door shall not separate when a total longitudinal load of 17,800 Newtons (4,000 pounds) is applied, with the door in the closed position. * * *

S5.1. *Hinged Side Doors, Except Cargo-Type Doors.* * * *

S5.1.1.1 *Longitudinal and Transverse Loads.* Compliance with paragraphs S4.1.1.1 and S4.1.1.2 shall be demonstrated in accordance with paragraph 5 of Society of Automotive Engineers Recommended Practice J839, *Passenger Car Side Door Latch Systems,* June 1991.

S5.1.1.2 *Inertia Load.* Compliance with S4.1.1.3 shall be demonstrated by approved tests or in accordance with paragraph 6 of Society of Automotive Engineers Recommended Practice J839, *Passenger Car Side Door Latch Systems,* June 1991.

S5.1.2 *Door Hinges.* Compliance with S4.1.2 shall be demonstrated in accordance with paragraph 4 or 5, as appropriate, of Society of Automotive Engineers Recommended Practice J934, *Vehicle Passenger Door Hinge Systems,* July 1982. For piano-type hinges, the hinge spacing requirements of SAE J934 shall not be applicable and arrangement of the test fixture shall be altered as required so that the test load will be applied to the complete hinge.

S5.2 *Hinged Cargo-Type Side Doors.*

S5.2.1 *Door Latches.* Compliance with S4.2.1 shall be demonstrated in accordance with paragraphs 5.1 and 5.3, SAE Recommended Practice J839, *Passenger Car Side Door Latch Systems,* June 1991. An equivalent static test fixture may be substituted for that shown in Figure 2 of SAE J839, if required.

S5.2.2 *Door Hinges.* Compliance with S4.2.2 shall be demonstrated in accordance with paragraph 4 or 5, as appropriate, of SAE Recommended Practice J934, *Vehicle Passenger Door Hinge Systems,* July 1982. For piano-type hinges, the hinge spacing requirement of SAE J934 shall not be applicable and arrangement of the test fixture shall be altered as required so that the test load will be applied to the complete hinge.

S5.3 *Sliding Side Doors.* Compliance with S4.3 shall be demonstrated by applying an outward transverse load of 8,900 Newtons (2,000 pounds) to the load-bearing members at the opposite edges of the door (17,800 Newtons (4,000 pounds) total). The demonstration may be performed either in the vehicle or with the door retention components in a bench test fixture.

S5.4 *Hinged Back Doors.*

S5.4.1 *Door Latches.*

S5.4.1.1 *Load Tests One, Two, and Three.* Compliance with S4.4.1.1, S4.4.1.2, and S4.4.1.3 shall be demonstrated in the same manner as specified in S5.1.1.1, except that the loads shall be in the directions specified in S4.4.1.1, S4.4.1.2, and S4.4.1.3. The same test device may be used for Load Tests Two and Three.

S5.4.1.2 *Inertia Load.* Compliance with S4.4.1.4 shall be demonstrated in the same manner as specified in S5.1.1.2.

S5.4.2 *Door Hinges.* Compliance with S4.4.3.1, S4.4.3.2, and S4.4.3.3 shall be demonstrated in the same manner as specified in S5.1.2, except that the loads shall be in the directions specified in S4.4.3.1, S4.4.3.2, and S4.4.3.3. The same test device may be used for Load Tests Two and Three.

S5.5 *Sliding Back Doors.* Compliance with S4.5 shall be demonstrated by applying an outward longitudinal load of 8,900 Newtons (2,000 pounds) to the load bearing members at the opposite edges of the door (17,000 Newtons (4,000 pounds) total). The demonstration may be performed either in the vehicle or with the door retention components in a bench test fixture.

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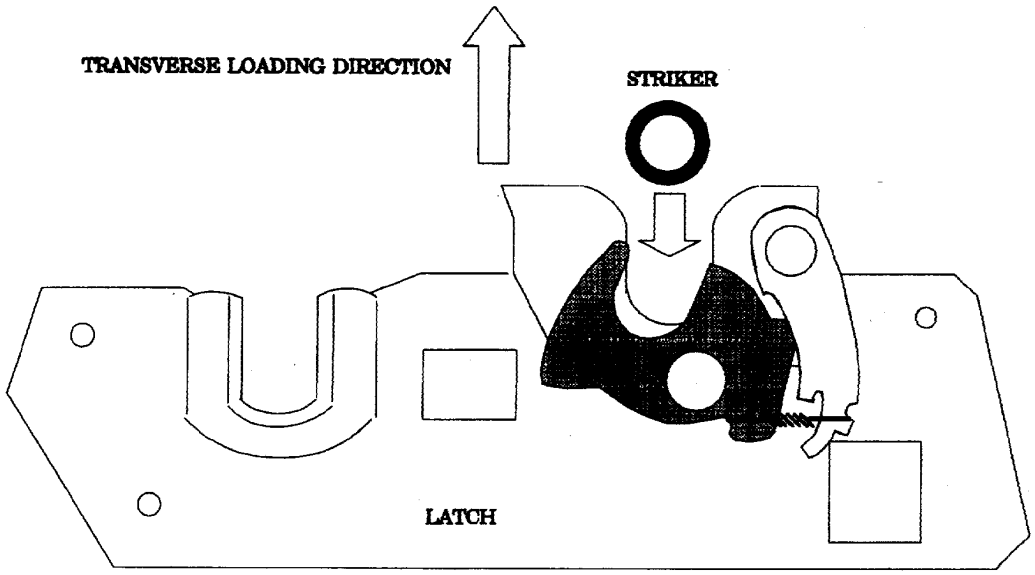

Figure 1.- Top View of a Typical Back Door Latch

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Ricardo Martinez,

Administrator.

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