an information packet containing the following items:

* * * * *

(i) * * *

(2) The automatic on-board recording device permits duty status to be updated only when the commercial motor vehicle is at rest, except when registering the time a commercial motor vehicle crosses a State boundary;

* * * * *

(4) The automatic on-board recording device warns the driver visually and/or audibly that the device has ceased to function. Devices installed and operational as of October 31, 1988, and authorized to be used in lieu of the handwritten record of duty status by the FHWA are exempted from this requirement.

* * * * *

(7) The on-board recording device/system identifies sensor failures and edited data when reproduced in printed form. Devices installed and operational as of October 31, 1988, and authorized to be used in lieu of the handwritten record of duty status by the FHWA are exempted from this requirement.

* * * * *

(j) * * *

(2) * * *

(iv) The motor carrier or driver has tampered with or otherwise abused the automatic on-board recording device on any commercial motor vehicle.

PART 396—[AMENDED]

61. The authority citation for part 396 is revised to read as follows:

Authority: 49 U.S.C. 31133, 31136, and 31502; 49 CFR 1.48.

62. Section 396.23 is amended by revising paragraph (a) to read as follows:

§ 396.23 Equivalent to periodic inspection.

(a) The motor carrier may meet the requirements of § 396.17 through a State or other jurisdiction's roadside inspection program. The inspection must have been performed during the preceding 12 months. In using the roadside inspection, the motor carrier would need to retain a copy of an annual inspection report showing that the inspection was performed in accordance with the minimum periodic inspection standards set forth in appendix G to this subchapter. When accepting such an inspection report, the motor carrier must ensure that the report complies with the requirements of § 396.21(a).

* * * * *

PART 397—[AMENDED]

63. The authority citation for part 397 continues to read as follows:

Authority: 49 U.S.C. 5101 et seq.; and 49 CFR 1.48.

64. Section 397.1 is amended by revising paragraph (a) to read as follows:

§ 397.1 Application of the rules in this part.

(a) The rules in this part apply to each motor carrier engaged in the transportation of hazardous materials by a motor vehicle which must be marked or placarded in accordance with § 177.823 of this title and to—

(1) Each officer or employee of the motor carrier who performs supervisory duties related to the transportation of hazardous materials; and

(2) Each person who operates or who is in charge of a motor vehicle containing hazardous materials.

* * * * *

65. In appendix B to subchapter B, paragraph 3 is revised to read as follows:

APPENDIX B TO SUBCHAPTER B—SPECIAL AGENTS

* * * * *

3. *Definition of special agent.* Federal Highway Administration (FHWA) employees charged with enforcing 42 U.S.C. 4917 and 49 U.S.C. 104, 501 et seq., 521 et seq., 5101 et seq., 5901 et seq., 31101–31104, 31108, 31131 et seq., 31161, 31301 et seq., and 31501 *et seq.*, including employees within the Office of Motor Carriers and such other persons as the Federal Highway Administrator or the Associate Administrator for Motor Carriers may specify in writing, in possession of credentials issued by the FHWA, are special agents. They are hereby authorized to inspect and copy records and to inspect and examine lands, buildings, and equipment to the manner and extent provided by law.

* * * * *

[FR Doc. 95–18382 Filed 7–27–95; 8:45 am]

BILLING CODE 4910–22–P

National Highway Traffic Safety Administration

49 CFR Part 571

[Docket No. 88–06, Notice 24]

RIN 2127–AE49

Federal Motor Vehicle Safety Standards; Side Impact Protection—Light Trucks, Buses and Multipurpose Passenger Vehicles

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

ACTION: Final rule.

SUMMARY: This rule amends Federal Motor Vehicle Safety Standard No. 214, ''Side Impact Protection,'' to extend its dynamic testing requirements to light trucks, multipurpose passenger vehicles and buses with a gross vehicle weight rating (GVWR) of 6,000 pounds or less. (Light trucks, multipurpose passenger vehicles and buses are hereinafter referred to as LTVs.) The dynamic testing requirements currently apply to passenger cars only. This rule extends the dynamic procedures now used to test passenger cars, without modification, to LTVs. Based on current vehicle sales data, the agency estimates that the percentage of LTVs will increase significantly in the future. Small LTVs, which are potentially vulnerable in side crashes, will comprise much of the LTV fleet by the year 2000. This extension ensures these vehicles provide side impact protection for the same crash conditions under which passenger cars provide such protection. It also furthers the goal of the NHTSA Authorization Act of 1991 (sections 2500–2509 of the Intermodal Surface Transportation Efficiency Act (''ISTEA'')), which directed NHTSA to initiate rulemaking on LTV side impact safety.

DATES: This rule is effective on September 1, 1998.

Petitions for reconsideration of the rule must be received by August 28, 1995.

ADDRESSES: Petitions for reconsideration should refer to the docket and number of this document and must be submitted to: Administrator, Room 5220, National Highway Traffic Safety Administration, 400 Seventh Street S.W., Washington, D.C., 20590.

FOR FURTHER INFORMATION CONTACT: Dr. Joseph Kanianthra, Chief, Side and Rollover Crash Protection Division, Office of Vehicle Safety Standards (telephone 202–366–4924), or Ms. Deirdre Fujita, Office of the Chief Counsel (202–366–2992), National Highway Traffic Safety Administration, 400 Seventh St., S.W., Washington, D.C., 20590.

SUPPLEMENTARY INFORMATION:

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I. Background

This rule amends Federal Motor Vehicle Safety Standard No. 214, ''Side Impact Protection,'' to extend its dynamic testing requirements to LTVs of 6,000 pounds or less gross vehicle weight rating (GVWR). The dynamic testing requirements currently apply to passenger cars. The effect of this amendment is to ensure that smaller LTVs provide side impact protection under the same crash conditions under which passenger cars provide such protection. Larger LTVs and many smaller LTVs will be able to comply with the requirements of this standard without any modification. A notice of proposed rulemaking (NPRM) setting forth the proposals upon which this rule is based was published June 15, 1994 (59 FR 30756).

a. Current Requirements

Standard 214 specifies two sets of requirements for the vehicles to which it applies. The first is composed of quasi-static side door strength requirements for passenger cars and LTVs with a GVWR of 10,000 pounds or less. Those requirements seek to mitigate occupant injuries in side impacts by reducing the extent to which the side door structure of a vehicle is pushed into the occupant compartment during a side impact. Under the requirements, side doors must resist crush forces that are applied against the door's outside surface in a laboratory test. The requirements have applied to passenger cars since January 1, 1973, and were extended to LTVs on September 1, 1993 by a final rule published in the **Federal Register** (56 FR 27427) on June 14, 1991.

The second set of requirements comprise the dynamic testing requirements for passenger cars. NHTSA adopted these requirements in a rule published on October 30, 1990 (55 FR 45722). Under the requirements, a passenger car must provide protection to occupants' thoracic and pelvic regions as measured by the accelerations registered on an instrumented side impact dummy (SID) in a full-scale crash test. In the test, the car (known as the ''target'' car) is struck in the side by a moving deformable barrier (MDB) simulating another passenger car. A phase-in for these new requirements began on September 1, 1993.

The MDB specified in the dynamic test procedure weighs, nominally, 3,000 pounds, and its contact face is 22 inches in height, 66 inches in width and 33 inches high (measured from the ground to the top edge of the barrier face). NHTSA derived the weight of the barrier from the median curb weight of passenger cars (3,181 pounds in 1989) and light trucks (3,958 pounds in 1989). This resulted in a weighted average of 3,423 pounds, which was adjusted downward to account for the then-projected lower weight of vehicles in the 1990's.

Under the test procedure, the front and rear wheels of the MDB are ''crabbed'' at an angle of 27 degrees. With the MDB face oriented at a right angle to the target car, the MDB moves at an angle of 27 degrees and at a speed of 33.5 mph into the side of the target car. These aspects of the procedure were selected so that the test simulates the vehicle kinematics and crash forces that a car would experience in a real world side crash in which it was traveling at 15 mph and was struck perpendicularly by a vehicle traveling at 30 mph. The agency selected the 30 mph/15 mph combination because it represents the mid-range of the speed in real-world side crashes, is the threshold speed for serious chest injury, and because countermeasures (e.g., increased padding and/or reinforced structure) designed for the 30 mph/15 mph combination are likely to be effective in reducing chest injury potential over most of the range of impact speeds encountered in real world side crashes.

b. Purpose of Today's Rule

This rulemaking addresses several NHTSA goals. This rulemaking is a first step towards establishing appropriate dynamic testing requirements for LTVs. An advance notice of proposed rulemaking (53 FR 31716) published in 1988 discussed possible side impact protection requirements for LTVs in areas where requirements had been or were under consideration for passenger cars. That notice announced that NHTSA was considering developing dynamic test procedures and performance requirements for LTVs, similar to those proposed at that time and later adopted for passenger cars.

Amending Standard 214 to address side impact protection for LTVs also furthers the goals of the NHTSA Authorization Act of 1991 (sections 2500–2509 of the Intermodal Surface Transportation Efficiency Act (''ISTEA'')). In 1991, Congress directed the agency to initiate and complete rulemaking to address the possible extension of Standard 214's dynamic side impact requirements for passenger cars to MPVs and trucks with a GVWR of 8,500 pounds or less and an unloaded vehicle weight of 5,500 pounds or less. In response, NHTSA initiated rulemaking by publishing another advance notice of proposed rulemaking (ANPRM) on June 5, 1992 (57 FR 24009). Section 2502 of ISTEA provides that rulemaking is considered completed when NHTSA either promulgates a final rule or decides not to promulgate a rule. Today's final rule extending Standard 214's dynamic side impact protection requirements to LTVs completes the ISTEA-directed rulemaking.

This rulemaking also marks one of the final phases of the agency's long-term endeavor to extend most of its passenger car standards to LTVs. This effort has resulted in a number of rulemaking actions over the past decade. Among the passenger car safety standards extended to LTVs were Standards 202 (requiring head restraints), 204 (limiting rearward movement of steering column in a crash), 208 (requiring dynamic testing of safety belts for LTVs, and in model year 1999, requiring air bags in 100 percent of LTVs), and 216 (requiring roof crush strength). NHTSA extended those standards to ensure that LTVs are as safe as passenger cars in their crashworthiness performance, since they are being purchased in increasing numbers and are increasingly being used as passenger-carrying vehicles.

These increases can be illustrated by registration data. Data from R.L. Polk show that LTV registrations have increased from 33 million in 1983 to 45 million in 1988, and to 57 million in 1993. From 1983 to 1993, the percentage of light trucks in the compact (now termed ''small and middle'') category increased from 39 percent to 63 percent.

Both Congress' ISTEA directive on LTV side impact protection and NHTSA's endeavor to extend passenger car standards to LTVs stem from the convergence of LTVs and passenger cars in terms of their design and use (with many LTVs in the compact size range used as personal transportation rather than for cargo). With LTVs carrying more and more passengers, there has been a commensurate increase in fatalities. The overall increase in LTV fatalities from 1985 to 1993 was 25 percent. In the 1985 data from NHTSA's Fatal Accident Reporting System (FARS), there were 6,763 fatalities among occupants of LTVs: 115 in small

vans; 722 in large vans; 1,686 in small pickups; 3,342 in large pickups and 898 in other LTVs. By comparison, in 1993, there were 8,487 fatalities that occurred in LTVs. The fatality distribution by LTV vehicle category was: 576 in small vans; 545 in large vans; 2,519 in small pickups; 3,357 in large pickups; and 1,389 in sport utility vehicles.

c. Side Impact Safety Problem

The number of fatalities in LTV side impacts increased faster than the overall fatality rate. In 1984, LTV side impacts resulted in 1,197 fatalities; in 1991, there were approximately 1,676 fatalities in side crashes. NHTSA estimates [1] that, by the mid-1990's, side impacts will result in 1,763 fatalities for LTV occupants sitting in the front or second seat, annually. Front seat occupants will account for 1,705 of the fatalities, with occupants of the second seat accounting for 58 fatalities (less than 2 percent). Side impacts are also expected to account for about 6,000 serious but non-fatal injuries to occupants sitting in the front or second seat, annually. These injuries are of a level of 3 to 5 on the Abbreviated Injury Scale (AIS). (An AIS level is a measurement that rates the severity of any injury. For example, a minor injury is rated at the AIS 1 level. At the other extreme, a fatal injury is rated at AIS 6.)

The side impact protection requirements in Standard 214 are two-fold. The quasi-static strength requirements address intrusion-related injuries, such as in narrow object side crashes into poles or trees (fixed objects), by limiting the amount of intrusion. The standard's dynamic requirements primarily address LTV occupant fatalities and serious injuries that are likely to occur due to occupant contact against the side interior of the struck vehicle in a two-vehicle collision. (See Final Regulatory Impact Analysis for the rule adopting dynamic test requirement for passenger cars, Docket number 88–06, notice 8, DOT HS 807–641, August 1990.)

The dynamic side impact requirements address primarily chest and pelvic injury, using dummies that are instrumented with four accelerometers to measure accelerations in the dummy ribs and spine, and pelvic region. The values measured in the ribs and spine are used in determining the ''Thoracic Trauma Index (TTI(d)).'' TTI(d) is an injury criterion that measures the risk of thoracic injury of an occupant in a side impact. The fourth accelerometer, mounted in the pelvic cavity, measures the potential risk for pelvic injury. To meet Standard 214's side impact protection requirements, the TTI(d) and pelvis measurements must be below specified maximum values.[2]

NHTSA estimates that, by the mid-1990's, about 14 percent of the 1,763 LTV fatalities (i.e., 245 fatalities per year) and roughly 14 percent of the 6,000 serious (AIS 3–5) thoracic injuries (i.e., 857 injuries per year) would be due to contacts between an occupant's chest, abdomen, back and pelvis and the struck vehicle's side interior. The agency believes that approximately 88 percent of these fatalities and injuries will occur in side impacts with LTVs, heavy vehicles, and fixed objects, rather than in side impacts with passenger cars. Looking solely at multi-vehicle side impacts between LTVs and other light vehicles, approximately 78 percent of the LTV fatal ''torso'' injuries are caused by other light and heavy trucks, and only 22 percent, by passenger cars (mostly large passenger cars).

II. The NPRM

Following the ISTEA-directed ANPRM initiating rulemaking on dynamic side impact protection for LTVs, NHTSA published the June 1994 NPRM which set forth the proposal upon which today—s rule is based. The NPRM proposed to extend Standard 214's dynamic side impact protection requirements to LTVs with a GVWR or 8,500 pounds or less and an unloaded vehicle weight of 5,500 pounds or less.

Under the proposal, all of the provisions in the standard that currently apply to passenger cars would have been extended to LTVs, but the test procedure would have been modified by raising the height and weight of the moving barrier used to strike the tested vehicle. The agency proposed this modification for several reasons. One was the agency's tentative conclusion that ''a simple extension of Standard No. 214's dynamic side impact protection requirements to LTVs would result in few, if any, benefits.'' The agency noted its related concern that a simple extension ''would result in significant compliance costs without concomitant benefits.'' Another reason was the design differences between passenger cars and LTVs, and in the size and weight of striking vehicles that caused the most extensive safety problems in side crashes. The modifications were intended to make the test ''more representative of the side impact crash conditions causing fatalities and serious injuries in LTVs.''

Occupants of LTVs are generally seated higher than those in passenger cars. Because of this, LTV occupants generally face a smaller risk of side impact thoracic injury, than passenger car occupants in a majority of side crashes (i.e., in crashes in which passenger cars are the striking vehicles). If a passenger car (which composes the majority of the current vehicle fleet and represents the most probable striking vehicle) strikes another passenger car in a side impact, the striking vehicle typically pushes the inside door panel of the struck vehicle at a relatively high velocity directly into the thorax of an occupant sitting next to the door. However, if a passenger car strikes an LTV in a side impact, the primary part of the side structure that is pushed inward is more likely to be below the thorax of an adjacent occupant, thereby resulting in smaller injury-producing loads to the occupant's thorax. Further, LTVs typically have higher sill and side structures than passenger cars. Those structures limit the loads transmitted by a passenger car directly to the door, thus reducing the door contact velocity to the occupant.

Because of these differences, the fatality rate for occupants of LTVs in all side impact crashes is less than half of that for passenger cars. The LTV occupant side impact fatality rate per million registered vehicles is 25.7, as compared to 53.3 for passenger cars.

Although NHTSA recognized in the NPRM that ''the problem of thoracic injuries in side impacts is not so great for LTV occupants as it is for passenger car occupants,'' the agency tentatively concluded that side impact protection requirements should apply to LTVs in a manner that would reduce the thorax-related fatalities and serious chest injuries in vehicles struck in side impacts. Most of these casualties would occur in crashes in which a vehicle other than a passenger car is the striking vehicle. (The two types of striking vehicles that are most likely to cause severe chest injuries in side impacts are standard pickups and compact pickups. These vehicles cause 26 percent and 16 percent of all such injuries, respectively.) NHTSA tentatively concluded therefore that it would be appropriate to establish side impact protection requirements for LTVs that simulated the type of multi-vehicle crash that causes the greatest number of

[1] See ''Preliminary Economic Assessment, NPRM for Light Trucks, Buses and Multipurpose Passenger Vehicle Dynamic Side Impact Protection, FMVSS No. 214'' (June 1994), accompanying the June 1994 NPRM, NHTSA Docket 88–06–N23–001.

[2] For the thorax, TTI(d) must not exceed 85 g for passenger cars with four side doors, or 90 g for cars with two side doors. It is generally more difficult for manufacturers to achieve lower TTI(d) for two-door cars than four-door cars, given that the door on a two-door model is typically wider than on a four-door model. For the pelvis, peak lateral acceleration must not exceed 130 g's.

serious injuries to LTV occupants in side crashes. That is, the agency believed that the barrier simulating the striking vehicle and the simulated injury-producing event should reflect attributes of a vehicle larger than a passenger car in terms of its weight and front end profile.

NHTSA also noted in the NPRM that data indicated that many current LTVs, especially the heavier ones, already meet the criteria specified for passenger cars. NHTSA conducted two series of LTV side impact tests similar to the dynamic Standard 214 passenger car test. In the first test series, the agency tested seven LTVs using an MDB that was modified to make it more representative of side crash conditions causing fatalities and serious injuries in light trucks. The weight of the MDB was increased to 4,000 pounds, and the height of the barrier face was raised between 4 and 10 inches. In the second test series, NHTSA tested three small LTVs (1991 Toyota pickup, 1991 Suzuki Sidekick, and 1989 Dodge Ram D–50) and a fourth vehicle representative of a small van (1989 Colt Vista-2WD), using the current dynamic test procedure, including the 3,000 pound MDB specified in Standard 214 for passenger cars. (The Colt Vista was a passenger car version of a vehicle that was then marketed in a four-wheel drive version as an LTV. The agency believes that both versions of the vehicle provide similar side impact protection.) NHTSA believed the four represented ''at risk'' vehicles, i.e., LTVs in the fleet that are most likely to require modifications to meet the passenger car standard. The TTI(d) and pelvic g's for the four vehicles were as follows: Toyota pickup-55/53 g's; Suzuki Sidekick-54/104 g's; Dodge Ram-83/72 g's; Colt Vista-108/69 g's (driver dummy), 111/108 g's (passenger dummy). The Toyota and Suzuki both readily met the requirements. The Dodge marginally passed the thoracic requirement, but readily passed the pelvic requirement. The Colt, which is no longer sold in the United States, failed the thoracic requirement, but readily met the pelvic requirement.

a. Raising the Height and Weight of the Moving Deformable Barrier (MDB)

NHTSA proposed in the NPRM to set the height of the MDB within a range of 33 inches to 45 inches, as measured from the ground to the top edge of the barrier face. This represented an increase of up to 12 inches in MDB height as compared to the height specified for passenger car testing (33 inches).

Within the proposed 33 inch to 45 inch range, NHTSA proposed two alternative methods for specifying MDB height. Under the first method, the MDB height would be raised to match the driver H-point of the tested vehicle. This approach focused on attributes of the struck vehicle. Unlike passenger cars, for which the seating heights are very similar, the height of LTV seating positions vary considerably. The agency tentatively concluded that impacting a vehicle at the driver H-point would ensure that LTVs provide thoracic side impact protection when they are struck in the side by another LTV at a height that allows the side door interior to intrude inward at a relatively high velocity toward the chest area of adjacent occupants. Thus, the struck vehicle's side impact safety performance is evaluated at a specific height matching the front end profile of the striking vehicle that has the potential to cause serious chest injuries.

Under the second method, the MDB height would be at the same level for all LTVs, or at the same level for all LTVs within a particular sub-group, e.g., small and large pickups, vans and utility vehicles, with different levels specified for different sub-groups. This approach only focuses on attributes of the striking vehicles, taking into account only the average seating heights of a group of LTVs. Since the heights of the front ends of LTVs vary, specifying a single height that is equally representative of all LTVs would be very difficult. Moreover, specifying a single height raised possible practicability concerns, since a test procedure that specifies a single MDB height that is representative of large pickup trucks might simulate crashes in which compact LTVs could not comply since they have much lower seating heights than the front end heights of large pickup trucks.

NHTSA also proposed to increase the weight of the MDB for LTV testing. As noted above, NHTSA derived the weight of the barrier for passenger car testing from the median curb weight of passenger cars (3,181 pounds in 1989) and light trucks (3,958 pounds in 1989). This resulted in a weighted average of 3,423 pounds, which the agency adjusted downward to account for the then-projected lower weight of vehicles in the 1990's. Based on these considerations, NHTSA derived a nominal barrier weight of 3,000 pounds.

The agency proposed to specify the MDB's weight within a range of 3,000 pounds to 3,800 pounds. The lower end of the range is the current weight of the MDB specified for passenger car testing. The upper end of the range is based on the average weight of striking vehicles in LTV crashes where an LTV occupant had an AIS ≥ 3 torso injury, as observed in 1988–91 NASS data. NHTSA did not propose an MDB weight above 3,800 pounds because of concerns about practicability. In particular, the agency believed that as MDB weight is increased much above 3,600 pounds, there are increasing concerns about the feasibility of smaller LTVs meeting the dynamic test requirements with such a barrier.

Cognizant that it had proposed a wide range of possible modifications to the MDB, NHTSA sought to ''facilitate more focused comments'' with respect to the selection of a single height and weight for the MDB. The agency narrowed the focus by stating that it believed:

> That the combination of raising the MDB to a height in the middle portion of the proposed range, e.g., seven to nine inches above the passenger car barrier height, and increasing its weight to 3,600 pounds would be sufficient to create a dynamic event that is representative of the ones likely to cause serious chest injuries to occupants in the most vulnerable LTVs in real world crashes. 59 FR at 30762.

b. Response to the NPRM

The agency received 19 comments on the NPRM. Commenters included vehicle manufacturers (General Motors, Chrysler, Ford, Mazda, Isuzu, Mitsubishi, Toyota, Volkswagen, Nissan and Rover Group), multistage vehicle manufacturers (Starcraft, Flexsteel Industries, and Bornemann Products), and consumer and industry groups (Advocates for Highway and Auto Safety, American Automobile Manufacturers Association, Insurance Institute for Highway Safety, National Association of Independent Insurers, National Truck Equipment Association, and Recreation Vehicle Industry Association).

Of all the commenters, only Advocates for Highway and Auto Safety (Advocates) and the National Association of Independent Insurers (NAII) supported modifying the height and weight of the MDB. Advocates suggested that the MDB weigh 3,800 pounds, have a bumper, and be designed so that the distance from the top of the bumper to the ground is 33 inches and the distance from the top of the barrier face to the ground is 45 inches. Advocates said that such a barrier would represent the weight and height of a larger LTV as the striking vehicle. NAII said the MDB weight should be 3,400 pounds since ''the sales weighted average curb weight of new passenger cars and LTV fleets * * * now averages approximately 3400 pounds.''

The vehicle manufacturers were unanimously opposed to the NPRM, and wanted the rulemaking either terminated or limited to a straight extension of the passenger car side impact protection requirements. The American Automobile Manufacturers Association (AAMA), representing GM, Ford and Chrysler, strongly believed the rulemaking should be terminated. Toyota, Isuzu, and Mazda also believed the rulemaking should be terminated. In the alternative, these commenters, together with Volkswagen and Nissan, said that if NHTSA decided to proceed with a final rule, it should adopt no more than the passenger car test procedures and injury criteria.

The commenters opposing the NPRM raised several main objections:

1. Equity. Each raised an equity argument, contending that it is unfair for NHTSA to adopt LTV side impact protection requirements based on test conditions more severe than those used for passenger cars, when LTV occupants currently face a smaller risk of thoracic injury in side impacts as compared to passenger car occupants. AAMA said that NHTSA understated the degree to which LTVs present a smaller risk of injury when the NPRM stated that the side impact fatality rate for occupants of LTVs in side impact crashes is slightly less than half of that for occupants of passenger cars. NHTSA estimated that the LTV occupant side impact fatality rate per million registered vehicles is 25.7, as compared to 53.3 for passenger cars. AAMA stated that these rates were based on all injuries in side impacts, while only thoracic injuries—''the principal focus of this rulemaking''—should be calculated. AAMA said that NHTSA estimated in the NPRM that 245[3] of 1,763 LTV occupant fatalities, or 13.9 percent for LTVs and 37 percent for passenger cars, will be due to thorax injuries. According to AAMA,

> Applying these percentages to the aforementioned fatality rates yields side impact fatality rates due to thoracic injuries per million registered vehicles. For LTVs, this rate is approximately 3.6. For passenger cars, it is approximately 19.7. LTV occupants, therefore, presently face less than one-fifth the risk of receiving a fatal thoracic injury in a side impact compared to passenger car occupants.

[3] In its comment, AAMA later also argues that the NPRM's estimate of 245 annual fatalities is overstated. AAMA believed those fatalities include accident conditions that do not relate to the proposed test procedures, such as single vehicle accidents, medium and heavy trucks as striking vehicles, and ejections. By excluding these, AAMA estimates there are only 52 fatalities remaining. AAMA also argued that NHTSA did not take into account the 58 to 82 fatalities that would be reduced from implementing Standard 214's quasi-static test requirement for LTVs.

The vehicle manufacturers argued these data demonstrate that LTVs are already safer than passenger cars in side impacts. Thus, these commenters concluded, it would be unreasonable to adopt more severe requirements for LTVs than what is required for passenger cars. AAMA suggested that rather than promulgate a dynamic side impact requirement for LTVs, NHTSA could utilize its resources more effectively by working to increase seat belt usage and reduce impaired driving by LTV users.

Some commenters compared LTV occupant injuries in side impacts to injuries in other types of crashes and questioned whether the side impact protection of LTVs constitutes a safety problem of a magnitude severe enough to justify the proposed rulemaking. Nissan commented that NHTSA presented data at the 1991 Enhanced Safety Vehicle Conference which indicated that the portion of fatalities for occupants in LTV side impact crashes amounted to only 0.92 percent of the total LTV occupant fatalities.

2. Unrepresentative barrier. Most of the commenters opposed to the NPRM objected to what they regarded as the unrepresentativeness of the proposed dynamic side impact test procedure for LTVs. Many opposed using a barrier representing an LTV to strike vehicles being tested, on the grounds that such a test would not be representative of a typical real-world LTV side impact. According to several commenters, an LTV is more likely to be struck in the side by a passenger car than by another LTV. Nissan said that data from the National Accident Sampling System (NASS) for 1988 through 1992 indicate that in side impacts, passenger vehicles collide with the side of an LTV more than three times as often as LTVs collide with other LTVs. Volkswagen (VW) and Isuzu believed that LTVs are exposed to the same traffic environment as passenger cars, and therefore, their exposure to side impact accidents from other vehicles would be similar to that of passenger cars. VW stated, ''The side impact test barrier should be representative of the accident exposure of the target vehicle and therefore a common barrier should be used for passenger cars as well as LTVs.'' AAMA said that NHTSA has not provided data justifying a departure from the ''most likely striking vehicle'' approach used in the passenger car side impact protection requirements.

The view that a dynamic side impact test for LTVs should represent a common real-world event was also shared by the Insurance Institute for Highway Safety (IIHS). This commenter supported subjecting LTVs to the same dynamic side impact test as cars. IIHS took issue with the agency's position in the NPRM that the test procedure for LTVs should be modified to better represent those crashes most likely to cause serious and fatal thorax and pelvis injuries among LTV occupants. The commenter believed NHTSA failed to indicate whether those crash conditions represent a common real-world event.

Many commenters objected that a modified LTV test procedure would not be representative of the type of crash most likely to result in serious injuries and fatalities to LTV occupants. This view is contrary to the one stated by NHTSA in the NPRM. There the agency had tentatively concluded that, in order to address the safety problem in side crashes of LTVs, the barrier used to simulate a striking vehicle should be increased in height and weight to better represent striking vehicles that are most likely to cause severe chest injuries in side impacts, i.e., standard pickups and compact pickups. (The NPRM said that accident data indicate that 78 percent of LTV side impact fatalities resulting from a ''torso'' injury involved a LTV or a heavier vehicle as the striking vehicle in vehicle-to-vehicle crashes.) Those commenters believed that passenger cars more often cause serious injuries and fatalities than LTVs as the striking vehicle. Nissan stated that NHTSA presented data[4] at the 1991 Enhanced Safety Vehicle Conference which indicated that ''serious injuries and fatalities in cases where passenger cars strike LTV class vehicles in a side impact scenario is on the order of six times that of LTV vehicles impacting another LTV.'' AAMA also refers to the report mentioned in Nissan's comment. AAMA said that the report shows that 1982–1989 NASS files indicate there were ''only 13 cases relevant to the test requirements proposed in the NPRM.'' (''Relevant'' means that these cases involved side crashes to the near side, and torso injuries only.) The commenter said that in nine of those 13 cases, a passenger car was the striking vehicle. AAMA said it conducted a similar study of 1991–1992 NASS files and found nine cases relevant to the NPRM. In 5 of the 9 cases, a passenger car was the striking vehicle. AAMA stated, ''If LTV occupants typically suffer serious thoracic injuries when struck in side impacts by vehicles other than passenger cars, then surely nine years of NASS data would not show that passenger cars are the most common

[4] Partyka, S.C., ''Light Truck Side Impacts with Serious Occupant Injury,'' ESV Report No. 91–S5–O–27.

side impact striking vehicles causing serious thoracic injuries to LTV occupants.'' AAMA also argued that a test procedure that matches the bumper height of the MDB to the H-point of the struck vehicle is likely to result in the MDB overriding the sill and floor structure. AAMA said this would be inappropriate since NASS data contained only four side impacts with sill/frame override, which accounts for only 0.03 percent of LTV side impacts.

AAMA commented that the proposed barrier configurations represented a vehicle or group of vehicles that do not exist. AAMA said that the proposed heights and weights for the barrier are inconsistent with manufacturers' fleet data. ''Ford * * * data show that the average height of Ford light truck bumpers (including vehicles up to 15,000 pounds GVWR) is only 16.6 inches from ground—only 2.1 inches higher than Ford's average passenger car bumper. The NPRM proposes to raise the MDB bumper as high as 25 inches above the ground.'' AAMA believed NHTSA should have attempted to correlate the ''typical striking vehicle'' dimensional characteristics with the average U.S. LTV fleet, as the agency did for the MDB in the passenger car side impact protection rulemaking.

3. Inadequate test program. Some commenters objected to the NPRM because they believed that the proposal was based on a NHTSA test program that was inadequate for reasons other than those relating to a modified MDB. AAMA argued that NHTSA simply extended the impact conditions (e.g., striking velocity of the barrier) developed for passenger cars to LTVs without showing that those conditions are relevant for LTV crashes. AAMA said that NHTSA based its conclusions about the side impact performance of the entire LTV fleet on a test program that did not represent the LTV fleet. ''None of the vehicles tested were equipped with side door beams, which could have a significant effect on test results.'' Also, AAMA said the test program did not account for the complexity and variability of LTVs as a group. For example, AAMA stated, ''(t)he agency did not test extended cab pickups which are structurally different than regular cab pickups, nor the right side of a van which is structurally different than the left side of a van.''

AAMA raised concerns about the agency's tentative conclusions in the NPRM about the effectiveness of padding and structural modifications as countermeasures. While NHTSA has shown that three inches of padding can improve the performance of vehicles in providing side impact protection, AAMA cautioned that three inches of padding is an unrealistic countermeasure for LTVs. The commenter believed that trucks with three front seating positions and three inches of interior padding would not be possible if customer seating preferences are to be met. AAMA also stated that the high compression foam used to develop effectiveness levels may reduce the SID accelerations, but may cause an increase in real-world side impact injuries, especially for elderly occupants.

III. Agency Decision

a. Extending the Passenger Car Requirements

NHTSA has decided that it should limit its final action in this rulemaking to a straight extension of the passenger car requirements to LTVs. The agency views a straight extension to be a reasonable starting point for establishing side impact protection for LTVs. While the agency recognizes that a straight extension of the side impact protection requirements for passenger cars to LTVs would provide few benefits when estimated on the basis of historical accident data, it would prevent any future LTVs being introduced into the market that are inferior in side crash safety performance to passenger cars. A modified test procedure for LTVs is not being adopted at this time because of concerns that NHTSA has about the proposal in light of the public comments. These issues are discussed below.

As noted earlier, some commenters said that the agency's information regarding LTV side impact protection is limited because none of the LTVs tested by NHTSA were equipped with side door beams. Manufacturers are likely to equip all LTVs with side door beams to meet Standard 214's quasi-static requirements, which become effective beginning with MY 1995. These requirements address primarily single vehicle impacts, such as impacts with poles and trees.

NHTSA does not know what effect side door beams may have on the performance of LTVs in vehicle-to-vehicle side impacts, especially if the striking vehicle were high enough to override the door sill of the struck LTV. The beam and its supporting structures can change how crash forces are directed at or away from the vehicle occupant in a vehicle-to-vehicle crash. Accordingly, the agency is concerned that past accident data of LTVs without door beams may not accurately indicate the real-world side impact performance of LTVS with beams in vehicle-to-vehicle crashes.

Another concern relates to the feasibility of the countermeasures that could be used in LTVs to reduce the TTI(d), if a modified MDB were adopted. In the preliminary regulatory evaluation (PRE) for the NPRM, NHTSA stated that padding has been demonstrated to be an effective countermeasure for reducing TTI(d) and pelvic g's for LTVs. NHTSA's countermeasure tests evaluated padding material that was used to assess countermeasure effectiveness for passenger cars. Yet the PRE recognized that structural modifications to the vehicle might be needed in addition to padding, depending on the chosen compliance option (page VI-I). Since the fatalities and serious injuries that are occurring in LTVs are caused by the heavier and higher profile vehicles, if an MDB were used to represent these vehicles, the type of padding countermeasures developed for cars may not be sufficient, by themselves, for LTV crashes of such severity. It is further noted that in the second seat of vans, there typically is no door on the left side, and thus no structural side supports adjacent to that side of the second seat. There also appears to be limited side wall space for padding in that area. Further, the agency's cost estimates of countermeasures and modifications were based on extrapolation from passenger car data, which may or may not be valid.

Some commenters stated that the agency failed to show that the proposed test procedure duplicated the real world in terms of impact direction and speed. The agency analyzed the accident data that are available to determine accident conditions of LTV crashes. While the NPRM contained broad ranges for impact height and weight of the MDB, the agency concluded that the impact conditions based on the current data are within these ranges. Therefore, the agency rejects these comments.

By extending Standard 214's passenger car requirements to LTVs, NHTSA is ensuring that the subject future LTVs will provide side impact protection under the same crash conditions under which passenger cars provide such protection. Both passenger cars and LTVs are operated in the same environment and thus have the same exposure to striking vehicles. NHTSA is requiring that LTVs provide a minimum level of side impact protection when struck by the type of vehicle most likely to strike LTVs in all side impacts. NHTSA has determined that this approach, based on overall exposure rather than cause of fatality or serious injury, is appropriate, given the information currently available. This

rule will ensure that future LTVs offer a minimum level of side crash protection.

The agency recognizes there is widespread compliance by today's LTVs with the dynamic performance requirements when tested according to Standard 214 for passenger cars. In past regulatory proceedings involving issues on which there is widespread compliance, the agency has generally concluded that there is no compelling safety need for it to act since vehicle manufacturers are already providing the requisite safety performance in the absence of a Federal requirement. In those circumstances, NHTSA has frequently determined that rulemaking would impose a burden on the agency by requiring it to develop appropriate requirements, conduct a rulemaking proceeding, and use some of its enforcement budget to monitor compliance. Such rules would also impose certification and additional paperwork burdens on the manufacturers. Those burdens would be imposed without a commensurate safety benefit for the public, and would therefore represent unnecessary burdens.

On other occasions, however, the agency has proceeded with rulemaking to assure that there is no retreat from the existing level of safety. For example, NHTSA issued a final rule requiring installation of lap/shoulder belt systems in the rear seats of cars, although almost all models were already voluntarily slated to be so equipped within a few years of the rule.

NHTSA concludes it is similarly appropriate to extend Standard 214 to LTVs, to ensure that future LTVs subject to the standard provide protection under the same crash conditions as passenger cars. The dynamic side impact protection represented by the standard is important for occupant safety in the future, if LTVs under 6,000 pounds GVWR make up the bulk of the LTV fleet population, as is expected. The fleet populations of small (i.e., compact) vans (minivans) and utility vehicles are growing at an appreciable rate, and additional manufacturers are entering these segments of the market. In the absence of a federal standard, NHTSA cannot assure the public that the current level of protection will be continued in the future. Also, it appears that, in the future, the growth rate of small LTVs will be much higher than that of large LTVs. NHTSA estimates that the small LTVs may constitute 60 percent of the total LTV population in 1997 and beyond.

While large pickups and vans meet the injury criteria of this rule without any modifications, NHTSA believes some small and medium LTVs may not do so and others may only marginally meet the performance criteria. As the agency noted above, its test data show that the Dodge Ram D–50, with a GVWR of approximately 4,900 pounds (a medium size), met the thoracic requirement only marginally. Some LTVs smaller than the Dodge Ram D–50 may not be able to meet the requirements, and may need improvements to ensure that they meet the requirements in the standard.

As LTVs continue to grow in popularity and sales, NHTSA believes it is important to ensure that all such vehicles meet at least the minimum requirements specified in Standard 214. Moreover, NHTSA believes it is important to ensure that any new entrants to the LTV market will follow the lead of their competitors in meeting the dynamic side impact protection requirements. The agency therefore concludes that today's rule will ensure a minimum safety performance in all LTVs subject to the standard.

Also, the agency has had a longstanding policy to have equivalent safety standards for cars and LTVs. Earlier in this document, recent actions to implement this policy were noted. The agency sees no compelling reason to deviate from this policy in this instance, given the information currently available.

The agency notes that a number of commenters suggested that NHTSA terminate this rulemaking, as permitted by ISTEA. They argued that the safety problem in LTVs is minor and therefore a termination would be consistent with the provision in ISTEA permitting the agency to ''complete'' rulemaking on side impact protection for LTVs by deciding ''not to promulgate a rule.'' As discussed above, the agency disagrees that a termination is warranted. This rule ensures that all future LTVs subject to the standard offer a minimum level of side crash protection, and that occupants of cars and LTVs are assured of protection in the same crashes.

At the same time, the agency is sensitive to the issue of unnecessary regulatory burdens. As a result and because of the relatively superior safety performance of the larger LTVs and their more limited use as passenger-carrying vehicles, NHTSA is limiting the rule to LTVs with a GVWR of 6,000 pounds or less. At the time of the NPRM, the agency had reservations about proceeding with a straight extension in the absence of benefits, especially in view of the belief that a straight extension would impose ''significant compliance costs.'' These costs were estimated based on an extension of all LTVs up to 8,500 pounds GVWR. However, since this rule is limited to vehicles at or under 6,000 pounds GVWR, fewer vehicles will have to be tested. NHTSA estimates that compliance costs will be reduced by about 15 percent due to the GVWR limit, and that they will not be significant.

NHTSA notes that possible future upgrades of side impact protection for both passenger cars and LTVs will be an integral part of the agency's research and development project relating to side impact protection. This project will analyze the entire light vehicle side impact problem that will remain after all vehicles with a GVWR of 6,000 pounds or less meet the existing dynamic side impact requirements of Standard 214. The agency will be considering what performance requirement upgrades should be made to all these vehicles, based on problem analysis and appropriate physical vehicle parameters.

b. Related Requirements

As discussed earlier in this notice, commenters raised a number of issues relating to the NPRM's proposal to adopt a modified MDB for LTV side impact protection requirements. In addition to the issues to which the agency has responded above, issues were also raised concerning the estimated costs and benefits attributable to side impact protection requirements incorporating a modified MDB; and the effectiveness of padding as a countermeasure in tests using a modified MDB. Since the agency has decided not to adopt a modified MDB at this time, these issues are moot.

Several commenters suggested that recent NASS data indicate that the vehicle most likely to cause serious injury or death to an LTV occupant is a passenger car. Those comments were provided in opposition to a modified MDB, and are also moot.

The remaining issues raised by the commenters are discussed in the next section.

1. Vehicles Covered by This Rule

This rule applies to LTVs with a GVWR of 6,000 pounds or less. However, it does not apply to any LTVs in that weight range that are walk-in vans, motor homes, tow trucks, dump trucks, ambulances and other emergency rescue/medical vehicles (including vehicles with fire-fighting equipment), and vehicles equipped with wheelchair lifts.

The 6,000 pound GVWR limit differs from that mentioned in ISTEA. As

indicated above, ISTEA required the agency to address the possible extension of Standard No. 214's dynamic side impact requirements for passenger cars to LTVs with a GVWR of 8,500 pounds or less and an unloaded vehicle weight of 5,500 pounds or less. Having chosen the barrier currently specified for passenger cars, the agency believes that it is appropriate to limit the application of the rule to vehicles with a GVWR of 6,000 pounds or less. That barrier represents side crashes in which occupants of the heavier LTVs are relatively unlikely to suffer death or serious injury. Further, LTVs with GVWRs over 6,000 pounds should easily meet the dynamic requirements adopted today without any modification. NHTSA conducted several side impact tests of production LTVs. Analysis of these data show that the performance of the vehicles in producing TTI(d) values has an inverse relationship to the curb weight of the test vehicle. Vehicles with a curb weight of over 3,800 pounds produced TTI(d) values below 50 g's. Since curb weight of 4,000 pounds is approximately equivalent to a GVWR of about 6,000 pounds, NHTSA concluded that vehicles with a GVWR of more than 6,000 pounds would meet the TTI(d) performance requirement of 85 g's with a large margin of safety (i.e., at least 30 to 35 g's below the specified performance requirement). In the interest of reducing unnecessary regulatory burdens associated with certifying vehicles to the FMVSSs, NHTSA has not applied this rule to large (over 6,000 pounds GVWR) LTVs.

Vehicles manufactured in more than one stage; altered vehicles. Limiting the application of this rule to LTVs with a GVWR of 6,000 pounds or less excludes a substantial number of vehicles produced by businesses involved in manufacturing vehicles in more than one stage, and in converting, or altering, LTVs (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 GVWR limit of 6,000 pounds or less is the same one that is used in Standard 216, ''Roof Crush Resistance'' (49 CFR section 571.216). Standard 216 prescribes static roof strength requirements for LTVs to increase the resistance of the roof to crush and intrusion. The standard originally applied to passenger cars, and was extended to LTVs in a 1991 final rule. In a comment on the rule, NTEA indicated that commercial LTVs produced from incomplete chassis generally have a GVWR above 6,000 pounds. Due to the agency's need to further examine the feasibility of applying the standard to LTVs with higher GVWRs, NHTSA limited the standard to LTVs with a GVWR of 6,000 pounds or less.

NHTSA is not aware that a significant number of vehicles produced by final-stage manufacturers and alterers have GVWRs below 6,000 pounds. No commenter provided information showing the existence or estimate of the population of multistage manufacturers or alterers of vehicles in that weight class. To the extent they exist, the means that these final-stage manufacturers and alterers will use in certifying compliance with the dynamic side impact requirements of Standard 214 will not differ significantly from the means they already use to certify compliance with other requirements, such as Standard 214's quasi-static side door strength requirements and Standard 208's automatic crash protection requirements. Those means are briefly described below.

First, a final-stage manufacturer could complete the vehicle within the limits set by the incomplete vehicle manufacturer for assuring continued compliance. This is the simplest course of action that a final-stage manufacturer can take to ensure that its completed vehicle performs safely. NHTSA's certification regulations require manufacturers of incomplete vehicles (chassis) used by final-stage manufacturers to provide information regarding the limitations on the center of gravity, weight, and other attributes that must be observed by a final-stage manufacturer in completing a vehicle if that manufacturer is to avoid affecting the vehicle's compliance with applicable safety standards. When the final-stage manufacturer observes the limits set by the incomplete vehicle manufacturer, it may certify the vehicle on that basis. An alterer could modify a certified vehicle in a way that does not affect the vehicle's compliance with FMVSS 214, such as by refraining from weakening the side structure of the vehicles.

Second, a final-stage manufacturer could choose not to remain within the incomplete vehicle manufacturer's limits for a chassis, or an alterer could affect a vehicle's compliance with the FMVSSs, if the final-stage manufacturer or alterer took steps sufficient to enable it to certify, with due care, that the completed vehicle complied with applicable safety standards, including Standard 214. Final-stage manufacturers that build their own body structures are generally larger than most final-stage manufacturers, and have greater engineering and testing expertise. Also, final-stage manufacturers can band together to sponsor testing and/or engineering analysis. Similarly, an alterer could conduct or sponsor testing and/or engineering analyses showing that the vehicle, as altered, complies with Standard 214.

Issues relating to LTVs produced in more than one stage or altered were commented on by five parties involved in the multistage manufacture or conversion of LTVs. They included the National Truck Equipment Association (NTEA), the Recreation Vehicle Industry Association (RVIA), two seat suppliers to multistage manufacturers and alterers (Flexsteel Industries and Bornemann Products), and an alterer of completed LTVs (Starcraft Automotive Corporation.)

These commenters expressed reservations concerning the first approach discussed in the NPRM, i.e., that a final-stage manufacturer could stay within the limits set by the incomplete vehicle manufacturer, and that an alterer could alter the vehicle in conformity with the manufacturer's body builder's guide so as not to disturb the vehicle's compliance with Standard 214. NTEA, representing multistage manufacturers and distributors of work-related trucks, truck bodies and equipment, said that, as a result of a dynamic side impact requirement for LTVs, incomplete vehicle manufacturers might restrict final-stage manufacturers from making any modification to the side door structure of their vehicles. The commenter believed such a restriction would preclude final-stage manufacturers from widening or lengthening doors, and would thus preclude them from producing vehicles that need large doors for accessibility purposes, such as ambulances, vehicles for handicapped persons, or specialty delivery vehicles.

NHTSA has previously considered assertions that incomplete vehicle manufacturers would establish unreasonably stringent limitations on their vehicles. In the rules establishing dynamic testing requirements for manual safety belts in LTVs under Standard 208 (53 FR 50221; December 14, 1988) and extending Standard 204's steering column rearward displacement limitations to additional LTVs (54 FR 24344; June 7, 1989), NHTSA noted that

it did not believe that any incomplete vehicle manufacturer would, as a practical matter, establish unreasonably stringent limitations for its incomplete vehicles. If any incomplete vehicle manufacturer were to do so, final stage manufacturers would purchase their incomplete vehicles from other manufacturers that had established more realistic limitations.

The agency's belief that market forces will prevent incomplete vehicle manufacturers from establishing unreasonably stringent limitations seems to have been correct. No manufacturer has provided NHTSA with any evidence that overly stringent limitations have been or will be imposed on incomplete vehicles subject to any of the existing crash testing requirements. Thus, NHTSA does not find persuasive NTEA's suggestion that unreasonably stringent limitations will be imposed on the completion of incomplete vehicles as a result of extending Standard 214's dynamic test requirements to LTVs.

In any event, NHTSA believes the 6,000 pound GVWR threshold for this rule excludes most, if not all, LTVs produced by final-stage manufacturers and thus alleviates many of NTEA's concerns about the impacts of this rule. Moreover, this rule addresses some of NTEA's concerns by excluding walk-in vans, motor homes, tow trucks, dump trucks, ambulances and other emergency rescue/medical vehicles (including vehicles with fire-fighting equipment), and vehicles equipped with wheelchair lifts. These categories of vehicles are excluded because many vehicles within these categories tend to have unusual side structures that are not suitable for MDB testing (for example, since some of these excluded vehicles have a body much wider than their cabs, the MDB cannot hit the driver's door without first striking the body. The rule differs from the NPRM in adding ''other emergency rescue/medical vehicles'' and vehicles equipped with a wheelchair lift, to the list of excluded vehicles. Emergency rescue/medical vehicles typically have unusual side structures and are thus excluded for the same reason that the other vehicles are excluded. Vehicles equipped with a wheelchair lift are excluded because such vehicles typically have features such as a lowered floor (some are lowered as much as 10 inches), raised roof, movable seat bases and/or specially designed removable seats, in addition to the lift itself, that could raise practicability problems with regard to the ability of the vehicle to meet the dynamic side impact requirements. While NHTSA believes that all individuals are entitled to an equivalent level of occupant crash protection, the agency also believes that the goal of providing equivalent crash protection should not be achieved at the expense of the goal of providing mobility to the physically challenged. This rule excludes vehicles equipped with wheelchair lifts because those vehicles have unique features which, while improving accessibility, make it difficult for the vehicle to meet these requirements. Without the exclusion, these vehicles might not be produced.

As to LTVs that have not been excluded, if a final-stage manufacturer or alterer does not stay within the incomplete vehicle manufacturer's limits or alters the vehicle in a way that could affect its conformance to side impact protection requirements, the manufacturer or alterer will have the responsibility of determining what must be done to certify that the vehicle provides the requisite safety performance. Those manufacturers already certify to the dynamic crash test requirements of Standards 208 (''Occupant Crash Protection''), 212 (''Windshield Mounting''), 219 (''Windshield Zone Intrusion'') and 301 (''Fuel System Integrity''), and the quasi-static requirements of Standard 214 and 216, among others. Under the statute, each manufacturer must certify its vehicles, but the statute does not require any manufacturer to crash test or undertake any particular evaluation of its vehicles to make its certification. If crash testing its vehicles is too burdensome for a final-stage manufacturer, it could certify its vehicles using similar means to those it now uses to certify to other standards with dynamic testing requirements, including appropriate engineering analyses.

The NPRM stated that, if a final-stage manufacturer does not stay within the incomplete vehicle manufacturer's limits or if an alterer alters the vehicle in a way that could affect the LTV's conformance to side impact protection requirements, the final-stage manufacturer or alterer can band together with other manufacturers and alterers to sponsor testing and/or engineering analysis to show that a vehicle type common to all complies with the dynamic side impact requirements. This is similar to what is done to enable multistage manufacturers and alterers to certify to the dynamic testing requirements of FMVSS 208, ''Occupant Crash Protection.'' In response, RVIA said that while most manufacturers engaged in vehicle conversions certify to the automatic crash protection requirements of Standard 208 by means of ''engineering analysis,'' using data from seating component suppliers and incomplete vehicle manufacturers, RVIA argued that engineering analysis would not be an alternative to full scale crash testing in the case of Standard 214. RVIA stated this is because

> [a]dequate simulation of dummy accelerations resulting from side intrusion contact with interior components, padding and/or seating components cannot be performed. Full scale impact testing would therefore be required to be performed on each side of each different vehicle/seating system configuration.

Similarly, Flexsteel Industries said that

> * * * the dynamic side impact requirements of FMVSS 214 on vans and pickups could well create a larger problem to verify continued vehicle compliance than that experienced for FMVSS 208. Unlike the FMVSS 208 requirement where sled testing could be used to make comparative tests of Flexsteel seating to factory seating, the proposed side impact test is an intrusive test and both sides of new vans and pickups may have to be tested.

NHTSA does not agree that engineering analysis is not useful in assessing a vehicle's compliance with Standard 214. Manufacturers have computer simulations, component and sled tests using body shells, and analyses at their disposal to aid in assessing the capability of a vehicle to meet the requirements under Standard 214. These methods are considerably less expensive than crash testing. With respect to the opportunity to use these alternative methods for assessing compliance, Standard 214 is not any different from Standard 208. Sled tests simulating side crash tests can be performed in the same manner as in FMVSS 208. Similarly, component test data from crushing vehicle doors, seat structures, and other lateral components along with dummy body block data could be used in developing mathematical models and computer simulations to analyze safety performance of vehicle designs. This would enable RVIA, Flexsteel and other companies to determine the capability of their vehicle designs in meeting the requirements in FMVSS 214. Further, NHTSA believes that alterers should assure that they are producing vehicles that are equal to their original counterparts. Therefore, alterers must certify their vehicles to the requirements in FMVSS 214 by any available means.

Other Issues

Vehicles with work-performing equipment. NTEA suggested that NHTSA should exclude vehicles outfitted with a cargo or property carrying body, or work performing

equipment. The agency is not adopting this suggestion because the agency believes references to ''cargo or property carrying body'' are overly broad. For instance, they would exclude, inappropriately, pickup trucks. NHTSA further notes that most, if not all, multistage vehicles equipped with work performing equipment are excluded as a result of either the 6,000 pound weight threshold for the applicability of the rule, or the exclusion of vehicles such as dump trucks, tow trucks and emergency response/medical vehicles from the rule's coverage.

RVIA, NTEA and Starcraft Automotive urged NHTSA to exclude ''second stage manufacturers'' of LTVs from any dynamic side impact protection requirement. In NHTSA's view, the statute does not permit such an exclusion. While the agency must ''consider whether any * * * proposed standard is reasonable, practicable and appropriate for the particular type of motor vehicle or motor vehicle equipment for which it is prescribed,'' (49 U.S.C. § 30111(b)(3), formerly section 103(f)(3) of the Vehicle Safety Act), the agency's authority to establish different standards for different classes of vehicles is not without limit. The legislative history of the Vehicle Safety Act reveals that the consequence of section 30111(b)(3) is that any differences between standards for different classes of vehicles ''of course [are to] be based on the type of vehicle rather than its place of origin *or any special circumstances of its manufacturer.*'' S. Rept. 1301, 2 U.S. Code, Cong. & Admin. News, 2714 (1966), cited in *Chrysler Corp.* v. *Dept. of Transportation,* 472 F.2d 659, 679 (6th Cir. 1972). Under that decision, NHTSA may not exclude vehicles from Standard 214 simply because they are manufactured in two or more stages. Further, NHTSA is not authorized when establishing safety standards to differentiate between manufacturers on the basis of their size or financial resources.

Strong policy reasons underlie Congress' refusal to differentiate between vehicles on the basis of the manufacturers' ''special circumstances.'' A motor vehicle is an inherently dangerous instrument, composed of multiple components that must function together smoothly and safely. To protect unsuspecting members of the public from exposure to unreasonable risks posed by unsafe vehicles, there is good reason to require that every vehicle of a given type to meet all ''minimum performance standards'' that are prescribed for vehicles of its type.

Moreover, the statute does not authorize NHTSA to grant permanent exemptions from safety standards to small manufacturers who otherwise would be covered by those standards. *See Nader* v. *Volpe,* 475 F.2d 916, 918 (D.C. Cir. 1973). While *Nader* involved a single manufacturer that sought to be permanently exempted from safety standards, its reasoning applies equally to classes of manufacturers that seek such exemptions. Although the Safety Act was amended after the *Nader* decision to permit small manufacturers to seek *temporary* exemptions from safety standards if they can demonstrate that compliance with the standard would cause them ''substantial economic hardship'' and that they have made a good faith effort to comply (49 U.S.C. § 30113, formerly section 123 of the Vehicle Safety Act), Congress has severely restricted the agency's authority to grant such exemptions to very narrow, limited circumstances. These commenters are in effect seeking a permanent exemption from Standard 214 that the statute does not permit.

NHTSA acknowledges that *National Truck Equipment Association* v. *NHTSA,* 919 F.2d 1148 (6th Cir. 1990), suggests that NHTSA has authority, somewhere within its enabling statute, to exclude commercial vehicles manufactured in two or more stages from coverage under a safety standard. However, even an expansive reading of that case would not justify an exclusion of all multistage vehicles from the coverage of the standard.

Compliance using engineering analysis. Bornemann Products asked NHTSA to consider issuing a rule specifying that NHTSA will determine whether an LTV complies with a dynamic side impact requirement based on means other than an actual dynamic test, such as by way of engineering analysis. As a matter of policy, NHTSA seeks in developing and implementing its safety standards to use test procedures that not only determine compliance but also are as predictive of safety performance in the real world as practicable. Since dynamic crash tests are more predictive of such performance than engineering analysis, the agency uses them where practicable in developing compliance test procedures.

While engineering analysis may be adequate for design of the average vehicle, it may not be sufficient for the agency's purposes to determine the safety performance of a vehicle, with respect to all vehicle models. For example, in a particular case, the analysis may not properly account for all of the relevant crash variables and the individual interrelationship that exists between those variables. However, NHTSA acknowledges that manufacturers may use analytical methods to establish due care, especially if the manufacturers have limited financial resources.

2. Vehicles Manufactured Without Doors

In addition to the excluded vehicles described in the preceding section, this rule also excludes vehicles that have no doors or exclusively have doors that are designed to be easily attached or removed so that the vehicle can be operated without doors. The proposed exclusion was based on practicability concerns. Advocates objected to the proposed exclusion on the basis that it allows the design and sale of vehicles with an ''inherently dangerous design.''

In response, the agency notes that requiring these vehicles to meet Standard 214 would necessitate changes in their design which would adversely affect the utility and original purpose for which these vehicles were introduced. Accordingly, the agency does not consider the standard reasonable, practicable and appropriate for these vehicles.

3. Impact Reference Line

This rule makes a slight change to the provision in the NPRM on specifying the impact reference line (IRL) (S6.11) for the moving deformable barrier. The IRL is located on the target test vehicle to determine where the MDB must first contact the target vehicle in the dynamic test. It determines the distance of the vertical line of first MDB contact from the center of the wheelbase of the struck vehicle, and provides the relative position of the test dummy in the front seat of the target vehicle with respect to the striking MDB at the time of impact. For a left side impact, the left forward edge (corner) of the MDB must be aligned so that, when the MDB strikes the test vehicle, a longitudinal plane tangent to the left forward edge of the MDB passes through the IRL within a tolerance of ± 2 inches. As explained in the NPRM, the specified impact reference line for passenger cars is generally 37 inches forward of the center line of the wheelbase of the struck vehicle. However, for cars with wheelbases greater than 114 inches, the impact reference line is 20 inches behind the center line of the front axle. This ensures that the impact point for cars with very long wheelbases is not so far toward the rear of the car that the front seat dummy does not experience a full impact. The agency proposed, with one exception, the same impact reference line for LTVs. To ensure that

the impact line is not too far forward for LTVs with very short wheelbases, the agency proposed that for LTVs with wheelbases of 98 inches or less, the impact reference line would be 12 inches rearward of the vehicle's front axle centerline. This would ensure that the MDB would not likely bridge across the front and rear axles in short wheelbase LTVs.

The NPRM noted that GM expressed a concern that specification of impact point based on wheelbase could result in different test results for different wheelbase versions of the same model LTV. Manufacturers sometimes offer the same LTV with several different wheelbases. Basing the impact point on a vehicle's wheelbase would result in the point of first contact of the barrier, in two structurally identical LTV's, being at two different locations. The NPRM requested comments on whether the specified impact reference line should be adjusted to eliminate this possibility, such as by specifying the impact reference line based on driver H-point instead of wheelbase.

In commenting on the NPRM, GM iterated its concern that the same model vehicle would be tested under two different sets of test conditions. GM said its regular cab S/T pickup with a standard length bed has a wheelbase of 108.3 inches, while the S/T pickup with a regular cab and long bed has a wheelbase of over 114 inches. The commenter stated, ''According to the proposed procedure, the MDB would strike these two versions of the same truck at locations which differ by nearly three inches.'' Rover said the vehicle manufacturer should be able to choose to impact all ''structurally identical LTVs with different wheelbases'' at the same point provided that ''the point chosen was that specified in the standard for one of the range of wheelbases.''

After reviewing these comments, NHTSA has decided to specify the impact reference line in the following manner. For vehicles with a wheelbase of 98 inches or less, or greater than 114 inches, the impact reference line will generally be placed at the locations proposed in the NPRM. That is, for LTVs with a wheelbase of 98 inches or less, the impact reference line is 12 inches behind the vehicle's front axle, to ensure that the MDB is not so forward as to impact the front wheel, or bridge between the front and rear axles in a very short wheelbase vehicle. (NHTSA has adopted this provision for LTVs with wheelbases of 98 inches or less, and not for passenger cars, because to the agency's knowledge, there are very few passenger cars with such short wheelbases compared to LTVs sold in this country.) Similar to the specification in the standard for locating the impact reference line for passenger cars, for LTVs with wheelbases greater than 114 inches, the impact reference line generally is 20 inches behind the vehicle's front axle center line, to ensure that the impact point for vehicles with very long wheelbases is not so far to the rear of the vehicle that the front seat dummy does not experience a full impact.

For vehicles with a wheelbase of greater than 98 inches but not greater than 114 inches, the impact reference line will generally be 37 inches forward of the center of the vehicle's wheelbase, similar to the specification for passenger cars. However, in response to GM's and Rover's comments, this rule provides manufacturers producing two or more different versions of the same model vehicle the option of determining the impact reference line based on the vehicle with the shortest wheelbase of the different versions of the model.

NHTSA has selected this optional procedure because it reduces test burdens on manufacturers producing compact and ''stretch'' versions of a vehicle model, without compromising safety. The procedure does not alter the relative longitudinal position between the dummy and the MDB, thus ensuring that the dummy will be loaded by the barrier in the same manner in a test. While wheelbases for different versions of the same LTV model could differ, the difference in length is generally in the rear part of the vehicle, with the front axle to the front seating reference point (SgRP) distance remaining essentially the same. That is, the ''stretching'' resulting in a longer wheelbase version of a vehicle is rearward of the front seat. Thus, the relative distance between the front axle and the dummy is constant in different versions of the same LTV model irrespective of their differences in the location of the center of their wheelbase. Since the SgRP is located in virtually the same position in all versions of a specific vehicle model, the different versions are likely to perform virtually identically in Standard 214's dynamic test, if the distance between the barrier impact reference line and the dummy is maintained in the different versions. That knowledge would be helpful to manufacturers in certifying different versions of a model.

The procedure bases the IRL to SgRP distance on the vehicle with the shortest wheelbase, as opposed to a longer wheelbase, because using the shortest wheelbase ensures that the engagement of the side structure with the barrier is consistent across all versions of the same model. If a vehicle with a longer wheelbase were used as the ''base'' vehicle, the procedure could result in the barrier hitting a tire on a vehicle with a very short wheelbase, which would interfere with the interaction of the MDB and the side structure of the vehicle tested.

Under the optional procedure, the distance between the IRL that is a certain distance forward of the center of the vehicle's wheelbase (i.e., the vehicle with the shortest wheelbase, if there are several versions of the same model) or rearward of the front axle, as the case may be, and the SgRP of the vehicle, is used to determine the impact reference line for all other versions of the same model vehicle, even those with a wheelbase over 114 inches when it is a stretch version of a specific model. The distance between the SgRP and the IRL on the vehicle with the shortest wheelbase will be the same for all other versions of the same model.

Stated differently, NHTSA will place the IRL on a test vehicle of a specific model at the same distance from the SgRP that the IRL is from the SgRP on the model with the shortest wheelbase. When several versions of the same model have wheelbases ranging from 98 inches or less to more than 98 inches, the IRL will be placed 12 inches behind the centerline of the front axle of the vehicle with the shortest wheelbase. When the shortest version of a model has a wheelbase greater than 98 inches but not greater than 114 inches, the IRL will be placed 37 inches forward of the center of the vehicle's wheelbase (i.e., the vehicle with the shortest wheelbase, if there are several versions of the same model). When the shortest version of a model has a wheelbase greater than 114 inches, the IRL will be placed 20 inches rearward of the shortest vehicle's front axle. In all cases, after the location of the IRL is determined, the longitudinal distance from this reference line to the front SgRP is also determined. For tests of all other versions of the LTV model being tested, the IRL is located such that the distance between the IRL and the SgRP will be maintained.

4. Rear Seat

The NPRM requested comments on whether an LTV side impact protection requirement should apply to the front and rear seats of LTVs (as is the case for passenger cars), or whether they should apply to the front seats only of these vehicles. The preliminary economic assessment for the NPRM estimated that, for the rear seat, the target population consisted of eight fatalities and 17 to 20 AIS 3+ injuries. Because of the projected growth in LTV

registrations, the agency has now estimated that the target population for the rear seats may increase to 20–26 fatalities and 40–55 serious injuries, in the long run. The National Association of Independent Insurers (NAII) supported applying a dynamic side impact requirement to ''back doors'' as a means of increasing the safety to children riding in the passenger areas of mini-vans and sport-utility vehicles. The commenter said it is surprised by the ''unexpectedly low safety payoff'' estimated by NHTSA. Advocates acknowledged that the agency's estimates raise the possibility that applying a dynamic requirement to rear seats could create an unnecessary cost burden for manufacturers. However, the commenter argued that NHTSA could have underestimated how many small LTVs are used as passenger carrying vehicles.

This rule applies the dynamic side impact requirements to both the front and rear seats of LTVs. The agency believes this is reasonable, since it will make the requirements for passenger cars and LTVs as similar as possible. Also, a rear seat requirement will not impose significant burdens on manufacturers, since currently all LTVs would probably meet the requirement with little or no change. Most importantly, NHTSA adopted the rear seat requirement because trends in LTV registrations and occupancy data indicate that rear seats on LTVs are likely to be occupied more in the future, compared to the past twenty years. As more and more LTVs are used for family transportation, children are increasingly transported in these seats. In fact, comparing 1981–1986 NASS data for towaway crashes to 1988–1993 data, the ratio of rear to front seating of minors in LTVs has doubled from 0.2 to 0.4, while only slightly increasing from 0.5 to 0.6 for passenger cars.

5. Upgrading Other Aspects of the Standard

NHTSA received two comments suggesting that the agency should consider upgrading aspects of Standard 214 aside from modifications to the MDB. Advocates supported modifying the MDB to increase its height and weight, but also urged NHTSA to lower allowable TTI(d) to 80 (from 85) and pelvic g to 90 (from 130).

This rule does not adopt lower limits on the TTI(d) and pelvic g performance criteria specified in Standard 214. The agency gave no suggestion in the NPRM that NHTSA would change the performance criteria, and thus there was no notice for the suggested amendments.

IIHS, while supporting extending the passenger car requirements to LTVs (this commenter was opposed to a modified MDB for LTVs), urged NHTSA to ''seriously review ways to upgrade this standard for all passenger vehicles.'' The commenter was concerned that the rulemaking signaled that NHTSA is satisfied with the passenger car requirements of Standard 214, and that the research needed to upgrade the standard does not have a sufficient priority within the agency.

NHTSA believes it would be premature to decide to upgrade the passenger car side impact protection requirements before an evaluation is made of the effectiveness of those requirements. Further, since the standard will not be fully implemented until September 1, 1996, it is too early to reassess the efficacy of those requirements. It is common practice for the agency to conduct an evaluation study of an important rulemaking action, such as Standard 214's dynamic side impact protection requirements, when sufficient accident data become available for analysis. NHTSA believes sufficient data will be available for an effective evaluation of the passenger car dynamic side impact requirements by the year 2000. NHTSA has planned to undertake research on advance dynamic side impact protection for all light passenger vehicles, including LTVs. The agency has also research underway to determine the potential for additional injury criteria for chest and abdominal injuries in side crashes. That research, while more of a priority at this time than efforts to upgrade the passenger car side impact protection requirements, is nevertheless likely to yield important information on matters pertaining to a Standard 214 upgrade for all regulated vehicles.

6. Leadtime

This rule is effective for all vehicles on September 1, 1998. NHTSA believes that most, if not all, LTVs subject to the rule are able to meet the requirements adopted today with little or no modification. Thus, a phase-in schedule for vehicle compliance with the rule is unnecessary. On the other hand, some manufacturers of small LTVs may seek to modify their vehicles to increase the margin with which their vehicles meet the criteria of the standard, to ensure the TTI measurements that NHTSA obtains from tests of their vehicles are within the standard's limits. NHTSA has determined that a September 1, 1998 effective date gives motor vehicle manufacturers sufficient leadtime to evaluate their products and make any necessary changes to them. In addition, there may be a number of final-stage manufacturers, many of which are small businesses, that need a September 1, 1998 effective date to obtain information sufficient to allow them to certify to the requirements of the standard. Final-stage manufacturers may not be able to initiate their compliance work until the chassis manufacturers publish their guidelines for completing vehicles in compliance with the dynamic performance requirements of Standard 214 and make those available. In view of the possible impacts of this amendment on both large and small manufacturers, NHTSA concludes for good cause shown, it is in the public interest to have an effective date later than one year after promulgation of this rule.

IV. Rulemaking Analyses and Notices

a. Executive Order 12866 and DOT Regulatory Policies and Procedures

This rulemaking document was not reviewed under E.O. 12866, ''Regulatory Planning and Review.'' The agency has considered the impact of this rulemaking action under the Department of Transportation's regulatory policies and procedures, and has determined that it is not ''significant'' under them. This rule will ensure that future new LTV models provide at least the same level of benefits as are provided to passenger car occupants. The safety benefits accruing from this rule, as applied to current models, are likely to be small. As far as the agency knows, all current LTVs meet this final rule. However, it appears some current models would only marginally meet the standard as currently manufactured, and may therefore have to be improved to assure compliance in future testing. The costs of this rule are negligible. In the preliminary regulatory evaluation for the NPRM, NHTSA estimated total compliance costs of $1.5 million (1992 dollars), with the standard applicable to vehicles at or below 8,500 pounds GVWR (55 vehicles at $27,770 per test, excluding the cost of the test vehicles). With the final rule applicable to vehicles at or below 6,000 pounds GVWR, potentially 47 vehicles would be subject to testing, with a total cost of $1.3 million.

b. Regulatory Flexibility Act

NHTSA has considered the effects of this rulemaking action under the Regulatory Flexibility Act. I hereby certify that it will not have a significant economic impact on a substantial number of small entities. The small businesses and organizations most

likely to be affected by this rule are final-stage LTV manufacturers and alterers. Many of the vehicles produced by final-stage manufacturers are over 6,000 pounds GVWR. Because the rule applies only to vehicles at or below 6,000 pounds GVWR, this significantly reduces the applicability of the rule in terms of both the number of small businesses affected by the rule, and the number of vehicles produced by an affected manufacturer. Some van converters (which are ''alterers'') could be affected by the rule. While there are a significant number of van converters, there are probably only a small number that convert mini-vans or other vans at or under 6,000 pounds GVWR, that produce vehicles types that are subject to this rule and that also change the side structure of the vehicle (e.g., by putting a larger window in the side of the vehicle). The van converter that does so would need to certify that the altered vehicle complies with Standard 214. Van converters would be able to make their certification using means at their disposal, such as engineering analyses or sponsored testing, similar to the methods they now use to certify to dynamic and quasi-static test requirements in the FMVSSs that apply to their vehicles. (A detailed discussion of the means available to final-stage manufacturers and alterers in certifying to the dynamic test requirements adopted today are discussed in the section, ''Vehicles covered by this rule,'' *supra*.) In view of the limitations on the applicability of this rule, and in view of the means available to manufacturers to certify their vehicles, this rule will not result in a significant economic impact on a substantial number of small entities.

c. Executive Order 12612 (Federalism)

This rulemaking action has been analyzed in accordance with the principles and criteria contained in Executive Order 12612, and the agency 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. The agency has determined that implementation of this action will not have any significant impact on the quality of the human environment.

e. Executive Order 12778 (Civil Justice Reform)

This rule does not have any retroactive effect. Under section 49 U.S.C. 30103, whenever a Federal motor vehicle safety standard is in effect, a state may not adopt or maintain a safety standard applicable to the same aspect of performance which is not identical to the Federal standard, except to the extent that the state requirement imposes a higher level of performance and applies only to vehicles procured for the State's use. 49 U.S.C. 30161 sets forth a procedure for judicial review of final rules establishing, amending or revoking Federal motor vehicle safety standards. That section does not require submission of a petition for reconsideration or other administrative proceedings before parties may file suit in court.

List of Subjects in 49 CFR Part 571

Imports, Motor vehicle safety, Motor vehicles.

In consideration of the foregoing, NHTSA amends 49 CFR Part 571 as set forth below.

PART 571—FEDERAL MOTOR VEHICLE SAFETY STANDARDS

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

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

2. Section 571.214 is amended by revising S1(b) and S2, adding S3(f), and revising S5.1, S6.1, S6.11 and S7, and by adding S6.11.1 and S6.11.2 to read as follows:

§ 571.214 Standard No. 214, Side Impact Protection.

* * * * *

S1. * * *

(b) *Purpose.* The purpose of this standard is to reduce the risk of serious and fatal injury to occupants of passenger cars, multipurpose passenger vehicles, trucks and buses in side impact crashes by specifying vehicle crashworthiness requirements in terms of accelerations measured on anthropomorphic dummies in test crashes, by specifying strength requirements for side doors, and by other means.

S2. This standard applies to—

(a) Passenger cars;

(b) Effective September 1, 1993, sections S3(a), S3(e), S3.1 through S3.2.3, and S4 of the standard apply to multipurpose passenger vehicles, trucks, and buses with a GVWR of 10,000 pounds or less, except for walk-in vans; and

(c) effective September 1, 1998, sections S3(f) and S5 of the standard apply to multipurpose passenger vehicles, trucks and buses with a GVWR of 6,000 pounds or less, except for walk-in vans, motor homes, tow trucks, dump trucks, ambulances and other emergency rescue/medical vehicles (including vehicles with fire-fighting equipment), vehicles equipped with wheelchair lifts, and vehicles which have no doors or exclusively have doors that are designed to be easily attached or removed so the vehicle can be operated without doors.

* * * * *

S3 * * *

(f) When tested according to the conditions of S6, each multipurpose passenger vehicle, truck and bus manufactured on or after September 1, 1998, shall meet the requirements of S5.1, S5.2, and S5.3 in a 33.5 miles per hour impact in which the vehicle is struck on either side by a moving deformable barrier. A part 572, subpart F test dummy is placed in the front outboard seating position on the struck side of the vehicle, and if the vehicle is equipped with rear seats, then another part 572, subpart F test dummy is placed on the outboard seating position of the second seat on the struck side of the vehicle. However, the second seat requirements do not apply to side-facing seats or to vehicles that have second seating areas that are so small that the part 572, Subpart F dummy can not be accommodated according to the positioning procedure specified in S7.

* * * * *

S5.1 *Thorax.* The Thoracic Trauma Index (TTI(d)) shall not exceed:

(a) 85 g for a passenger car with four side doors, and for any multipurpose passenger vehicle, truck, or bus; and,

(b) 90 g for a passenger car with two side doors, when calculated in accordance with the following formula:

$TTI(d) = 1/2\ (G_R + G_{LS})$

The term ''G_R'' is the greater of the peak accelerations of either the upper or lower rib, expressed in g's and the term ''G_{LS}'' is the lower spine (T12) peak acceleration, expressed in g's. The peak acceleration values are obtained in accordance with the procedure specified in S6.13.5.

* * * * *

S6.1 *Test weight.* Each vehicle is loaded to its unloaded vehicle weight, plus 300 pounds or its rated cargo and luggage capacity (whichever is less), secured in the luggage or load-carrying area, plus the weight of the necessary anthropomorphic test dummies. Any added test equipment is located away from impact areas in secure places in the vehicle. The vehicle's fuel system is filled in accordance with the following procedure. With the test vehicle on a level surface, pump the fuel from the

vehicle's fuel tank and then operate the engine until it stops. Then, add Stoddard solvent to the test vehicle's fuel tank in an amount which is equal to not less than 92 percent and not more than 94 percent of the fuel tank's usable capacity stated by the vehicle's manufacturer. In addition, add the amount of Stoddard solvent needed to fill the entire fuel system from the fuel tank through the engine's induction system.

* * * * *

S6.11 *Impact reference line.* Place a vertical reference line at the location described below on the side of the vehicle that will be struck by the moving deformable barrier:

S6.11.1 *Passenger cars.*

(a) For vehicles with a wheelbase of 114 inches or less, 37 inches forward of the center of the vehicle's wheelbase.

(b) For vehicles with a wheelbase greater than 114 inches, 20 inches rearward of the centerline of the vehicle's front axle.

S6.11.2 *Multipurpose passenger vehicles, trucks and buses.*

(a) For vehicles with a wheelbase of 98 inches or less, 12 inches rearward of the centerline of the vehicle's front axle, except as otherwise specified in paragraph (d) of this section.

(b) For vehicles with a wheelbase of greater than 98 inches but not greater than 114 inches, 37 inches forward of the center of the vehicle's wheelbase, except as otherwise specified in paragraph (d) of this section.

(c) For vehicles with a wheelbase greater than 114 inches, 20 inches rearward of the centerline of the vehicle's front axle, except as otherwise specified in paragraph (d) of this section.

(d) At the manufacturer's option, for different wheelbase versions of the same model vehicle, the impact reference line may be located by the following:

(1) Select the shortest wheelbase vehicle of the different wheelbase versions of the same model and locate on it the impact reference line at the location described in (a), (b) or (c) of this section, as appropriate;

(2) Measure the distance between the seating reference point (SgRP) and the impact reference line;

(3) Maintain the same distance between the SgRP and the impact reference line for the version being tested as that between the SgRP and the impact reference line for the shortest wheelbase version of the model.

(e) For the compliance test, the impact reference line will be located using the procedure used by the manufacturer as the basis for its certification of compliance with the requirements of this standard. If the manufacturer did not use any of the procedures in this section, or does not specify a procedure when asked by the agency, the agency may locate the impact reference line using either procedure.

* * * * *

S7. *Positioning procedure for the Part 572 Subpart F Test Dummy.* Position a correctly configured test dummy, conforming to subpart F of part 572 of this chapter, in the front outboard seating position on the side of the test vehicle to be struck by the moving deformable barrier and, if the vehicle has a second seat, position another conforming test dummy in the second seat outboard position on the same side of the vehicle, as specified in S7.1 through S7.4. Each test dummy is restrained using all available belt systems in all seating positions where such belt restraints are provided. In addition, any folding armrest is retracted.

* * * * *

Issued on: July 20, 1995.

Ricardo Martinez,

Administrator.

[FR Doc. 95–18275 Filed 7–27–95; 8:45 am]

BILLING CODE 4910–59–P

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49 CFR Part 571

[Docket No. 85–07; Notice 10]

RIN 2127–AF23

Federal Motor Vehicle Safety Standards; Air Brake Systems Control Line Pressure Balance

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

ACTION: Final rule.

SUMMARY: In response to a petition for rulemaking submitted by Sealco Air Controls, this document amends the control line pressure differential requirements in Standard No. 121, *Air Brake Systems*, for converter dollies and trailers designed to tow other air braked vehicles. The agency has concluded that the amendments will improve the braking compatibility of such vehicles by allowing the use of a relay valve known as a spool-type low opening valve.

DATES: *Effective date.* The amendments in this document become effective August 28, 1995.

Petitions for reconsideration. Any petitions for reconsideration of this rule must be received by NHTSA no later than August 28, 1995.

ADDRESSES: Petitions for reconsideration of this rule should refer to Docket No. 85–07; Notice 10 and should be submitted to: Administrator, National Highway Traffic Safety Administration, 400 Seventh Street, S.W., Washington, D.C. 20590.

FOR FURTHER INFORMATION CONTACT: Mr. Richard Carter, Office of Vehicle Safety Standards, National Highway Traffic Safety Administration, 400 Seventh Street, S.W., Washington, D.C. 20590 (202–366–5274).

SUPPLEMENTARY INFORMATION:

I. Background

Standard No. 121, *Air Brake Systems*, establishes performance and equipment requirements for braking systems on vehicles equipped with air brakes, including requirements for pneumatic timing. NHTSA recently amended the control signal pressure differential requirements of Standard No. 121, with respect to converter dollies and towing trailers. (57 FR 37902; August 21, 1992) The amendment specifically requires that, for trailers and converter dollies manufactured after August 23, 1993, the pressure differential between the control line input coupling and a 50 cubic inch test reservoir connected to the rear control line output coupling shall not exceed 1 psi at all input pressures between 5 psi and 20 psi and 2 psi at all input pressures greater than 20 psi. Input pressures below 20 psi represent routine braking applications, while input pressures between 20 psi and 40 psi represent moderate to heavy braking applications, and input pressures above 40 psi represent severe braking applications.[1]

The August 1992 amendment was intended to ensure that the control signal ''passes'' through a towing trailer or dolly without being altered along the way. Since the control signal passes through unaltered, each vehicle in a combination unit receives the same brake control signal. This serves to increase the braking compatibility of combination vehicles, since each vehicle in a combination has comparable braking performance. By specifying the maximum permissible differential between the input and output control line pressures, this requirement addresses problems of heat buildup and brake fade during long, gradual downhill runs at relatively low

[1] In today's final rule, NHTSA has decided to modify the limit above 40 psi to allow a 5 percent differential (which at higher pressures exceeds the current limit of 2 psi) based on, among other things, the Society of Automotive Engineer's (SAE's) Recommended Practice SAE J1505, *Brake Force Distribution Test Code Commercial Vehicles.*