regulations that makes no substantive changes to those regulations, and merely extends the regulatory sunset date to conform to the new statutory sunset date added by Pub. L. 107–313. Because it is not a major rule, we are not required to perform an assessment of the costs and savings.

The RFA requires agencies to analyze options for regulatory relief of small businesses. For purposes of the RFA, small entities include small businesses, nonprofit organizations, and government agencies. Most hospitals and most other providers and suppliers are small entities, either by nonprofit status or by having revenues of $6 million to $29 million in any 1 year. Individuals and States are not included in the definition of a small entity. We are not preparing an analysis for the RFA because we have determined, and we certify, that this rule will not have a significant economic impact on a substantial number of small entities.

In addition, section 1102(b) of the Act requires us to prepare a regulatory impact analysis if a rule may have a significant impact on the operations of a substantial number of small rural hospitals. This analysis must conform to the provisions of section 604 of the RFA. For purposes of section 1102(b) of the Act, we define a small rural hospital as a hospital that is located outside of a Metropolitan Statistical Area and has fewer than 100 beds. We are not preparing an analysis for section 1102(b) of the Act because we have determined, and we certify, that this rule will not have a significant impact on the operations of a substantial number of small rural hospitals.

Section 202 of the Unfunded Mandates Reform Act of 1995 also requires that agencies assess anticipated costs and benefits before issuing any rule that may result in expenditure in any 1 year by State, local, or tribal governments, in the aggregate, or by the private sector, of $110 million. This rule will have no consequential effect on the governments mentioned or on the private sector.

Executive Order 13132 establishes certain requirements that an agency must meet when it publishes a proposed rule (and subsequent final rule) that imposes substantial direct requirement costs on State and local governments, preempts State law, or otherwise has Federalism implications. We have reviewed this final rule and have determined that it will not have a substantial effect on State or local governments.

We have reviewed this rule and determined that, under the provisions of Pub. L. 104–121, the Contract with America Act, it is not a major rule.

List of Subjects in 45 CFR Part 146

Health care, Health insurance, Reporting and recordkeeping requirements, State regulation of health insurance.

■ For the reasons set forth in the preamble, the Centers for Medicare & Medicaid Services amends 45 CFR part 146 as follows:

PART 146—REQUIREMENTS FOR THE GROUP HEALTH INSURANCE MARKET

■ 1. The authority citation for part 146 is amended to read as follows:

Authority: Secs. 2701 through 2763, 2791, and 2792 of the PHS Act (42 U.S.C. 300gg through 300gg-63, 300gg-91, and 300gg-92), as added by HIPAA (Pub. L. 104–191), and amended by MHPA (Pub. L. 104–204, as amended by Pub. L. 107–116, and Pub. L. 107–313), NMHPA (Pub. L. 104–204), and WHCRA (Pub. L. 105–277), sec. 102(c) of HIPAA.

§ 146.136 [Amended]

■ 2. In § 146.136, the following amendments are made:

■ a. The last sentence of paragraph (f)(1) is amended by removing the date ''September 30, 2001'' and adding in its place the date ''December 31, 2003.''

■ b. Paragraph (g)(2) is amended by removing the date ''September 30, 2001'' and adding in its place the date ''December 31, 2003.''

■ c. Paragraph (i) is revised to read as follows:

§ 146.136 Parity in the application of certain limits to mental health benefits.

* * * * *

(i) *Sunset.* This section does not apply to benefits for services furnished on or after December 31, 2003.

Dated: December 23, 2002.

Thomas A. Scully,

Administrator, Centers for Medicare & Medicaid Services.

Dated: January 21, 2003.

Tommy G. Thompson,

Secretary, Department of Health and Human Services.

[FR Doc. 03–16054 Filed 6–26–03; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Parts 571 and 596

[Docket No. NHTSA–03–15438]

RIN 2127–AH99

Federal Motor Vehicle Safety Standards; Child Restraint Systems, Child Restraint Anchorage Systems

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

ACTION: Final rule, response to petitions for reconsideration.

SUMMARY: This document responds to the remaining outstanding issues raised by petitions for reconsideration of the agency's March 1999 final rule establishing Federal Motor Vehicle Safety Standard No. 225, *Child Restraint Anchorage Systems,* and of the agency's previous responses to petitions, published in August 1999 and July 2000. Key issues pertain to: The strength requirement for the tether anchorage and for the lower anchorages of child restraint anchorage systems; how the test for the strength requirement is conducted; how the lower anchorage bars must be configured and marked; where the bars must be located relative to the vehicle seat bight; where tether anchorages must be located relative to seating positions within a vehicle; the installation of child restraint anchorage systems in vehicles with advanced air bags; and whether to require backless booster seats to be equipped with attachments for connecting to the lower anchors of a child restraint anchorage system.

DATES: The amendments made in this rule are effective August 26, 2003. If you wish to petition for reconsideration of this rule, your petition must be received by August 11, 2003.

ADDRESSES: If you wish to petition for reconsideration of this rule, you should refer in your petition to the docket number of this document and submit your petition to: Administrator, Room 5220, National Highway Traffic Safety Administration, 400 Seventh Street SW., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: For nonlegal issues: Michael Huntley, Office of Crashworthiness Standards, NHTSA (telephone 202–366–0029).

For legal issues: Deirdre R. Fujita, Office of the Chief Counsel, NHTSA (telephone 202–366–2992).

You can reach both of these officials at the National Highway Traffic Safety

Administration, 400 Seventh St., SW., Washington, DC 20590.

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I. Introduction

a. Overview of This Final Rule

This final rule responds to petitions for reconsideration of a final rule (64 FR 10786; Docket No. 98–3390) that was published on March 5, 1999 and that established a Federal Motor Vehicle Safety Standard (FMVSS) for child restraint anchorage systems (FMVSS No. 225, 49 CFR § 571.225). This is the third and final document responding to the petitions. The first two responses to petitions for reconsideration were published August 31, 1999 (64 FR 47566; Docket No. 99–6160), and July 31, 2000 (65 FR 46628; Docket No. 7648). A detailed summary of the petitions and the agency's responses thereto can be found in the ''overview'' section of the July 2000 final rule (65 FR at 46629).

This final rule resolves the issue of the appropriateness of the 15,000 N strength requirement for tether anchorages (S6.3 and S8.1 of FMVSS No. 225) and the 11,000 N strength requirement for the lower anchorages (S9.4.1(a)). Those strength requirements are unchanged from the March 1999 final rule. However, this final rule provides vehicle manufacturers an additional year of lead-time for the few vehicle models that might have to be redesigned to meet the requirements.

In this document, we are replacing the displacement limit of 125 millimeters (mm) of the 1999 final rule with different performance criteria for the performance of the tether anchorage, and slightly increasing the displacement limit for tests of the lower anchorages. In response to petitions for reconsideration of the length of time specified in the rule for the application of the required loads to the lower anchorages, we are reducing the time from 10 seconds to 1 second. We also address other issues concerning the installation and testing of anchorage systems, such as the configuration, location and marking of the lower bars, and the location of tether anchorages in sport utility vehicles (SUVs).

Finally, we deny a petition for reconsideration from Cosco, Inc., to exclude backless child restraint systems from the requirement in Standard No. 213 that the restraint systems have components that attach to a vehicle's child restraint anchorage system.

b. Background

1. March 1999 Final Rule

On March 5, 1999, NHTSA published a final rule establishing Federal Motor Vehicle Safety Standard No. 225, *Child Restraint Anchorage Systems* (64 FR 10786, docket 98–3390, notice 2). The rule required vehicle manufacturers to equip vehicles with new child restraint anchorage systems that are standardized and independent of the vehicle seat belts.

Each new system has two lower anchorages and one tether anchorage. Each lower anchorage includes a rigid round rod or bar onto which the connector of a child restraint system can be attached. The bars are located at the intersection of the vehicle seat cushion and seat back. The upper anchorage is a fixture to which the top tether strap of a child restraint system is to be hooked. (For convenience, this document refers to the child restraint anchorage system as the ''LATCH'' system. LATCH, an acronym for ''Lower Anchors and Tethers for Children,'' was a term developed by manufacturers and retailers in educating the public on the availability and use of the new system.) Standard No. 225 required vehicle manufacturers to begin phasing-in the tether anchorage of the LATCH system in the production year beginning September 1, 1999, with full implementation beginning September 1, 2000. Manufacturers were required to begin phasing-in the lower anchorages in the production year beginning on September 1, 2000, with full implementation beginning September 1, 2002.[1]

A number of manufacturers submitted petitions for reconsideration of various aspects of the new standard, including the strength requirements for the anchorage system and the test procedures to be used by NHTSA to test for compliance with the requirements.[2] Some of the vehicle manufacturers believed that there was no safety need for requirements as stringent as those

[1] The March 1999 final rule specified that, beginning September 1, 1999, 80 percent of a manufacturer's passenger cars were required to be equipped with tether anchorages, while all vehicles covered by the standard (including light trucks, vans, and multipurpose passenger vehicles with gross vehicle weight rating (GVWR) of 8,500 or less and buses with a GVWR of 10,000 pounds or less) are required to comply with the requirements by September 1, 2000. The final rule specified a 3-year phase-in period for the lower vehicle anchorages, which required 20 percent of each manufacturer's fleet to be equipped with compliant lower anchorages beginning September 1, 2000, 50 percent beginning September 1, 2001, and 100 percent beginning September 1, 2002.

[2] We received petitions from the Alliance of Automobile Manufacturers (''Alliance'') (whose members were BMW, DaimlerChrysler, Ford, General Motors, Mazda, Nissan, Toyota, Volkswagen, Volvo, Fiat and Isuzu), and from individual petitioners Honda, Volkswagen, Porsche, DaimlerChrysler, General Motors, Mitsubishi, the National Truck Equipment Association, Kolcraft, E–Z–On Products, Cosco, Toyota, Ford, the Coalition of Small Volume Automobile Manufacturers, and Indiana Mills and Manufacturing.

specified in the rule (*i.e.*, for a 15,000 N strength requirement for tether anchorages (S6.3 and S8.1) and a 11,000 N strength requirement for the lower LATCH anchorages (S9.4.1(a)). They indicated that they could provide tether and lower anchorages meeting less-stringent Canadian requirements for the tether anchorage and less-stringent requirements for lower anchorages set forth in a draft standard being developed by a working group of the International Organization for standardization (ISO), by the compliance dates set forth in the March 1999 final rule, but they could not provide tether and lower anchorages meeting the more-stringent strength requirements established in that rule by those dates. The Alliance suggested that the agency either delay the effective date of the rule or adopt the Canadian requirements for the tether anchorage and the draft ISO requirements for the lower anchorages.

2. August 1999 Response To Petitions

In response to concerns of several of the petitioners about the lead-time for and the stringency of the anchorage strength and other requirements in the March 1999 final rule, NHTSA published a final rule on August 31, 1999 (64 FR 47566, docket 99–6160). Among other things, the August 1999 rule permitted vehicle manufacturers to meet alternative requirements during an initial several year period. Until September 1, 2001, manufacturers were permitted to meet either the requirements in the March 1999 final rule or the less-stringent Canadian requirements for tether anchorages. Until September 1, 2002, manufacturers were permitted to meet the requirements for the lower anchorages consistent with those set forth in the draft ISO standard.

NHTSA balanced the benefits associated with vehicle manufacturers providing the new tether and lower anchorages, albeit ones meeting the less-stringent Canadian and draft ISO requirements, in accordance with the original schedule against the possible consequences of not providing for that alternative means of compliance. We concluded that, on balance, safety would be best served if the Canadian and draft ISO requirements were allowed as a compliance option for an interim period. We determined that the early availability of tether anchorages, even ones meeting the Canadian requirements, would promote safety by increasing the likelihood that parents will attach a top tether on a child restraint system. Compared to an untethered child restraint, a tethered child restraint offers improved protection against head impact in a crash. A tether anchorage that complies with the Canadian strength requirement will offer a level of safety that is significantly better than the one that would exist with no tether anchorage at all. We similarly concluded that lower anchorages meeting the draft ISO requirements would provide safety benefits for parents who have difficulty attaching a child restraint correctly in a vehicle or whose vehicle seats are incompatible with child restraints. Thus, the agency's adoption of these interim compliance alternatives made it possible to begin reaping the benefits of LATCH systems sooner than would have been possible under the March 1999 final rule.

The August 1999 final rule also responded to other issues. With regard to some issues, such as some of the technical ones addressing specifics on how an anchorage is to be tested and limiting the information that manufacturers have to provide in vehicle owners manuals on LATCH systems, the agency granted requests to amend the March 1999 rule. For some of the other issues, the agency denied or partially granted the petitions for reconsideration, which prompted the Alliance, Ford, Volkswagen, and Keiper GmbH & Co. (Keiper) to petition the agency to reconsider the decisions based on new information.

3. July 2000 Response to Petitions

On July 31, 2000 (65 FR 46628, docket 7648), NHTSA published a final rule that extended, until August 31, 2004, the period during which vehicle manufacturers may meet the Canadian and draft ISO requirements. The final rule also addressed other issues concerning the installation of child restraint anchorage systems in vehicles and how those systems are tested in the agency's compliance tests. Those issues involved the configuration requirements for the bars set forth in the ISO provisions of S15 of Standard No. 225; how the agency determines the H-point of a seating position when evaluating whether a tether anchorage is properly located in a seating position; what the dimensions of the child restraint fixture (''CRF'') should be; and the applicability of the standard to small manufacturers, to manufacturers of vehicles that cannot meet the pitch, roll and yaw requirements with the child restraint fixture installed, and to manufacturers of vehicles temporarily excepted from the requirement of FMVSS No. 208, ''Occupant Crash Protection,'' to provide an air bag at the front passenger seating position.

II. The Remaining Issues

The remainder of this document addresses the remaining issues that were raised in petitions for reconsideration of the aforementioned final rules.

a. Installation of Anchorage Systems (S4)

1. Number of Tether Anchorages and Where They Should Be Located

i. Number of Tether Anchorages. The March 1999 final rule required that vehicles with three or more rear designated seating positions must have tether anchorages at not less than three positions in these vehicles. This requirement applied to passenger cars, as well as to multipurpose passenger vehicles (''MPVs'').[3] NHTSA required the third tether anchorage to improve the means of attaching child restraints at a center rear seating position. 64 FR at 10803. Because Standard No. 225 requires that the lower anchorages of a LATCH system be 280 mm apart, most vehicles do not have a rear seat that is wide enough to accommodate anchorages in the center seating position and in an adjacent outboard position. Accordingly, manufacturers will probably install LATCH systems in the two outboard seating positions, and not in a center and an outboard position. However, many parents prefer placing child restraints in a center rear seating position, believing, correctly, that such a position is generally safer for a child, particularly with respect to the risk of injury if the child were in an outboard position on the side that was struck in a side impact.[4] A child restraint installed properly in a center seating position and using the vehicle's belt system and a top tether will perform comparably to a child restraint installed using the three-point LATCH system. The tether anchorage in both systems provides safety benefits to the child. Thus, the requirement for the third tether anchorage improves the position that many parents will want to use for their child (the center seating position).

Some manufacturers objected to the requirement for a third tether anchorage in MPVs with five or fewer designated seating positions. (For convenience,

[3] AMultipurpose passenger vehicle'' is defined in 49 CFR § 571.3 as Aa motor vehicle with motive power, except a low-speed vehicle or trailer, designed to carry 10 persons or less which is constructed either on a truck chassis or with special features for occasional off-road operation.''

[4] It is probably easier for most parents to install two child restraints on a vehicle seat bench if the two LATCH systems were on the outboard positions than if they were side-by-side (in the center position and on an adjacent outboard position).

since most MPVs with five or fewer seating positions are sport utility vehicles (SUVs), we will refer to these MPVs as ''SUVs''.) In its petition for reconsideration of NHTSA's requirement for three anchorages, the Alliance stated that Transport Canada has required only two tether anchorages for SUVs, because of manufacturers' submissions to Transport Canada ''which stated that the seating configurations and vehicle design constraints made the mandate of three tether anchors in the rear seat impracticable for such vehicles.'' The Alliance also stated that some manufacturers state in their owner's manual not to install child restraints in the center position because those seating positions tend to be smaller in area. Thus, the Alliance asked that we amend our standard to require only two tether anchorages for SUVs with 5 or fewer seating positions.

NHTSA denied this request in the agency's August 1999 response to petitions for reconsideration (64 FR at 47570). The agency noted that manufacturers had not submitted any information to NHTSA that justified why SUVs, as a vehicle class, should have fewer tether anchorages than passenger cars or why a third tether anchor in the rear seat of these vehicles was impracticable. Further, the agency noted that SUVs were used as passenger-carrying vehicles, were increasing in popularity, and were used to carry children. Based on this information, NHTSA denied the request of the petitioners and retained the requirement for three tether anchorages. However, to provide manufacturers with lead-time to design and manufacture SUVs with three anchorages, the agency permitted manufacturers the option of installing only two tether anchorages during the interim period during which they could meet Transport Canada's requirements for tether anchorages. The interim period ends August 31, 2004.

The Alliance petitioned for reconsideration of this denial (NHTSA 99–6160–6). It stated that some SUV vehicle owner's manuals state that the center seat is not recommended for child restraint installation because the seat does not meet the provisions of the Society of Automotive Engineers (SAE) Recommended Practice J1819, ''Securing Child Restraint Systems in Motor Vehicle Rear Seats,'' due to a small center seating area. The petitioner stated that installing the third tether anchorage, and providing step-by-step instructions in the owner's manual for using the tether anchorage as required by a related provision of Standard No. 225, would be in direct conflict with the recommendation not to install a child restraint in that seating position. It said that ''(c)ustomer confusion and dissatisfaction will result.''

NHTSA has decided not to change its requirement that three tether anchorages must be installed in all passenger vehicles with three or more rear designated seating positions (including SUVs). Currently, SUVs comprise about half of the new vehicles purchased each year and have increased in popularity as family vehicles. While some child restraints might not be able to fit in the small center seating position on some of the smaller SUVs, some other child restraints might be able to fit the position, especially if a parent is intent on making it fit. Many parents are likely to try very hard to install child restraints in the center rear seating position, as the center seat is generally safer than the outboard positions in nearside side impacts. Tethering a child restraint in those narrow center seating positions will better secure it in a crash. Also, the center rear seating position on larger SUV's with 5 designated seating positions could readily fit a child restraint. Thus, this document retains the requirement for three tether anchorages.

ii. Location of Tether Anchorages. The March 1999 final rule also specified that, in each vehicle with a rear designated seating position other than an outboard designed seating position, at least one tether anchorage must be at such a designated seating position. The Alliance petitioned for reconsideration of that requirement as it applied to MPVs with six or more designated seating positions. The petitioner stated that the requirement was not practical for some of these MPVs because ''a child restraint installed in the center position will block ingress/egress for the third row outboard seating position in certain vehicles.'' In its August 1999 response NHTSA denied the request, explaining its reasons, set forth in the preceding section, for requiring a tether in a center seating position. The agency also noted that, ''As for practical problems with blocking ingress/egress for the third row, we believe the tether can be located to avoid such blockage. For example, the tether anchor could be attached to the ceiling or to the back of the lower part of the seat structure.'' 64 FR at 47570, footnote 9.

The Alliance petitioned for reconsideration of this denial (Docket 99–6160–6). The petitioner explained that it was referring to two types of vehicles. For both vehicles, the petitioner believed that the center seating position was not likely to be the position where a child restraint would be fastened and that the center position on these vehicles should therefore be excluded from having a tether anchorage.

First were large SUVs that had three or more rows of seats, such as the seven- and eight-passenger versions of DaimerChrysler's Dodge Durango. These vehicles feature a 3-passenger second row (split 40/20/40 percent) and a 2-passenger third row. The second row seats occupy the full width of the vehicle. No aisle is provided for access to the rear seats, which is obtained by folding the seatback of the outboard 40% seat and ''tumbling'' the folded seat forward and out of the way. The petitioner explains that the only center seating position is the 20% portion of the second row. It believes that this seating position is not suited to a child restraint, because a restraint in the position overlaps the two inboard edges of the outboard seats, preventing them from folding to allow access to the rear seating positions. A child restraint in that position would also block the belt buckles in the outboard seating positions, so passengers seated outboard would not be able to buckle their seat belts. The second type of vehicle was a vehicle in which there is a middle seating position whose seatback is divided into two or more sections that may be folded independently of each other. The division between two sections lies substantially along the seating reference plane of the middle seating position.

NHTSA has decided to deny this request. The March 1999 final rule required a tether anchorage at a center seating position on vehicles that have a center rear seating position to address the concerns of commenters to the NPRM that such a seating position should have an improved means of attaching a child restraint. (As noted above, the rule does not require that a LATCH system be installed in a center position, because some vehicle rear seats might not be wide enough to accommodate two LATCH systems side-by-side.) NHTSA continues to believe that many parents will want to place their child in a center seating position, and will do so on a vehicle such as the Durango, particularly if the family is transporting just one child. A child is generally safer in the center seat than in an outboard position closest to a side impact. Equipping the center position with a tether anchorage provides these parents the option of using the center position and ensures that if the position were used, the benefits of a tether would be available to the restrained child. Without a tether anchorage at that

position, optimal protection to the child could not be realized.

The petitioner's request is also denied with respect to vehicles of the second type described above, with a center seating position that has a seat back that folds along the vertical longitudinal centerline of the seating position. The zone in which the tether anchorage may be located within the vehicle is sufficiently large to give vehicle manufacturers flexibility in designing and locating anchorages that are practical. Current MPVs incorporate designs that locate tether anchorages in a variety of places, such as on the floor or the ceiling, which would avoid the petitioner's concerns about a tether strap sliding between a split seat back in the third row of seats.

In its petition for reconsideration, the Alliance asked for clarification that providing a user-ready tether anchorage at a seat that can be used at either an outboard or a non-outboard (*i.e.*, center) seating position meets the subject requirement. The petitioner stated that some vehicles are now equipped with laterally adjustable vehicle seats that can be moved from an outboard position to a non-outboard position. The petitioner wanted to know how the agency would position such a movable seat in determining compliance with the requirement that a tether anchorage must be provided in a center seating position.

In response, NHTSA is adding regulatory text (S4.6) to specify that if a vehicle has a laterally adjustable seat capable of being used in a rear center position, but does not otherwise have a seat that could be regarded as a rear center seat, that adjustable seat will be considered by the agency to be a rear center seat and must be equipped with a tether anchorage usable when the seat is in the center position. The agency will put the adjustable seat in the center position because we believe many consumers will use it there when using a child restraint. On a related point, NHTSA is not prohibiting manufacturers from having removable seats, even where the removable seat is equipped with a required LATCH or tether anchor system. For example, manufacturers will be able to design minivans and SUVs such that the last row can be readily removable (and readily replaceable) by the consumer, even if the seat contained one of the required LATCH systems and the vehicle, without the seat, no longer had two full LATCH systems. The agency does not see a safety need to restrict the ability of the consumer to remove the seats. If the vehicle seat is readily replaceable, the consumer will have available the LATCH system when the anchorage system is needed. The agency has added language to S4.6 of the standard to make this clarification.

2. Where There Is An Air Bag

The March 1999 final rule contained requirements that implemented the agency's policies about where children should be restrained in vehicles. If the vehicle has a rear designated seating position, a LATCH system should be placed there. This is because children are safer seated in a rear seat than in the front seat, regardless of whether there is an air bag for the front passenger seating position. If there is no rear seat, the question of whether a LATCH system should be installed at the front passenger designated seating position is answered by whether that position is equipped with an air bag that cannot be turned off with a manual on-off switch. If an air bag is present that cannot be turned off, that seating position is unsuitable for a LATCH system. Some consumers may believe that the presence of a LATCH system signals that the designated seating position is an appropriate one in which a child restraint may be installed, which is incorrect. For that reason, the standard prohibits manufacturers from equipping the front passenger seating position with a LATCH system when an air bag on-off switch is not present. (A tether anchorage is required for the seating position, however. A tether anchorage can be less conspicuous than a LATCH system and does not encourage users to install child restraints at the seating position in the way that a LATCH system would. A tether anchorage is required at the position so that, if a forward-facing child restraint were installed there, the restraint could be tethered tightly against the seat and as far as possible from the air bag.)

Ford petitioned the agency to rescind the prohibition against installing a LATCH system in a front seating position equipped with an air bag that lacks a manual on-off switch. The petitioner believed that vehicle manufacturers should have the flexibility to install lower anchors in front seats voluntarily. GM petitioned NHTSA to allow voluntary installation of a LATCH system ''in any passenger seating position even when an air bag on/off switch or automatic suppression is not present. We believe that adequate warnings are given to consumers to ensure a rear facing child seat will not be placed in front of an air bag.''

These petitions are denied. They are denied to the extent that they seek to allow manufacturers to install LATCH systems anywhere in the vehicle. NHTSA continues to believe that consumers would erroneously infer from the presence of a LATCH system in a front passenger seating position that the position can and should be used with a child restraint. An air bag that is not turned off could inflict serious or fatal injuries to a child in a rear-facing child restraint in the front passenger seating position. In addition, children are safer in rear seating positions. (Our analysis shows that rear seats are 26 percent safer against fatality for all children age 4 and under.) Thus, they should be restrained in rear seats. For these reasons, the standard will continue to require LATCH systems to be installed at rear seating positions, if such positions exist on the vehicle, and to disallow LATCH systems in front seating positions unless the vehicle is equipped with an air bag on-off switch.

The petitions are also denied concerning the installation of LATCH systems in a vehicle whose front passenger seating position has an air bag system certified to new requirements in Standard No. 208 (*i.e.*, one that suppresses the air bag when it senses the presence of the infant, 3-year-old or 6-year-old child dummy) and that lacks a rear seat. Such a vehicle is different from a vehicle with no rear seat whose front passenger seating position is equipped with an air bag and an air bag on-off switch. With the front passenger air bag disabled by an air bag on-off switch, there is not any risk of injury to children from the air bag. It is too early to know if this is the case for vehicles with no rear designated seating positions and an advanced air bag certified to the new Standard No. 208 requirements. The agency does not believe that there is sufficient experience with air bag deactivation technology at this time. In fact, the allowance of on-off switches until 2012 was to allow manufacturers time to perfect the suppression and low risk deployment systems in all their vehicles, and provide additional time to assure that the advanced systems work properly (65 FR 30722). Thus, we have concluded that vehicles with no rear designated seating positions and an advanced air bag certified to new Standard No. 208 will not be allowed to have a LATCH system installed at a front passenger seating position unless the vehicle is equipped with an air bag on-off switch. We will revisit this matter in several years after an assessment of the technology and its performance.

For the same reasons, the petitions are denied to the extent concerning the installation of LATCH systems in a vehicle whose front passenger seating position has an advanced air bag system

and that has a small rear seat (*i.e.*, a rear seat meeting the conditions in S4.5.4.1(b) of Standard No. 208).

b. Configuration of the Lower Bars

The July 31, 2000 response to petitions for reconsideration deleted certain requirements that were specified in S15 of Standard No. 225. (S15 sets forth the temporary compliance option available to manufacturers to meet draft ISO requirements for the lower anchorages.) S9.1 of the standard contains provisions that are identical to the ones that had been deleted from S15. Today's final rule amends S9.1 to reflect the changes that had been made to S15 and makes minor changes to improve the clarity of the requirements. These amendments respond to petitions for reconsideration submitted by the Alliance, Porsche, Honda, and VW.

S9.1.1(b) specifies that the lower anchorages of the LATCH system must consist of two bars that ''whose centroidal longitudinal axes are collinear.'' S9.1.1(d) and (e) require that lower anchorage bars be made so that they can be connected to, over their entire 25 mm length, by the connectors of a child restraint system, and so that they are 280 mm apart, measured from the center of the length of one bar to the center of the length of the other bar. These requirements are deleted as unnecessary. The requirements were adopted to ensure that the bars are sufficiently long and adequately spaced to couple effectively with the connectors of a child restraint system. These purposes can be achieved using the ''child restraint fixture'' (CRF) referenced in Standard No. 225, because the CRF rearward extensions are 280 mm apart and are 25 mm wide (see Figure 2 of Standard No. 225). Further, under S9.3, the vehicle must allow attachment of the CRF to the lower bars. Thus, the CRF's successful attachment to the anchorages would independently confirm that the anchorages are long enough to attach a child restraint system and spaced an appropriate distance apart.

S9.1.1(c) specifies that the lower anchorages must be not less than 25 mm, but not more than 40 mm in length. The limits were adopted in part to standardize the design of the lower bars. The 40 mm maximum length specification was also adopted to reduce the likelihood that the bars may bend in a crash. The Alliance and Porsche petitioned the agency to delete the 40 mm maximum length limit as unnecessary. Petitioners believed that as long as the anchorages meet the strength test requirements of the standard and can accommodate the CRF, the limit is not needed. Alternatively, the Alliance suggested that only one of the two LATCH bars in an outboard seating position need be limited, and that limit should be 50 mm.

NHTSA has decided not to delete the maximum length specification. We believe that limiting the length of the anchorage bars will contribute towards better performance of a child restraint in a side impact. NHTSA conducted side impact sled tests in response to the Transportation Recall Enhancement, Accountability and Documentation Act (the TREAD Act) (November 1, 2000, Pub. L. 106–414, 114 Stat. 1800). See Docket No. 02–12151. These simulations showed that limiting lateral movement and/or rotation of a child restraint in a side impact is important to reducing occupant head excursion in the crash and the likelihood of head impact against the vehicle side structure. We believe that limiting the length of the bars will limit the chances that the bar will bend in a crash, and will limit the ability of a child restraint to move laterally and/or rotate in a side impact. The effect cannot be quantified at this time. Moreover, limiting the length of the bars also increases the uniformity of appearance to consumers. However, to provide more design and manufacturing flexibility to manufacturers, this rule increases the maximum bar length from 40 mm to 50 mm.

Bornemann Products Incorporated asked whether the ''not less than 25 mm but not more than 40 mm'' language in S9.1.1(c) refers to the inside opening of the anchorages (bars), or to the overall length of the bar including the 6 mm steel material. The answer is the inside opening of the bar, and not the overall length of it. We are adding a figure to the standard to clarify the meaning of S9.1.1(c).

S9.1.1(f) requires that the lower bars must be ''an integral and permanent part of the vehicle or vehicle seat.'' The Alliance stated that the strength requirements of the standard obviate the need for this requirement. The petitioner also inquired whether threaded fasteners are permissible. Honda asked whether fastening anchorages to the vehicle with bolts would be acceptable.

Our answers are that we agree with the Alliance that the strength requirements of the standard obviate the need to specify that the anchorages are ''integral and permanent.'' Thus, the words are deleted from the regulatory text. In response to Honda, anchorages that are bolted into the vehicle are acceptable, provided that they cannot be removed without the use of a tool, *e.g.*, a screwdriver or wrench. Specifying that the bars are attached to the vehicle or vehicle seat such that they can only be removed by use of a tool, and specifying the type of tool, makes the requirement more objective while limiting how easily the bars can be removed.

The agency emphasizes that it does not believe that the anchorage system should be designed with the intent of having consumers remove and/or replace the anchorages. The anchorages should be permanent features of the vehicle, similar to seat belts. Anchorages that can be removed have many potential problems associated with them. They might not be present when needed; when reinstalled they might not be correctly located and aligned in the vehicle or be strong enough to properly secure the child restraint to the vehicle. There should be no instruction in owners' manuals instructing owners how to remove the anchorage system from a vehicle.

c. Location of the Lower Anchorages (S9.2)

1. Rearward Force Application

Stated generally, S9.2 requires that each LATCH lower anchorage bar be located so that it is (a) not more than 70 mm behind a point Z of the CRF while the CRF is pressed against the seat back by the rearward application of a horizontal force of 5 Newtons (N); and (b) not less than 120 mm behind the vehicle seating reference point. General Motors petitioned to increase the maximum allowable distance (70 mm) behind the CRF to allow a more rearward location of the rigid lower anchorages. Alternatively, GM suggested that NHTSA should delete the 5 N rearward force specification, or increase it to allow the CRF to be pressed harder against the seat back. The Alliance stated in a June 2, 2000 letter that the value should be deleted, or increased to 150 N.

We have decided not to delete the rearward force specification. The purpose of the specification was to make the procedure for locating the LATCH lower anchorages as objective as possible. A force specification needs to be established so that testers know how hard they should press rearward on the CRF to position the device on the vehicle seat. Positioning the CRF consistently is important because the LATCH lower anchorages must be within 70 mm of point Z on the CRF. The harder the CRF is pressed against the seat back, the further rearward point Z will be. Specifying how hard to press the CRF against the seat back will

ensure that the CRF is positioned correctly time after time.

However, we have decided to increase the rearward force specification to 100 N. The 5 N force level was specified in the March 1999 final rule to provide an objective means of positioning the CRF. On reconsideration, while a force specification is needed for objectivity, increasing the force level will result in a larger area provided to vehicle manufacturers for installing the LATCH lower anchorages, which facilitates the installation of the anchorages. We estimate that a 5th percentile adult female would be able to exert a 100 N force pushing back on a child restraint without problem. Accordingly, the change has been made to S9.2 of the standard.

2. Pitch, Roll and Yaw

The draft ISO specifications for LATCH lower anchorages specify that, with the CRF attached to the anchorages and resting on the seat cushion, the bottom surface of the CRF must have attitude angles within certain limits (with angles measured relative to the vehicle horizontal, longitudinal and transverse reference planes). Pitch must be 15° ± 10°, roll 0° ± 5°, and yaw 0° ± 10°. Porsche petitioned NHTSA to incorporate these pitch, roll and yaw requirements into the requirements of Standard No. 225. NHTSA agrees that the requirements are necessary to more objectively specify how the CRF is installed in the vehicle. Today's final rule incorporates the pitch, roll and yaw requirements into S9 of the standard.[5]

d. Marking the Location of Lower Anchorage Bars

The March 1999 final rule specified marking requirements for lower LATCH anchorage bars that applied to bars that could not be viewed from an angle of 30 degrees above a horizontal plane tangent to the seat cushion (S9.5). (The location of bars that were visible from that angle did not have to be marked.) Vehicles in which the bars are not visible from that angle must have a permanent mark on the vehicle seat back at each bar's location. The rule specified (S9.5(a)) that the permanent mark must be a circle that is not less than 13 mm (½ inch) in diameter, is in a color that contrasts with the seat material, and is located above each individual bar such that the center of the circle is not less than 50 mm and not more than 75 mm above the bar and is in the vertical longitudinal plane that passes through the center of the bar. The purposes of marking the location of the bars were to provide a visual reminder to consumers that the LATCH system is present and to help users locate and use the bars. 64 FR at 10802.

1. Determining the Visibility of the Bars

Section S9.5(b) specifies that the vehicle seat back need not be marked to identify the presence and location of the lower LATCH anchorage bars if each anchorage bar is visible when viewed in a vertical longitudinal plane passing through the center of the bar, along a line making an upward 30 degree angle with a horizontal plane. Porsche suggested that the anchorages should be visible at angles of 30 degrees or less. The agency is declining to make this change, as the anchorages would be less visible at smaller angles.

Honda suggested that NHTSA specify that the seat back be positioned in the manufacturer's nominal design riding position when determining whether the anchorage bars are visible. The petitioner explained that the seat backs on some of its vehicles tilt far forward to allow for increased luggage capacity when the seat is unoccupied. The petitioners stated that when the seat back is adjusted in that manner, a child restraint system cannot be installed in the seating position, so visibility of the LATCH bars is not critical. NHTSA agrees and has made this change.

2. Identifying Both Bars

The Alliance and Porsche believed that only one lower anchorage bar need be required to be visible or marked, not both bars. The agency has decided against adopting this suggestion. Both bars must be identified to the consumer because, for the foreseeable future, child restraints sold in this country will typically have components that attach to the bars independently of each other. Consumers will need to know where to attach each of the two components. Knowing where one bar is located will not necessarily enable consumers to determine precisely the location of the other bar.

3. Features of the Required Circle

Solid Or Open Circle. Mitsubishi and Porsche believed that the standard should allow manufacturers flexibility in selecting the shape of the mark, rather than specify a circle. The Alliance believed that manufacturers should be permitted to have a solid or open circle with the option of including a pictogram or wording in the circle. NHTSA has decided that a circle must be used, to standardize on the symbol used to identify the anchorages. Standardization will likely increase user recognition of the symbol. NHTSA has also decided to permit the option of using an open circle (uncolored area in the circle). The circle may include text or an easily recognizable symbol or pictogram. The symbol or pictogram must be clearly explained to the consumer in writing, such as in the vehicle owner's manual.

Contrasting Color. Porsche believed that requiring the circle to be in a contrasting color would be optically disturbing and displeasing to consumers. The Alliance stated that ''a contrasting color requires a sewn on label or a painted application and these may be less durable than an embossed or woven marking which would show the marking in the color of the seat fabric but which would still be conspicuous.'' The agency has decided that the color of the circle need not contrast with the color of its background in order to be noticed. Thus, we have removed the requirement. However, if we find that the circles need to be more conspicuous in future vehicles, we will consider re-establishing a contrasting color requirement in the standard.

Permanency. The Alliance requested that manufacturers be permitted to—utilize the attachment means they deem best. The option for sewn on tags either onto the material or into a seam, adhesive applications, painted markings, and markings woven or embossed into the fabric should be permitted. Any of these options could be made permanent, that is, an owner would have to destroy or deface the marking to remove it.

The rule did not specify the manner in which the permanency of the mark must be achieved. However, the agency makes the following observations and conclusions on this matter. The ''destroy or deface'' test is suitable for situations in which a consumer is not inclined intentionally to remove a mark or label. However, the agency does not agree that a destroy-or-deface test is a good one for determining permanency with regard to the circles in question. Some consumers may not see value in having the marks on the vehicle seats. If only one side of a tag were sewn into a seam, the owner could snip it off and it would meet the ''destroy or deface'' test. Such a tag is not permitted, since it is foreseeable that an owner would remove it. A tag that is sewn on at least half of its border, so as to not invite snipping, would be acceptable to NHTSA. Some painted markings and adhesive applications might not be sufficient, even if they could meet a destroy-or-deface test. For instance, paint that easily flaked off would defeat

[5] The specifications were incorporated into S15 (the ISO-based requirements of the standard that manufacturers may meet for a certain time period) of the standard by the July 2000 response to petitions for reconsideration. 65 FR at 46636.

the purpose of the requirement. In contrast, the agency anticipates that weaved, embossed, stamped, and engraved marks would be permanent.

Vertical Position Of The Circle. Mitsubishi believed that consumers would be better assisted in locating the anchorage bar if the 50 mm lower limit for location of the anchorage bar mark were eliminated. The Alliance believed that the vertical position of the marking should be less restrictive than what the rule required. ''It should be visible at a 30 degree viewing angle and be located no more than 100 mm from the horizontal centerline of the anchorage bar in the vertical longitudinal plane.'' Mitsubishi and the Alliance asked where the ''seat back'' begins for the purpose of marking the lower anchorages on highly contoured seats. Mitsubishi stated that the bottom cushion of some of its seats curves toward the vertical and supports a portion of an occupant's lower back before a separate seat back begins. Petitioner stated that if the agency considers a portion of a vehicle seat to be the seat back solely by reference to a physical separation between the bottom seat cushion and the seat back, the circle markings would be more than 75 mm above the anchorage bars, which is not permitted by S9.5(a)(3).

The agency is not eliminating the 50 mm lower limit for the location of the bars because without it, the mark might be too low to be seen. The agency is not increasing the 75 mm upper limit to 100 mm because it might be difficult for some consumers to align the child restraint attachments with the circles when the circles are 100 mm from the bars. The 75 mm limit also harmonizes with Transport Canada's requirements for the location of the markings, as further discussed below.

To make it easier to find where the circles should be placed, the agency is amending S9.5(a) to use reference planes developed by Transport Canada in Regulation 210.2, ''Lower Universal Anchorage Systems for Restraint Systems and Booster Cushions '' (Standard 210.2). That standard requires the markings to be on the seat back between 50 and 75 mm above or on the seat cushion 100 ± 25 mm forward of the intersection of the vertical transverse and horizontal longitudinal planes intersecting at the horizontal centerline of each lower anchorage. This approach is not only clearer in where the circles should be, but also permits the markings to be located either on the seat back or the seat cushion, which allows flexibility to manufacturers such as Mitsubishi with atypical seat designs. The area 100 ± 25 mm forward of the intersection of the planes is specified to account for the lower anchorage bars being recessed in the padding of the seat back or recessed in the seat bight. This final rule incorporates a figure (Figure 22) into the standard that illustrates the intersection of the vertical transverse and horizontal longitudinal planes.

Lateral Position Of The Circle. The Alliance stated that a tolerance needs to be provided for centering the circle over the anchorage bar to account for production variation and seat cover configuration. Petitioner suggested that the centerline of the marking should be located ± 25 mm from the vertical centerline of the anchorage bar. We agree to provide a tolerance for centering the circle over the bar. However, the 25 mm tolerance that petitioner suggested is too large. If an anchorage is the minimum length (25 mm) and the centerline of the circle is 25 mm from the centerline of the bar, the centerline of the circle would not be over the bar. The tolerance is ± 12 mm from the vertical centerline of the bar. A tolerance of ± 12 mm ensures that, even with the shortest bars (those only 25 mm long), the centerline of the circle is over a part of the anchorage bar to which a child restraint would connect.

4. Covering Otherwise Visible Bars

Several petitioners asked about anchorage bar covers. Porsche asked whether easily removable caps or covers for otherwise visible LATCH lower anchorages may be provided. Honda stated that it is considering using a guide to make it easier to attach a child restraint. ''With this guide, we would like to use a cover to prevent contaminating the anchorage by foreign substances falling or being inserted into the guide.'' Honda suggested adding a provision to S9.5 that would specify that, if the vehicle has a guide and cover for a bar: (1) the vehicle shall comply with S9.5(b) when the cover is removed; and (2) the cover shall be marked permanently with a circle according to S9.5(a) of the standard. Our answer to these petitioners is that caps and covers may be provided on these vehicles that meet S9.5(b), if the cap or cover is permanently marked. Marking the cap or cover alerts the consumer to the presence and location of the LATCH bars. The meaning of the words, symbols or pictograms must be explained to the consumer in the owner's manual. The standard has been amended to make these requirements clear.

5. Guide Devices

Volkswagen (VW) asked about use of an anchorage locator such as a guide device installed onto the anchorage at the seat bight. VW suggested that a guide device ''would be clearly visible even if the bar itself is not visible,'' and that visible guidance devices should therefore meet S9.5's marking and conspicuity requirements. We have decided that the seat back need not be marked if the visible guide device is permanently attached to each anchorage bar and is not removable. The standard has been amended to allow this. If the device were removable, it could be lost or misplaced. Without the device, the bar will be hidden from the consumer, and as such, less likely to be used.

e. Location of Flexible Routing Devices

Section S6.2.1.2(b)(1) of Standard No. 225 specifies that any flexible or deployable tether strap routing device must be not less than 65 mm behind the torso line for that seating position, measured horizontally and in a vertical longitudinal plane. This provision is intended to keep the routing device far enough back to remove slack from the tether strap, particularly a tether strap that is mounted high on the back of a child restraint.

In its petition for reconsideration, Ford noted that S6.2.1.2 does not specify the conditions under which this dimension is to be measured. Ford believed that the provision is intended to measure the position of the routing device in actual use, while a tether strap is routed through it and tensioned.

Ford suggested that a procedure be developed using the SFAD 2.[6] Such a procedure would install the SFAD 2 on the anchor bars (with the length of the anchor attaching bars properly adjusted) and the front part of the SFAD 2 base touching the seat cushion. A 40 mm wide nylon tether strap would be routed through the tether routing device and hooked to the appropriate tether anchor, following the vehicle owner's manual instructions. The forwardmost contact point between the strap and the routing device should be 65 mm or more behind the torso line when the tether strap is clamped flat against the top surface of the SFAD with a tension of 55 to 65 N in the strap. For seating positions without lower anchorages, the SFAD 2 must be held with its central lateral plane in the central vertical longitudinal plane of the designated seating position. For this measurement, the adjustable anchor attaching bars of SFAD 2 would be replaced by spacers that end flush with the back surface of the SFAD base.

[6] If SFAD 1 were used for this test measurement, that fixture might contact the routing device and push it rearward of the 65 mm limit in some seats.

NHTSA believes that the above procedure recommended by Ford is objective and will meet the intent of the requirement. This final rule adds language to S6.2.1.2 to reflect this.

f. Performance and Testing of Anchorage Systems

1. Strength of Tether Anchorages

The NPRM proposed that the tether anchorage would be tested in a static pull test. A force of 5,300 Newtons (N) would be applied by a belt strap that attaches to the tether anchorage, and applied in the forward horizontal direction. The proposal was based on a Transport Canada requirement of 5,300 N which had been applied in Canada to non-user-ready tether anchorages in passenger cars prior to 1999. The NPRM proposed that the 5,300 N force would be attained within 30 seconds, with an onset force rate not exceeding 135,000 N per second, and maintained at the 5,300 N level for one second. The NPRM proposed that each structural component of the anchorage must withstand the 5,300 N force, and that there must not be any complete separation or failure of any anchorage component.

The final rule adopted a static pull test using a test fixture, instead of a belt strap, to apply the test forces to the tether anchorage. The fixture has a configuration representative of a child restraint system and applies the test forces in a more realistic manner than does a belt strap. The fixture is attached to the tether anchorage at the fixture's top, and to the vehicle seat at the fixture's bottom end (at the intersection of the vehicle seat cushion and back) using the vehicle's seat belt or the lower bars of a child restraint anchorage system. The test force is applied pulling on a strap that is attached to a point on the fixture. A force of 15,000 N is applied to the fixture, which in turn, applies the force to the three anchorage points (the tether anchorage and the seat belt anchorages or the lower bars). Since the fixture is attached to three anchorage points, only a portion of the 15,000 N force is actually applied to the tether anchorage. The 15,000 N force is attained within 30 seconds, at an onset force rate of not more than 135,000 N per second; and maintained at the 15,000 N level for one second. The final rule requires that (a) there must not be any point on the tether anchorage displaced more than 125 millimeters (mm) (approximately 5 inches); and (b) there must not be complete separation of any anchorage component.

The 15,000 N force level was selected because the agency believed it to be sufficiently high to ensure that the anchorage will withstand the loads generated by children in forward-facing restraints. This determination was based on test data from Transport Canada. (Transport Canada obtained these data after it had adopted a 10,000 N strength requirement for testing tether anchorages. As discussed later, Transport Canada subsequently raised its requirement to 15,000 N.) Canada conducted 48 km/h (30 mile-per-hour (mph)) dynamic tests of a prototype child restraint (weighing 32 lb) that had rigid LATCH attachments and a tether (''CANFIX''), and a 3-year-old (33 lb) dummy. It found dynamic loads of about 3,500 N and 4,000 N on the tether anchorage (loads on the lower attachments ranged from 3,000 N to 4,000 N). Transport Canada then conducted a static pull test to determine the amount of force that would have to be applied to the CANFIX child restraint to produce a static load of 3,000 to 4,000 N on the lower anchorages. The pull force was 14,000 N (applied to three anchorage points by way of a fixture). NHTSA determined that a 15,000 N load requirement was needed to ensure that an anchorage system will not fail in a crash. In addition, the agency believed that simultaneously applying a 15,000 N load to the three LATCH anchorages was comparable to applying an approximate 5,000 N load to a single anchorage.

The Alliance, Ford and other manufacturers opposed the strength requirements. Petitioners believed that the agency's rationale for the 15,000 N requirement was invalid. The Alliance and Ford said that applying a 15,000 N load to the three LATCH anchorages by means of the SFAD fixture is not the same as applying a 5,300 N load to any single anchorage by a belt strap. Petitioners also believed that the Transport Canada test used an unrepresentative child restraint and sled pulse. Petitioners further suggested that an 8,000 N load application applied by an SFAD in the forward direction is sufficient for motor vehicle safety, regardless of whether lower anchors or top tether anchors are being tested. A child restraint manufacturer, E-Z-On, petitioned to increase the 15,000 N requirement, believing that it should be higher to account for the tethering of vests and harnesses that restrain children and young adults with special needs who may weigh up to 120 pounds. All significant issues raised by each of these petitions are addressed below.

i. Final Rule's Basis for the Strength Requirement

The petitioners believed that it was incorrect for the agency to believe that the test load applied to the test fixture at a point approximating the center of gravity of a child/CRS system is similar to testing each of the anchors separately. The Alliance stated that the conclusion ''ignores the fact that forces are vector quantities having both a magnitude and direction that cannot be summed in a direct arithmetic (scalar) fashion when they are not acting in the same direction.'' Ford stated in an April 19, 1999 petition for reconsideration that in many sedans in which the tether anchorage is mounted to the filler panel between the top of the rear seat and the rear window, it is common for 70 to 85 percent of the 10,000 N force on SFAD–1 (used to test tether anchorages at seating positions with seat belts) to be transferred into the top tether strap. Ford stated that at a 15,000 N SFAD force, the percent of the force on the top tether is 65 to 80 percent in many sedans.

Ford stated that when using SFAD–2, the total forces on the lower anchors are greater than the force applied to point X on the SFAD ''because the fixture applies realistic vertical forces as well'' the amount of this reaction force will vary somewhat in different vehicle designs, but will typically be 6 to 7 kN. The resulting total force on both the lower anchors from the 8 kN force is about 10.5 kN. * * *'' Ford stated that ''11 kN force applied to point X resulted in a force of 9.3 kN on the outer anchor and 6.7 kN on the inner anchor, for a total anchor load of 16 kN on both lower anchor * * *.''

The Alliance also believed that the 15,000 N requirement was based on a Transport Canada test which petitioners said—

> did not accurately simulate vehicle seats or child restraints. It did not accurately simulate the loads paths that a child restraint and child would have on child restraint anchorages in an actual vehicle. Thus, the 15 kN force has only a tenuous relation to what would occur in a vehicle crash and should not be used as a basis for setting the static test force level in FMVSS 225.

Ford stated that the test used a ''very heavy and rigid child restraint, a very rigid tether anchor, and a high strength/low elongation tether strap.''

Response. The agency does not agree with the Alliance or with Ford that the strength requirement should be revised. Ford's finding that one anchorage can be subjected to more or less load than another is not surprising, since the SFAD is positioned on the vehicle seat

cushion and would naturally be affected by the influences of the cushion, seat structure and other features of the vehicle that can affect loading patterns. The distribution of the force applied to the device (and in a real life situation to a child restraint) can vary from vehicle to vehicle and between one child restraint and another. The distribution of force in a crash can also vary within a given vehicle, depending on the design of the seat position and the child restraint. The percentage distribution of the crash forces among the anchorages can also depend on how the child restraint is installed. The tightening of webbing (of either a vehicle belt system or LATCH attachments on a child restraint) could have a significant effect on the distribution of the applied load. In the event that a vehicle belt is loose, or the LATCH or tether webbing is improperly installed with slack, it is likely that highly unequal load transfers to the various anchorages could occur. Thus, the fact that the SFAD unevenly distributes the test load to the anchorages is a positive factor since it better reflects real world use and performance. The fact that the anchorages might be subjected to loads above or below 5,300 N is not material, as long as the total test load applied to the system is appropriate for the system. The safety need for and practicability of the requirement will be discussed in the next sections.

Further, the agency does not agree that the Transport Canada test should have been disregarded. The data were meaningful in providing a basis for estimating the force imposed on the LATCH anchorages. The child restraint used was a reasonable representation of a child restraint with rigid LATCH anchorages, as were the tether anchorage and the tether strap. There was no basis at that time for setting a lower strength requirement.

In concluding that the 15,000 N requirement should be retained, NHTSA has closely considered the information submitted by the Alliance in the petitions for reconsideration regarding an 8,000 N requirement. As discussed in the remainder of this section, we have decided to retain the requirement while changing the displacement limit of 125 mm to a prohibition against the tether anchorage separating completely from the vehicle seat or seat anchorage or the structure of the vehicle.

The 15,000 N load requirement harmonizes with Canadian requirements for the strength of child restraint anchorage systems. On May 30, 2002, Transport Canada published its final regulation on universal anchorage systems for child restraints. Transport Canada requires the anchorage system to withstand (*i.e.,* not separate completely from the vehicle seat or seat anchorage or the structure of the vehicle) when tested with an SFAD applying a 15,000 N force. Canada has analyzed NHTSA's evaluation of the petitioners' information and arguments and has concurred with our determination that the 15,000 N requirement meets the need for motor vehicle and child safety.

ii. What Should the Requirement Be?

A. Petitioners Believe It Should Be 8,000 N

The Alliance petitioned that an 8,000 N load application applied by an SFAD in the forward direction is sufficient for motor vehicle safety regardless of whether lower anchors or top tether anchors are being tested.

1. Comparison to Standard No. 210 Requirements

The Alliance stated that an 8,000 N load is consistent with FMVSS No. 210 (''Seat Belt Assemblies,'' 49 CFR § 571.210) with respect to scaling test forces and occupant sizes. The Alliance estimated that LATCH anchorages will be subjected to a 27 kilogram (kg) mass (about 60 pounds). This value represented the combination of an occupant and a restraint system. (The mass of the occupant, a child, was estimated to be 18 kg (equal to about 40 pounds), while the mass of the child restraint was 9 kg (about 20 lb).) The petitioner stated that the 27 kg mass was 36 percent of the 75.5 kg derived mass for the lap belt test and 33 percent of the 81 kg derived mass for the lap/shoulder belt test. Thus, the petitioner said that an 8,000 N static test force was suitable since it is approximately 36 percent of the 22,200 N test force applied in lap belt tests and 33 percent of the 24,000 N test force used on lap/shoulder belt combinations.

2. Engineering Analysis

The Alliance also believed that an 8,000 N load application in the forward direction is sufficient for motor vehicle safety based on an analysis of the forces that are likely to be imposed on a LATCH system in a crash. Petitioner submitted a February 16, 2000 document entitled, ''Engineering Basis for Strength Tests of Child Restraint Anchors (FMVSS 225)'' (Docket Document 6160–19), to support its belief that an 8,000 N load application is the maximum force level that should be attained in the anchorage strength test. The paper explained that the value that the standard should specify ''should be * * * consistent with the appropriate management of the energy of the child/CRS in a vehicle crash. It is this force which the anchorages must be able to resist in order to hold the CRS [child restraint system] in place during a crash.'' The petitioner believed, and the agency agrees, that in a frontal collision, the maximum expected force acting on the center of gravity of a child in a child restraint is calculated as the total mass of the child and the child restraint (''the child/CRS system'') multiplied by the acceleration of this system. Based on certain assumptions about the mass of the system and the acceleration of the system in a certain type of vehicle, the Alliance concluded that the LATCH anchorages would be subject to a force of only 8,000 N.

As noted above, the petitioner made the following assumptions about the mass of this system: mass of child is 18 kilograms (kg) (equal to about 40 pounds); mass of the child restraint is 9 kg (about 20 lb); total mass of system is 27 kg (about 60 lb). The mass of the child restraint was estimated to be 9 kg (20 lb) based on current child restraints. The acceleration of the system was based on the typical peak sill acceleration of a 1999 Dodge Intrepid during a 30 mph rigid barrier collision, which was about 27 g, or 265 m/s^2. The petitioner selected this vehicle because the car exhibited the highest peak acceleration within the group of competitive vehicles for which data were available for the analysis. Based on these estimates, the Alliance believed that the expected peak force for the child/CRS system would be: $F = ma = (27\ kg)(265\ m/s^2) = 7{,}200\ N$.

Moreover, the Alliance argued that the force should be applied for only 250 ms, because the significant accelerations that occur in a crash occur during the first 200 ms of the crash event.

With these considerations in mind, the Alliance suggested that the strength test procedure should specify the following:

> Starting with a preload of 500 N, ramp-up the force (in an approximately linear fashion to avoid overshoot and undershoot) to 8,000 N and apply the force for 250 ms (providing a dwell to assure an accurate attainment of force magnitude and a conservative application time to assure accurate attainment of force magnitude and a conservative application time to assure accurate impulse.)

3. Static v. Dynamic Performance of Materials

The Alliance further argued that the agency should not have based a static pull requirement on the results of a dynamic test since the two are not equivalent. The Alliance stated that there is nearly a two-fold ''factor of

safety'' in a quasi-static test procedure when compared to the dynamic, crash-event performance of the same anchorage. ''Static and dynamic strengths of materials are fundamentally different due to strain rate sensitivity. Strain rate sensitivity defines how the strength of materials changes with the velocity of loading.'' The Alliance stated that the design of an appropriate static or quasi-static test to evaluate the strength of a component subject to dynamic loads should consider strain rate sensitivity as an important parameter. The petitioner stated that it believes that LATCH anchorages can withstand peak dynamic loads that are significantly larger than static test loads. The Alliance stated that it conducted component level tests to directly compare the static and dynamic ultimate strengths of lower LATCH anchorages (Docket comment 6160–27). The tests involved a static test-to-failure of an anchor loop and mounting bracket subassembly, and a dynamic test using a drop tower that created the same failure condition as the static test. In the static test, which used an Instron testing machine to load the anchor loop in the same direction as a child restraint would load it in a frontal crash, the failure mode was consistently found to be shear-out of the mounting hole.

A drop tower test was then conducted to determine the acceleration that would produce the same failure mode as the static test. In the test, a 50 kg (110 lb) stack of laboratory weights was hung on an anchor loop. The drop tower height was increased until the post-test condition of the part was comparable to the parts subject to the static ultimate strength test. The acceleration measurements were filtered to SAE J211 60 CFC.

The static failure mode was duplicated in drop tower tests with peak accelerations of 45 g (440 m/s^2). The Alliance believed that the peak dynamic load that corresponds to the 45 g acceleration is: (50 kg)(440 m/s^2) = 22,000 N. Thus, the overall deformation and shear-out failure was similar for a statically loaded part that failed at 16,500 N and a dynamically loaded part that had peak dynamic load of 22,000 N. That is, a significantly larger load was required to fail the part under dynamic conditions. The petitioner stated:

> The most severe vehicle impact conditions will result in a dynamic strength of approximately two times the static strength for the typical carbon steels used in automotive applications. The elevation of strength will depend on the selection of material. However, steel is one of the least strain rate sensitive engineering materials. If plastic or composite materials were used instead, the elevation of strength would be even larger. The data shown here represents essentially the worst case for strength elevation. A static or quasi-static test load that would simulate high-speed impact should be approximately 50% of the expected dynamic load.

B. NHTSA Decides On 15,000 N

1. Proportioning Seat Belt Loads

NHTSA does not agree that it is appropriate to proportion Standard No. 210's load requirements. Loading of the seat belt anchorages by the vehicle's belt system when restraining an adult occupant is not analogous to the loading of the LATCH anchorages by a child in a child restraint. Differences in the geometry of the loading, the attachment of webbing and/or other components to the LATCH anchorages, and other factors that are not thoroughly known or evaluated argue for separate strength requirements for each seat set of anchorages. Further, the potential for misuse is greater with respect to the use of LATCH anchorages than with the use of vehicle belts to restraint adult occupants, as consumers in the past did not typically attach top tethers to the tether anchorage and often did not tightly attach child restraints to vehicle seats. Such misuse could increase or otherwise affect the loading of the LATCH anchorages in a manner that renders the loading of the anchorages dissimilar to the loading of seat belt anchorages.

2. Engineering Analysis

The agency agrees with the Alliance that Standard No. 225's strength requirement can be based on an analysis of the forces that are likely to be imposed on a LATCH system in a crash. NHTSA agrees that the maximum expected force acting on the center of gravity of a child in a child restraint is calculated as the total mass of the child and the child restraint system (''the child/CRS system'') multiplied by the acceleration of the system. However, the agency does not agree with many of the Alliance's assumptions about the values that should be used for the mass and acceleration of the system.

NHTSA believes that petitioner's assumptions about the mass of the child/CRS system are too narrow. Child restraint manufacturers can and do produce full-harness child restraints for children over 18 kg, as nothing in the Federal motor vehicle safety standard for child restraint systems (Standard No. 213, 49 CFR 571.213) prohibits these child restraints to be recommended for children with masses above 18 kg (40 lb). As an example, Britax Child Safety, Inc., produces a number of 5-point harness type restraints for children weighing more than 18 kg (40 lb). Currently, Britax produces the ''Marathon,'' a convertible restraint certified for use by children weighing up to 65 lb, the ''Husky,'' a forward-facing only restraint certified for use by children weighing up to 80 lb, and the ''Traveler Plus,'' a restraint designed for special needs children and certified for use by children weighing up to 105 lb.[7]

The agency undertakes rulemaking to amend Standard No. 213 in response to changes in child restraint designs, uses and the safety needs of children. For example, NHTSA recently proposed to amend Standard No. 213, which currently applies to child restraints recommended for children up to 50 lb, to extend its applicability to restraints recommended for children weighing up to 65 lb (May 1, 2002, 84 FR 21806). The Transportation Recall Enhancement and Documentation (TREAD) Act directed NHTSA to consider whether to amend Standard No. 213 to cover restraints for children weighing up to 80 lb. To that end, the agency is working with the Society of Automotive Engineers (SAE) to develop a 10-year-old dummy for use in testing booster seats. Given the innovation in child restraints design and use and the move toward keeping children in child restraints longer, the mass of the child/CRS system on a LATCH system should be assumed to be greater than 18 kg. We will assume a child mass of 29.5 kg (65 lb), in line with the May 1, 2002 rulemaking proposal.

Further, the agency disagrees with the Alliance that the acceleration of the child/CRS system should be 27 g (265 m/s^2). NHTSA has reviewed data from joint NHTSA/Transport Canada frontal, 30 mph rigid barrier crash tests of 1995 to 1999 model year vehicles. Transport Canada found that peak accelerations of many of these vehicles were higher than 27 g. Based on a comparison of the pulse shapes for the same vehicle and the same test used by the Alliance and Transport Canada, NHTSA believes that the two entities obtained different peak accelerations because of the filter used on the data. The Alliance used a 30 Hz cutoff filter, rather than the SAE specified CFC 60 with a 100 Hz cutoff frequency.

[7] Britax provides the following consumer information for its LATCH-equipped child restraints certified for children weighing more than 40 lb: ''Use vehicle seat belt (not LATCH connectors) for installations with children weighing more than 48 pounds (21 kg.). Refer to the vehicle's owner's manual for the maximum weight rating for their LATCH anchors. Unless specified otherwise by the vehicle manufacturer, assume a 48 pound child is the vehicle LATCH anchor limit.''

NHTSA has determined that the 100 Hz filter is the appropriate one to use when determining the accelerations and corresponding forces transmitted through the vehicle structure to the LATCH anchorages. SAE Recommended Practice J211, ''Instrumentation for Impact Test—Part 1—Electronic Instrumentation,'' specifies the various filter classes and associated cutoff frequencies that are to be used in impact tests. SAE J211 specifies Class 60 filters for vehicle accelerometer measurements, using a cutoff frequency of 100 Hz. NHTSA also specifies SAE J211 filtering for dynamic testing, including testing specified in FMVSS No. 208, FMVSS No. 214 (''Side Impact Protection''), and in the New Car Assessment Program, as well as in Part 572, the regulation for anthropomorphic test dummies. This is the filtering methodology that was employed by Transport Canada in obtaining the vehicle acceleration data used in its calculation of the maximum force levels through the center of gravity of the child and child restraint. The Alliance used the identical vehicle pulse using the same filtering methodology, but used a cutoff frequency of 30 Hz, instead of 100 Hz. Use of the 30 Hz cutoff frequency effectively eliminates the shorter duration, higher amplitude peaks that are seen when using a 100 Hz cutoff. However, such a low frequency filter eliminates a significant portion of the energy that is transmitted through the vehicle structure to the LATCH anchors. This is why SAE J211 specifies the higher cutoff frequency for such applications.

The agency examined a total of forty-three 30-mph rigid barrier tests conducted in a joint NHTSA/Transport Canada test program to evaluate air bag performance. Plots were obtained for the left door sill acceleration filtering at both the 100 Hz and 30 Hz cutoff frequencies. The plots are provided in Docket NHTSA–98–3390. Using the industry standard SAE J211, the plots indicate that the average peak deceleration for the entire set of tests is 32.7 g, with a standard deviation of 7.87 g and a maximum of 51.6 g (for the model year 1999 Plymouth Breeze). Based on these data, the agency has assumed the acceleration of the child/CRS system to be 48.4 g. This is based on the mean plus two standard deviations (32.7 g + 2(7.87 g)) of vehicle crash pulses conducted by NHTSA and by Transport Canada. We do not believe that one standard deviation is sufficient because with one standard deviation, 16 percent of the crash pulses would fall above that value. For two standard deviations, only 2.5 percent fall above.

Assuming a child and child restraint mass of 29.7 kg (65 lb), the dynamic force expected to act through the center of gravity of the child/CRS system in a 48.4 g crash is approximately 14,100 N. The agency is not reducing Standard No. 225's 15,000 N load requirement to take account of the static loading condition of the requirement. Notwithstanding the Alliance's comparison of static to dynamic strength of one type of anchorage system, there is no consistent and direct correlation between static and dynamic strength of anchorage systems. Furthermore, the dynamic force on the system could be higher than 15,000 N.

Such is the case when vehicle accelerations are more than 48.4 g. In a 30 mph rigid barrier crash, the model year 1999 Plymouth Breeze had an acceleration of 51.6 g. The dynamic force acting through the center of gravity of the system (generated by a child/CRS mass of 29.5 kg (65 lb)) was 18,500 N. The same calculations for an 80-lb child occupant result in a dynamic force of 20,600 N.[8]

In addition, the requirement is needed for real-world crashes above 30 mph. Data from NHTSA's Fatal Analysis Reporting System and General Estimates System indicate that in 2000, there were 3,390,000 crashes above 30 mph. In response to the TREAD Act, NHTSA initiated a program to include child restraints in certain New Car Assessment Program (NCAP) vehicles. All vehicles and child restraints anchorages tested to date have performed well, with the exception of the model year (MY) 2001 Toyota Echo (see NHTSA–98–3390–58). During the NCAP test conducted at 35 mph and with the Cosco Triad forward-facing LATCH child restraint with a Hybrid III 3-year-old dummy positioned in the rear passenger seat, the tether anchorage in the vehicle sheared. Following this structural failure of the tether anchorage, NHTSA conducted a number of tests in an attempt to understand why the anchorage in this particular vehicle failed when tether anchorages in all other NCAP vehicles tested had performed without incident.

NHTSA had performed a FMVSS No. 225 compliance test on the MY 2000 Toyota Echo, using the 5,300 N belt strap option set forth in Standard No. 225, S6.3.4.1. Both outer anchorages were loaded simultaneously with no failure of either anchorage. Following the failure of the tether anchorage in the NCAP vehicle, NHTSA performed a compliance test on the tether anchorage at the rear driver's side position of the NCAP vehicle, again using the 5,300 N belt strap load. Again, the tether anchorage passed the compliance test without incident. For information, the test was continued, increasing the load until the anchorage failed. This occurred at a load of approximately 6,300 N (a margin of 18 percent above the requirements of the standard).

Following this compliance test, NHTSA had the facility test the tether anchorage located at the center rear seating position of the MY 2000 Toyota Echo. The configuration and the material of the tether anchorage of the MY 2000 Toyota Echo are the same as that of the MY 2001 model. Instead of using the belt strap to apply a 5,300 N load as had been done on both previous occasions, the agency performed the test using the SFAD 1 test device. This test device attaches to the vehicle via the lap and shoulder belt and the top tether, and a load is applied horizontally through a specified point on the test device. As such, the SFAD 1 closely replicates the loads actually seen on the vehicle anchorages in an actual crash, as opposed to the belt strap test, which only loads the specific anchorage being tested.

The SFAD 1 was loaded to 10,000 N, held for 1 second, and then increased until failure of the tether anchorage.[9] In addition, the tether strap and the vehicle belt were instrumented to measure their respective loads. In this test, the tether anchorage failed upon application of a load of 13,000 N to the SFAD 1.

In examining possible differences between the Toyota Echo and other NCAP vehicles examined as part of this analysis, the agency measured the Echo's peak deceleration to be 44.3 g, using the SAE J211 filter with a 100 Hz cutoff frequency. This is 4.5 g higher than any other NCAP vehicle evaluated in the analysis, and more than 10 g higher than any vehicle pulse evaluated in the 30 mph crash tests performed jointly between Transport Canada and NHTSA. NHTSA requested information regarding the vehicle pulse of the Toyota Echo in a 30 mph crash from the manufacturer, and was told that it was 34 g.

Toyota informed NHTSA that it had performed static tests with both a belt

[8] Note, however, that 80 pounds is the weight of an average 11-year-old. An 80-lb child is likely to be restrained in the vehicle's seat belt system while using a belt-position booster seat. Such seats are not required to have LATCH attachments.

[9] 10,000 N is the peak load required in S6.3.4 of FMVSS No. 225, which represents the Transport Canada alternative compliance option permitted by current Standard No. 25 until August 31, 2004.

strap load and with a SFAD 1 that replicate the results found in NHTSA testing described above. In each instance, the tether anchorage failed at a load measured to be 6,300 N at the tether anchorage itself. (In Toyota's test, the tether anchorage failed when tested with SFAD 1 at a load of 11,500 N. This is compared to the 13,000 N load applied by SFAD 1 in our test of the center tether anchorage. These results are very comparable.) Toyota also conducted dynamic testing of the Toyota Echo with a reinforced anchorage design, at 35 mph, with no failure of the anchorage. In this dynamic test, Toyota measured the force at the tether anchorage itself to be 8,300 N. In comparing the difference between the static breakage load and the top tether load in a 35 mph dynamic test, Toyota found that the tether anchorage was able to withstand about 30 percent greater loads dynamically than statically. Toyota also used the 30 percent margin found in its analysis of the static breakage load using the belt strap test versus the measured tether load in the 35 mph test to estimate what the required SFAD load would need to be to pass a 35 mph dynamic test, given that the anchorage failed the SFAD test at 11,500 N. Multiplying the 11,500 N SFAD breakage load by 1.3 produced an answer of 15,000 N. Thus, Toyota estimated that a 15,000 N static load would be needed to ensure that the anchorage would not break in a 35 mph crash.

The results of this testing indicate that high tether anchorage loads can occur in isolated, and admittedly severe crash conditions. In comparing the results of testing conducted on the initial Toyota Echo tether anchorage design and a reinforced design, Toyota confirmed that an anchorage designed to meet the 15,000 N static test strength requirement (the NHTSA requirement) would be necessary to ensure protection in a 35 mph crash in a vehicle with a relatively severe crash pulse such as the Toyota Echo.[10] The testing also confirmed the ability of these anchorages to withstand greater loads under dynamic conditions as compared to static test conditions.

For the aforementioned reasons, NHTSA will not reduce Standard No. 225's static strength test requirement of 15,000 N. The agency notes that a 15,000 N load requirement harmonizes with the 15,000 N Canadian requirement for the strength of child restraint anchorage systems. Thus, retention of the standard's strength requirement of 15,000 N furthers the agency's efforts to harmonize its standards with foreign countries and international bodies to the extent consistent with 49 U.S.C. Chapter 301 (the National Traffic and Motor Vehicle Safety Act).

In a related matter, we deny a petition for reconsideration of the March 1999 rule from E–Z-On Products, Inc. of Florida. Petitioner E–Z-On Products asked that NHTSA set the standard's tether anchorage strength requirement at a level sufficient to account for usage by children in safety vests who weigh up to 120 lb.

As discussed in previous sections, the agency has based the determination of the maximum strength requirements on assumptions regarding the mass of the system and vehicle decelerations. Specifically, with respect to the mass of the child, the agency has used 65 lb, as proposed in the TREAD NPRM, which exceeds the current limit of Standard No. 213's applicability by 15 lb. While there are some vest systems and other child restraint systems that are certified for higher weights, it would be unreasonable to require each vehicle manufacturer to design tether anchorages for occupants weighing nearly twice the limit contemplated by the existing child restraint standard.

Further, 120 lb is greater than the weight of a 5th percentile female adult. Persons of this weight should be restrained by the vehicle belt system, not the child restraint anchorage system. One of the purposes of establishing a standard requiring the installation of child restraint anchorage systems in vehicles was to ''optimize seat belts to restrain older children, teenagers, and adults.'' (64 FR at 10788) In a similar vein, the agency believes child restraint anchorage systems can best be optimized by focusing on the masses generated by children in child restraints and by not adding to the burden of the LATCH system the goal of restraining older passengers as well. The agency notes that it expects to address this matter further in the future. We are considering the need for labeling and printed instructions, as well as consumer information, to minimize the potential misuse of using LATCH to restrain persons weighing more than 65 lb.

C. NHTSA Replaces Displacement Limit

The March 1999 final rule had specified that any point on the tether anchorage must not be displaced more than 125 mm in the standard's strength test. The Alliance petitioned for reconsideration of the 125 mm displacement limit specified in S6.3.2, stating, *inter alia*, that the displacement requirement was not practicable or objective. In the August 1999 response to petitions for reconsideration, NHTSA moved the location of the displacement measurement to point X on the test device and specified that displacement is measured in the horizontal direction. The agency also denied the suggestion to replace the displacement limit with an alternative that the tether anchorage ''withstand'' the required forces because a displacement limit is more objective than the latter in determining whether an anchorage met the performance criteria. 64 FR at 47576.

The Alliance petitioned again following the denial (docket 6160–11), asking that the displacement limits for tests using SFADs 1 and 2 be deleted. Petitioner stated that displacement of Point X on SFAD 1 is not strongly influenced by tether anchorage characteristics, but by the characteristics of the vehicle seat belt. Petitioner also stated that to comply with the 125 mm displacement criterion, vehicle manufacturers may be forced to redesign lap and lap/shoulder belts and their anchors that would require extensive re-testing of the systems. Petitioner explained that redesign is necessary because without it, the belts attached to SFAD 1 will rotate, as the seat cushion is compressed, contributing significantly to the displacement of point X. Further, the petitioner stated that it is likely that lap belt angles would have to be reduced and anchorage locations moved in order to allow the belt to better control the test fixture's displacement (which is primarily due to the belt and not to the tether anchorage). One negative safety consequence of such changes, stated the Alliance, would be increased risk of a belted occupant slipping under the lap portion of the belt during a crash. ''This risk would be highest for smaller occupants, particularly children, who are frequent rear seat occupants.''

NHTSA has decided to grant petitioner's request to replace the 125 mm displacement limit with different performance criteria for the performance of the tether anchorage. (As discussed in the next section, this change has not been made for tests of the lower LATCH anchorages tested without the tether attached.) One of the reasons underlying the rulemaking to require child restraint anchorage systems is to make the means of attaching child restraints independent of the vehicle's belt system. By making the two systems independent, vehicle manufacturers can optimize vehicle seating and belt systems to better protect older children

[10] Toyota has stated that it is not aware of any tether anchorage failures in real-world crashes, and has since upgraded the tether anchorage designs in the Echo and other models with similar designs.

and the adult population, without worrying about the incompatibilities of those designs with child restraint systems. The petitioner has shown that the 125 mm displacement limit would have the effect of intertwining the two systems again, without a compelling need to do so, contrary to the intent of the rulemaking. By causing vehicle manufacturers to reduce lap belt angles, the LATCH system would limit the ability of vehicle manufacturers to optimize seat belt designs that could greatly improve the restraint of older children, teenagers, and adults.

Manufacturers might have to over-design to meet both the 15,000 N strength requirement of the standard and a displacement limit for LATCH-equipped seating positions, which could result in the unnecessary stiffening of vehicle seat and floor structures and other design changes that curtail the ability of belt systems to restrain occupants.

A displacement limit is extremely objective. However, a displacement limit impedes manufacturers' abilities to optimize seating and belt designs to better restrain older children, teenagers and adults. Sufficient objectivity can be achieved in a manner other than by specifying the displacement limit. Instead of the 125 mm displacement limit, the standard will specify that, when subjected to the 15,000 N test load, the tether anchorage shall not separate completely from the vehicle seat or seat anchorage or the structure of the vehicle. The language harmonizes with that of Transport Canada's Regulation 210.2, ''Lower Universal Anchorage Systems for Restraint Systems and Booster Cushions'' (Standard 210.2), which specifies that ''A lower universal anchorage system installed in a row of designated seating positions shall not separate completely from the vehicle seat or seat anchorage or the structure of the vehicle when tested'' by pulling with a force of 15,000 N (''Strength Requirements'').

The establishment of a displacement limit for the static strength test that is both objective and related directly to the safety performance of the system is difficult for many reasons. Standard No. 225 permits tether anchorages to be located in a wide range of vehicle locations relative to the placement of the child restraint itself, *e.g.*, on the rear filler panel, on the floor, on the roof, etc. Because of this design latitude, the forces applied through the tether strap on the SFAD test device to the anchorages themselves vary widely in both magnitude and direction. As such, the measurement of displacement of the tether anchorage—either in a horizontal direction or in a direction in line with the application of force—may or may not be relevant to the performance of the child restraint. On the other hand, if the anchorage does not structurally fail during the very slow (27 ± 3 seconds) application of force (''withstands'' the force) during the static compliance test, the agency is confident that the same anchorage will perform well in dynamic crash conditions. As noted above, the criteria adopted today are comparable to those Transport Canada incorporated into that country's final regulation on universal child restraint anchorage systems.

2. Strength of Lower Anchorages

i. 11,000 N Requirement. The 11,000 N force level was supported by test data obtained from Transport Canada. Canada performed 48.3 km/h (30 mph) dynamic testing of a 6-year-old child dummy in a 17 lb booster that was attached to the vehicle seat assembly by rigid LATCH attachments on the child restraint. Dynamic loads recorded at one lower bar was approximately 5,500 N, resulting in what the agency believed to be a combined dynamic load of about 11,000 N.

The Alliance petitioned for reconsideration of the strength requirement, believing that an 8,000 N load application in the forward direction is sufficient for motor vehicle safety. The reasons underlying the petitioner's view were the same ones discussed above regarding the 15,000 N requirement for testing tether anchorages. NHTSA is denying the petitioner's request, for the same reasons the agency has denied the request to reduce the tether anchorage requirements.

NHTSA has regarded the test of the two lower LATCH anchorages as a misuse test. Specifying that the tether anchorage would not be attached in the test was consistent with the agency's objective of ensuring that the child restraint anchorages system will retain the child restraint system in the event that the tether is misused or not used at all (64 FR 10805). Lower performance requirements could be justified for the misuse situation, since the full performance of the safety system is not being assessed. There are precedents in the agency's safety standards where NHTSA tests in a misuse condition to ensure a minimum level of performance if misuse occurs, and imposes less stringent performance requirements for that test. (See, *e.g.,* S6.1.1(b)(2) of Standard No. 213, Test Configuration II, which is a 20 mph misuse test of certain child restraints. Test Configuration II is used to assess the performance of child restraints in misuse conditions such as: tether unattached, and a fixed or movable surface in front of test dummy unbuckled.)

In assessing the Alliance's petition for reconsideration of the lower anchorage strength requirement, NHTSA recognizes that the crash forces transmitted to the child and CRS through the LATCH anchorage system would be the same regardless of whether the CRS is attached to the vehicle via the LATCH (tethers plus lower anchorages) or only the lower anchorages. We continue to stress the need to install child restraints (convertible and forward-facing CRS) properly by securing them to the vehicle by the full LATCH system, or with a tether and seat belt, in order to obtain the full protective benefit of the restraint system. The agency also plans to revise *Buying A Safer Car For Child Passengers* and other consumer information materials to better educate parents and caregivers about the added level of protection afforded by the tether. As part of the agency's efforts to inform consumers, new LATCH literature has been developed that explains the use of the new system. Additionally, the agency's training curriculum is being updated and revised to ensure that all trained child passenger safety technicians are properly informed that using the tether enhances the safety benefits of child restraints.

The March 1999 final rule, however, allows convertible cars and school buses to meet the CRS anchorage requirements by installing only the lower LATCH anchorages due to the practical difficulties concerning the installation of tether anchorages on these vehicles. In view of several interpretations concerning positioning of tether anchorages in locations that are recessed into the seat back or under the seat itself, the agency wants to reconsider the practicability issue and is interested in information showing the degree of difficulty of installing tether anchorages on those vehicles. The zone in which the tether anchorage may be located as specified in the standard is relatively large, possibly affording vehicle manufacturers wide latitude in designing viable alternatives.

Further, the agency is planning to issue a notice in the future addressing a new generation school bus occupant protection system. The agency is evaluating alternative restraint systems and seating systems to determine the feasibility of requiring these in school buses. The agency will address the feasibility and need to incorporate tether anchorages on school buses as part of that work.

In addition, the agency is also considering whether to require tethers on all child restraints. Standard No. 213 does not require tethers per se. Instead, the standard subjects forward-facing child restraints to a 720 mm (28-inch) head excursion limit, which a restraint may meet tethered. (An 813 mm (32-inch) head excursion limit must be met untethered.) Child restraints that have LATCH attachments able to meet the 720 mm head excursion limit without a tether, and that do not have a tether, will not be able to take advantage of the superior performance of the vehicle's full 3-point LATCH system. For this reason, the agency is interested in information on requiring tethers on all forward-facing child restraints, to the extent practicable.

ii. Displacement Limit. The Alliance petitioned for reconsideration of the 125 mm displacement limit specified in S9.4.1. We responded to its petition on this issue by denying the suggestion to replace the displacement limit with an alternative that the anchorage ''withstand'' the required forces, because a displacement limit is more objective than the latter in determining whether an anchorage met the performance criteria. 64 FR at 47576. The Alliance petitioned again following the denial (docket 6160–11). Petitioner stated that the displacement limit ''effectively curtails the options available to the restraint system designer to manage crash energy and provide protection to the occupant.'' Petitioner stated that lower excursion limits subject occupants to higher accelerations. The Alliance stated (6160–11):

> Allowing the occupant to undergo displacement during impact, as is done with a seat belt load limiter, is a powerful way to limit occupant accelerations and the associated injury potential. If an occupant strikes an object in a vehicle, high accelerations may result. This is a motivation to limit excursion. However, restricting all vehicles to an excursion limit of 125 mm denies restraint system designers flexibility to manage crash energy in a way that takes advantage of available space. Many vehicles used to transport children (minivans, sport utility vehicles, quad-cab style trucks, etc.) have large rear seating areas. Such vehicles have the space necessary to permit larger excursions of a CRS without an increased risk of interior impact. A fixed limit of 125 mm of excursion does not allow the available space to be used to its full potential.

The Alliance suggested an alternative approach to the 125 mm displacement limit for the forward strength test (S9.4.1(a)). Petitioner suggested that displacement should be permitted to vary from 125 to 200 mm, depending on the clearance that is in the vehicle's rear seat (the distance between the rearward surface of the front seat back to the forward surface of the rear seat back). This assumed a maximum applied load of 8,000 N. The petitioner explained that 50 mm more excursion would reduce the dynamic force on the child/CRS system since the energy is absorbed by motion through a greater distance. Petitioner explained that 50 mm more would reduce a 23 g force to 16 g.

NHTSA has granted this petition in part. We are increasing the 125 mm displacement limit of S9.4.1(a) for the forward pull test. Instead of varying displacement depending on available rear seat clearance, the agency has decided to increase the displacement limit to 175 mm. A single value of 175 mm would increase the ease with which a compliance test could be conducted. Increasing the displacement limit to 175 mm would increase manufacturers' ability to limit accelerations while keeping the test as objective as possible. The 175 mm displacement limit is established to provide a limit at the 11,000 N loading level that is consistent with the petitioner's suggested 125 mm displacement limit at the 8,000 N loading level (Docket 6160–11).

The Alliance also suggested an alternative approach to the 125 mm displacement limit for the lateral strength tests (S9.4.1(b)). Petitioner suggested that displacement should be 125 mm for outboard seating positions (see definition, 49 CFR 571.3) and 150 mm for positions other than outboard seating positions. The reasons for the suggestion are the same as those discussed for the forward pull test (S9.4.1(a)).

NHTSA has granted this request and has increased the displacement limit for positions other than outboard seating positions from 125 mm to 150 mm. A single value of 150 mm would increase the ease with which a compliance test could be conducted. An increase of 25 mm would allow manufacturers the ability to use displacement to better manage the crash forces on the child/CRS system without sacrificing safety.

iii. Ten-Second Hold Time. The test procedures for the strength test of the lower LATCH anchorages are set forth in S11of Standard No. 225. S11(a) specifies that the 11,000 N load is applied in the forward direction as linearly as practicable from a 500 N preload to a full force application of 11,000 N in not less than 24 seconds and not more than 30 seconds, and maintained at an 11,000 N level for 10 seconds. S11(b) specifies the same procedure for the lateral force test, except that the full force application is 5,000 N.

The Alliance petitioned for reconsideration of the force application profile for the lower anchorages. Petitioner requested that FMVSS No. 225 be revised to permit the manufacturer latitude in specifying the period of time in which the force is applied, within 30 seconds, as long as the rate does not exceed 135,000 N/s. Transport Canada permits the vehicle manufacturer to select the force application time. Further, the draft ISO test procedure requires the force to be applied in 2 seconds. Thus, the Alliance contended that lower anchorages would have to be tested to different conditions since no single test can be performed to satisfy all regulatory requirements. The Alliance wanted Standard No. 225's test procedure to allow manufacturers to select the force application time.

In the August 1999 final rule, we denied the petitioner's request that manufacturers be permitted to specify the force application rate based on our belief that the force should be applied at a constant rate for as long a time period as possible. This is to assure that the test adequately measures the strength of the anchorage. Metal structures generally can withstand greater forces under a faster rate of application than under a slower one. This means that an anchorage that fails when the required force is reached after 30 seconds might not fail if the required force is reached in a very short period of time. Adopting the petitioner's request could have allowed the use of weaker anchorages, resulting in a possible reduction of safety.

We also explained that the application rate is justified also because Standard No. 225 uses a laboratory test instead of a crash test to measure the strength of child restraint anchorages. Safety requirements can evaluate the performance of vehicle safety equipment by providing for test conditions that are structured to ensure the safety equipment will perform adequately in actual crash conditions without simulating those conditions. Test conditions that do not simulate actual crash conditions are developed generally when it would be infeasible or too costly to design and/or implement any single test procedure or series of test procedures that reasonably simulates the conditions to which the safety equipment will be exposed, including possible crash conditions and possible degradation over time because of exposure to environmental factors. The test conditions specified for this type of safety requirement are intended to subject the vehicle safety equipment to force or exposure levels that are sufficiently high that one can reasonably

conclude that the equipment is unlikely to fail as a result of exposure to even severe crash conditions or environmental exposures. Such test conditions are necessarily more severe than typical crash conditions, to ensure a margin of safety in the standard. That is, even if the test conditions were not directly representative of actual crash conditions, the test conditions are so demanding that one can confidently predict that equipment that withstands the test conditions will withstand most crash conditions, even severe crash conditions.

The specification to apply the test load over 27 ± 3 seconds is not intended to be representative of an actual crash condition. Instead, it represents a test condition intended to be sufficiently demanding to ensure that the anchorage will not fail even under the most severe crash conditions. Thus, NHTSA denies the petitioner's request to revise the 27 ± 3 second load application.

On the other hand, the 10 second hold time for the full load application in Standard No. 225 is reduced to 1 second. A 1-second hold time is currently specified for the tether anchorage test of Standard No. 225 (S8.1(c)(3)). The agency has determined that this change is not likely to result in a reduction of safety. A 1-second hold time is still much longer than an actual crash event, which lasts typically 250 milliseconds, and will allow for scrutiny of the performance of the anchorages. In addition, the agency believes that much of the changes in the anchorages' material structure will occur during the 27 ± 3 seconds load application. The agency notes that this amendment harmonizes the hold time with a Transport Canada requirement that has been in place for many years regarding tether anchorages. Accordingly, S11(a) and (b) are revised to specify that the loads are held for 1 second.

3. Phasing-In Strength Requirements

The period during which vehicle manufacturers may meet the Canadian and draft ISO requirements for tether and lower LATCH anchorages, respectively, is currently scheduled to end on August 31, 2004. That means that, absent further amendment, vehicles manufactured on or after September 1, 2004 will have to meet the 15,000 and 11,000 N strength requirements for those anchorages. This final rule provides more time to manufacturers to meet the requirements for a few model lines.

The agency is providing additional time because this final rule makes several important amendments to requirements of the standard relating to how the 15,000 and 11,000 N loads are applied and how the agency determines compliance with the requirements. Examples of these are the change from the 125 mm displacement criterion for the tether anchorage to one that determines whether the anchorage withstood the force by assessing the deformation of the structure; and the change in the load application rate for the 11,000 N load for the lower anchorages from 10 seconds to 1 second. The agency has determined that these changes may necessitate the reassessment by manufacturers of some vehicle models as to whether the vehicles comply with the amended standard. Further, some manufacturers may need more time than the period from now until August 31, 2004 to make whatever changes are needed to the structure of the vehicles to meet the new requirements.

This final rule gives vehicle manufacturers an additional year, for a few model lines, to assess whether their vehicles meet this rule's amended strength requirements and to make necessary changes to meet the requirements. Ninety (90) percent of the vehicles they manufacture on or after September 1, 2004 and before September 1, 2005 must be certified as meeting the amended strength requirements. One hundred (100) percent of the vehicles manufactured on or after September 1, 2005 must be certified as meeting the requirements. For final-stage manufacturers, alterers and small volume manufacturers, this rule permits these manufacturers to meet the Canadian or draft ISO requirements for all their vehicles until September 1, 2005. These phase-in requirements are set forth in a new S16 that is added to the standard. Reporting requirements implementing the phase-in are also set forth in Part 596.

4. Superwebbing

The March 1999 final rule specified that the SFAD have a tether strap that attaches to the vehicle's tether anchorage. The rule specified that the tether strap consists of webbing that must meet the breaking strength and elongation limits for lap belt assemblies, specified in Standard No. 209, ''Seat Belt Assemblies'' (49 CFR 571.209). The Alliance petitioned for reconsideration of this decision, stating that there is too much variation in elongation of the webbing to test the tether anchorage. NHTSA responded to the petition in the August 1999 final rule, by stating that it will use a steel cable to attach the SFAD to the tether anchorage. The agency believed that test complications due to elongation of a strap would be minimized if a steel cable were used.

Ford and the Alliance petitioned for reconsideration of the use of steel cable. Petitioners stated that using cable results in a less realistic test, and the displacement measured in such a test would not be representative of real world tether anchor/strap performance. The Alliance suggested specifying a narrow range of elongation, such as between 2 and 4 percent (Docket 6160–21) at a tensile load of 14,490 lb. The Alliance also petitioned NHTSA to include a specification to pretension all belt systems, including the tether strap, prior to testing.

Today's final rule changes the specification for use of steel cable and specifies use of webbing material with an elongation limit of 4 percent at a tensile load of 65 kN (14,612 lb). This rule includes the requirement to pretension the tether strap prior to the test.

5. Technical Amendments

i. SFAD 2. In a petition for reconsideration, Mitsubishi noted that Figure 17 of FMVSS No. 225, which depicts the dimensions of the SFAD 2 test device, only specifies a tether attachment point somewhere near the top of the device. Mitsubishi believed that leaving the specific location of the attachment point and the shape and radius of the hole to the discretion of each vehicle manufacturer and test laboratory will lead to wide variation in the loading conditions in tether anchorage testing. Mitsubishi requested NHTSA to identify specific requirements for the location and dimensions of the SFAD 2 tether attachment point.

We have revised Figure 17 to make it clear that the tether attachment point on SFAD 2 is the same as on the SFAD 1 test device depicted in Figures 12 to 15 of FMVSS No. 225, both in location and dimension.

ii. Tether Anchorage Zone. In S6.2.1 of Standard No. 225 states: ''* * * the part of each tether anchorage that attaches to a tether hook must be located within the shaded zone shown in Figures 3 to 7 of this standard * * *.'' Figure 3 shows the front edge of the zone as extending along the torso line reference plane under the seat and then following the contour of the vehicle seat bottom and seat back up to a point on the seat back. In a letter to the agency, American Suzuki Motor Company noted that Figures 3 to 7 of Standard No. 225 did not provide dimensions as to the location of the front edge of the shaded zone, except with regard to the ''strap wrap-around area'' at the top of a

vehicle seat back. Suzuki asked whether the standard permitted an anchorage to be located in the recessed area of the seat back.

In a November 8, 2002 interpretation letter, the agency stated NHTSA did not intend to exclude part of the seat back from the shaded zone. Thus, a tether anchorage that is recessed in the seat back is permitted. However, the agency stated, the shaded zone does not include the strap wrap-around area at the top of the vehicle seat back, so the anchorage must not be located in that wrap-around area. In reply to another question from Suzuki, NHTSA also stated that for the area under the vehicle seat, the forwardmost edge of the shaded zone is defined by the torso line reference plane. Today's final rule makes a technical amendment to S6.2.1 to clarify the standard with respect to these provisions.

g. Denial of Petition on Backless Booster Systems

The March 1999 final rule generally required all child restraint systems to be equipped with components that attach to a vehicle's LATCH system (this section refers to these components as ''LATCH components'') (S5.3.1 of Standard No. 213). The rule excluded belt-positioning seats from the requirement. Standard No. 213 defines ''belt-positioning seat'' as:

> a child restraint system that positions a child on a vehicle seat to improve the fit of a vehicle Type II belt system on the child and that lacks any component, such as a belt system or a structural element, designed to restrain forward movement of the child's torso in a forward impact.

Belt-positioning seats were excluded from the requirement because these seats do not have compatibility problems attaching to the vehicle seat using seat belts. They simply form a seating platform for the child. No part of the child seat restrains forward movement of the child. The vehicle's seat belts are used to restrain the child, just as they are used on other occupants, and are not used to attach the child restraint to the vehicle seat.

Belt-positioning seats and ''backless child restraint system'' are both ''booster seats'' under Standard No. 213. ''Backless child restraint system'' means:

> a child restraint, other than a belt-positioning seat, that consists of a seating platform that does not extend up to provide a cushion for the child's back or head and has a structural element designed to restrain forward motion of the child's torso in a forward impact.

Cosco, Inc., petitioned the agency to reconsider not excluding backless child restraints from the requirement that the restraints must be equipped with LATCH components. Cosco manufactures a backless child restraint that uses a shield-like structural element to restrain a child occupant's torso in a frontal collision. (These restraint systems are commonly called ''shield boosters.'')[11] Petitioner believed that shield boosters are similar to belt-positioning boosters because they ''rely upon the type 1 or type 2 seat belt assembly to restrain the occupant. This requires that the person seating the child in the restraint system buckle and unbuckle the vehicle seat belt assembly each time the product is used.'' Accordingly, Cosco believed that requiring that backless booster seats incorporate LATCH components ''is inconsistent with its [the rule's] exclusion of backless belt-positioning booster seats * * *.''

The agency is denying Cosco's petition. NHTSA disagrees with Cosco that backless booster seats are sufficiently similar to belt-positioning seats that they should be excluded from having LATCH components. One of the purposes of Standard No. 225 and the complementary provisions in Standard No. 213 was to free seat belts from having to fulfill two functions. The primary purpose of seat belts has always been to protect older children, teenagers and adults from serious injury in vehicle crashes. A secondary purpose of seat belts has been to install child restraints in vehicles. Attempting to design seat belts to achieve the first purpose has sometimes led to design choices that may have made it more difficult for the belts to achieve the second purpose (tightly securing a child restraint). The LATCH system will help vehicle and seat belt manufacturers to more effectively optimize seat belts to restrain older children, teenagers and adults.

Belt-positioning seats were excluded from the LATCH program because they do not tax seat belts to perform a dual function. The seats improve the ability of seat belts to perform their primary purpose, which is to protect the child occupant from serious injury. Belt-positioning seats do not call upon the seat belt to attach the child restraint to the vehicle in any manner. In contrast, shield boosters rely on seat belts to assist in restraining the child *and* to attach the child restraint to the vehicle seat. This dependency on seat belts to perform the latter function potentially restricts the ability of seat belts to perform their primary function. Further, as vehicle manufacturers begin to optimize seat belts for the protection of older children, teens and adults, some belt designs may be hard for motorists to use to attach a backless booster seat to a vehicle seat. The dependency of backless booster seats on vehicle seat belts to attach the child restraints is what the LATCH rulemaking sought to prevent. Accordingly, petitioner's request is not consistent with the goals of the rulemaking and is hereby denied.

[11] Used with the shield, the restraint is recommended for children weighing between 30 and 40 lb. Cosco's backless child restraint, the ''Grand Explorer,'' is also designed so that the shield can be removed, to convert the restraint to a belt-positioning seat. As a belt-positioning seat, the restraint is used with a vehicle's lap/shoulder (Type 2) belt system. Cosco's petition pertains to the configuration that the restraint is in with the shield in place (*i.e.,* as a ''backless child restraint system'').

III. Rulemaking Analyses And Notices

a. Executive Order 12866 (Regulatory Planning and Review) and DOT Regulatory Policies and Procedures

This rulemaking document was not reviewed under E.O. 12866, ''Regulatory Planning and Review.'' We have considered the impacts of this rulemaking action and have determined that this action is not ''significant'' within the meaning of the Department of Transportation's regulatory policies and procedures. We have further determined that the effects of this rulemaking do not warrant preparation of a full final regulatory evaluation. This document resolves the remaining issues from the petitions for reconsideration of the final rules published in March and August 1999 and in July 2000. Manufacturers will be minimally affected by this rulemaking because generally it does not change the manufacturers' responsibilities to install tether anchorages and LATCH systems previously established by the March 1999, August 1999, and July 2000 final rules. This rule provides slightly more flexibility in how vehicle seat backs must be marked to identify the presence and location of the lower LATCH anchorages that are hidden from view. It also provides for greater leeway to recess the lower anchorages further rearward in the seat bight. This rule clarifies some requirements and test procedures, but overall does not impose new test burdens.

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. This rule affects motor vehicle manufacturers, almost all of which are not small

businesses. Even if there are motor vehicle manufacturers that qualify as small entities, this rule will not have a significant economic impact on them because it generally does not change the manufacturers' responsibilities to install tether anchorages and LATCH systems on the compliance dates of the March 1999 and July 2000 final rules. Accordingly, the agency has not prepared a regulatory flexibility analysis.

c. Executive Order 13132 (Federalism)

This rulemaking action has been analyzed in accordance with the principles and criteria contained in Executive Order 13132. This rule will not have a substantial direct effect on States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Accordingly, NHTSA has determined that this final rule does not contain provisions that have federalism implications or that preempt State law.

d. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) requires agencies to prepare a written assessment of the costs, benefits and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local or tribal governments, in the aggregate, or by the private sector, of more than $100 million annually. This rule does not impose any unfunded mandates as defined by that Act.

e. National Technology Transfer and Advancement Act

Under the National Technology Transfer and Advancement Act of 1995 (NTTAA) (Pub. L. 104–113),

> all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments.

In developing Standard No. 225, we searched for standards developed or adopted by voluntary consensus standards bodies and found that the only standard for a child restraint anchorage system was a draft standard developed by the International Organization for Standardization (ISO). ISO is a worldwide voluntary federation of ISO member bodies. In responding to petitioners for reconsideration, we considered the draft ISO standard to guide our decision-making to the extent consistent with the Safety Act. The notable differences between the draft ISO standard and Standard No. 225 are discussed in the March 1999 final rule (64 FR 10801–10802) and the August 1999 final rule (footnote 10, 64 FR 47570). Regarding today's final rule, the most significant of these are the magnitude of the force that is applied to the lower anchorages (8,000 N instead of 11,000 N); the rate that the force is applied to the lower anchorages in a compliance test (the draft ISO standard specifies that the force is fully applied within a time period of two seconds or less, while under our test procedure NHTSA specifies the rate and the time period for full application of the force may be up to 30 seconds); and the period of time that the force is held (the draft ISO standard specifies that the 8,000 N force is held for a period of 0.25 seconds, while we specify that the 11,000 N force is held for 1 second). NHTSA has determined that the 11,000 N force and the manner and period of time it is applied, are needed to represent a test condition that is sufficiently demanding to ensure that the anchorages will not fail even under the most severe crash conditions. We also considered the regulations developed by Transport Canada in making decisions about the standard's strength requirements.

f. 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.

g. 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.

h. Paperwork Reduction Act

NHTSA has determined that phasing-in the strength requirements of this rule will impose new collection of information burdens within the meaning of the Paperwork Reduction Act of 1995 (PRA). Under the PRA, the agency must publish a document in the **Federal Register** providing a 60-day comment period and otherwise consult with members of the public and affected agencies concerning each collection of information. The Office of Management and Budget (OMB) has promulgated regulations describing what must be included in such a document. Under OMB's regulations (5 CFR 320.8(d)), agencies must ask for public comment on the following:

(1) whether the collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(2) the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

(3) how to enhance the quality, utility, and clarity of the information to be collected; and,

(4) how to minimize the burden of the collection of information on those who are to respond, including the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, *e.g.*, permitting electronic submission of responses.

In compliance with these requirements, NHTSA is publishing a document in today's **Federal Register** seeking public comment on the collection of information relating to the one-year phase-in of the strength requirement (Docket No. 02–14038).

i. Viewing Docket Submissions

You may read the comments received by Docket Management at Room PL–401, 400 Seventh Street, SW., Washington, DC 20590 (telephone 202–366–9324). You may visit the Docket from 10 a.m. to 5 p.m., Monday through Friday.

You may also see the comments on the Internet. To read the comments on the Internet, take the following steps:

(1) Go to the Docket Management System (DMS) Web page of the Department of Transportation (*http://dms.dot.gov/*).

(2) On that page, click on ''search.''

(3) On the next page (*http://dms.dot.gov/search/*), type in the four-digit docket number shown at the beginning of this document. Example: If

the docket number were ''NHTSA–2002–1234,'' you would type ''1234.'' After typing the docket number, click on ''search.''

(4) On the next page, which contains docket summary information for the docket you selected, click on the desired comments. You may download the comments. However, since the comments are imaged documents, instead of word processing documents, the downloaded comments are not word searchable.

Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477–78) or you may visit *http://dms.dot.gov.*

List of Subjects

49 CFR Part 571

Imports, Incorporation by reference, Motor vehicle safety, Reporting and recordkeeping requirements, Tires.

49 CFR Part 596

Infants and children, Motor vehicle safety, Reporting and recordkeeping requirements.

■ In consideration of the foregoing, NHTSA amends 49 CFR Chapter V 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 571.225 is amended by:
■ a. Adding S4.6;
■ b. Revising the introductory paragraph of S6.2.1;
■ c. Adding S6.2.1.2(c);
■ d. Revising the introductory paragraph of S6.3, S6.3.1, the introductory paragraph of S8, S8.1(b), S9, S9.1.1(b), S9.1.1(c);
■ e. Removing and reserving S9.1.1(d) and (e);
■ f. Revising S9.1.1(f);
■ g. Revising S9.2.1, S9.2.2 and S9.2.3;
■ h. Revising S9.4.1, S9.5(a)(2) and (a)(3);
■ i. Adding S9.5(a)(4);
■ j. Revising S9.5(b), S11(a) and (b);
■ k. Adding S16;
■ l. Revising Figure 17 and adding Figures 21 and 22.

■ The revised and added paragraphs and figures read as follows:

§ 571.225 Standard No. 225; Child restraint anchorage systems.

* * * * *

S4.6 *Adjustable seats.* (a) A vehicle that is equipped with a forward-facing rear designated seating position that can be relocated such that it is capable of being used at either an outboard or non-outboard forward-facing seating position shall be considered as having a forward-facing non-outboard seating position. Such an adjustable seat must be equipped with a tether anchorage (with or without the lower anchorages of a child restraint anchorage system) if the vehicle does not have another forward-facing non-outboard seating position that is so equipped.

(b) Tether and lower anchorages shall be available for use at all times, except when the seating position for which it is installed is not available for use because the vehicle seat has been removed or converted to an alternate use such as the carrying of cargo.

* * * * *

S6.2.1 Subject to S6.2.1.1 and S6.2.1.2, the part of each tether anchorage that attaches to a tether hook must be located within the shaded zone shown in Figures 3 to 7 of this standard of the designated seating position for which it is installed. The zone is defined with reference to the seating reference point (see § 571.3). (For purposes of the figures, ''H Point'' is defined to mean seating reference point.) A tether anchorage may be recessed in the seat back, provided that it is not in the strap wrap-around area at the top of the vehicle seat back. For the area under the vehicle seat, the forwardmost edge of the shaded zone is defined by the torso line reference plane.

* * * * *

S6.2.1.2(c) The measurement of the location of the flexible or deployable routing device described in S6.2.1.2(b)(1) is made with SFAD 2 properly attached to the lower anchorages. A 40 mm wide nylon tether strap is routed through the routing device and attached to the tether anchorage in accordance with the written instructions required by S12 of this standard. The forwardmost contact point between the strap and the routing device must be within the stated limit when the tether strap is flat against the top surface of the SFAD and tensioned to 55 to 65 N. In seating positions without lower anchorages of a child restraint anchorage system, the SFAD 2 is held with its central lateral plane in the central vertical longitudinal plane of the seating position. The adjustable anchor attaching bars of the SFAD 2 are replaced by spacers that end flush with the back surface of the SFAD.

* * * * *

S6.3 *Strength requirements for tether anchorages.* Subject to S6.3.2, a vehicle manufactured on or after September 1, 1999, and before September 1, 2004 may, at the manufacturer's option (with said option irrevocably selected prior to, or at the time of, certification of the vehicle), meet the requirements of S6.3.1 or S6.3.4. Vehicles manufactured on or after September 1, 2004 and before September 1, 2005 must meet the requirements of S6.3.1 of this standard, except as provided in S16 of this standard. Vehicles manufactured on or after September 1, 2005 must meet the requirements of S6.3.1.

S6.3.1 Subject to S6.3.2, when tested in accordance with S8, after preloading the device with a force of 500 N, the tether anchorage must not separate completely from the vehicle seat or seat anchorage or the structure of the vehicle.

* * * * *

S8 *Test procedures.* Each vehicle shall meet the requirements of S6.3.1 and S6.3.3 when tested according to the following procedures. Where a range of values is specified, the vehicle shall be able to meet the requirements at all points within the range. For the testing specified in these procedures, the SFAD used in the test has a tether strap consisting of webbing material with an elongation limit of 4 percent at a tensile load of 65,000 N (14,612 lb). Pretension the tether strap with 53.5 N to 67 N of preload prior to the test. The strap is fitted at one end with a high strength steel tether hook for attachment to the tether anchorage. The tether hook meets the specifications in Standard No. 213 (49 CFR § 571.213) as to the configuration and geometry of tether hooks required by the standard. A steel cable is connected to the X point through which the test force is applied.

* * * * *

(b) Attach the SFAD 1 to the vehicle seat using the vehicle belts or the SFAD 2 to the lower anchorages of the child restraint anchorage system, as appropriate, and attach the test device to the tether anchorage, in accordance with the manufacturer's instructions provided pursuant to S12 of this standard. For the testing specified in this procedure, if SFAD 1 cannot be attached using the vehicle belts because of the location of the vehicle belt buckle, the test device is attached by material whose breaking strength is

equal to or greater than the breaking strength of the webbing for the seat belt assembly installed as original equipment at that seating position. The geometry of the attachment duplicates the geometry, at the pre-load point, of the attachment of the originally installed seat belt assembly. All belt systems (including the tether) used to attach the test device are tightened to a tension of not less than 53.5 N and not more than 67 N on the webbing portion of the belt. For SFAD 1, apply a rearward force of 135 N ± 15 N, in a horizontal plane through point ''X'' of SFAD 1. While maintaining the force, tighten the vehicle seat belt to a tension of not less than 53.5 N and not more than 67 N measured at the lap portion of the seat belt and maintain the tension during the preload, lock the seat belt retractor, and tighten the tether belt strap to remove all slack. A rearward force of 135 N ± 15 N is applied to the center of the lower front crossmember of SFAD 2 to press the device against the seat back as the fore-aft position of the rearward extensions of the SFAD is adjusted to remove any slack or tension.

* * * * *

S9 *Requirements for the lower anchorages of the child restraint anchorage system.*

As an alternative to complying with the requirements of S9, a vehicle manufactured on or after September 1, 1999 and before September 1, 2004 may, at the manufacturer's option (with said option irrevocably selected prior to, or at the time of, certification of the vehicle), meet the requirements in S15 of this standard. Vehicles manufactured on or after September 1, 2004 and before September 1, 2005 must meet all of the requirements of S9 of this standard, except as provided in S16 of this standard with regard to S9.4. Vehicles manufactured on or after September 1, 2005 must meet all the requirements of S9 of this standard.

S9.1 *Configuration of the lower anchorages.*

S9.1.1 * * *

(b) Are straight, horizontal and transverse;

(c) Are not less than 25 mm, but not more than 50 mm in length (as shown in Figure 21);

(d)–(e) [Reserved]

(f) Are part of the vehicle, such that they can only be removed by use of a tool, such as a screwdriver or wrench; and

* * * * *

S9.2.1 The anchorage bars are located at the vehicle seating position by using the CRF rearward extensions, with the CRF placed against or near the vehicle seat back. With the CRF attached to the anchorages and resting on the seat cushion, the bottom surface shall have attitude angles within the limits in the following table, angles measured relative to the vehicle horizontal, longitudinal and transverse reference planes.

TABLE TO S9.2.1

Pitch	15° ± 10°
Roll	0° ± 5°
Yaw	0° ± 10°

Note: An explanation of the above angles is given in Figure 1.

S9.2.2 With adjustable seats adjusted as described in S9.2.3, each lower anchorage bar shall be located so that a vertical transverse plane tangent to the front surface of the bar is:

(a) Not more than 70 mm behind the corresponding point Z of the CRF, measured parallel to the bottom surface of the CRF and in a vertical longitudinal plane, while the CRF is pressed against the seat back by the rearward application of a horizontal force of 100 N at point A on the CRF; and

(b) Not less than 120 mm behind the vehicle seating reference point, measured horizontally and in a vertical longitudinal plane.

S9.2.3 Adjustable seats are adjusted as follows:

(a) Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer; and

(b) Place adjustable seats in the full rearward and full downward position.

* * * * *

S9.4.1 When tested in accordance with S11, the lower anchorages shall not allow point X on SFAD 2 to be displaced horizontally more than the distances specified below, after preloading the device—

(a) 175 mm, when a force of 11,000 N is applied in a forward direction in a vertical longitudinal plane; and

(b) 150 mm, for lower anchorages that are in an outboard designated seating position, or 150 mm, for lower anchorages that are in a seating position other than an outboard designated seating position, when a force of 5,000 N is applied in a lateral direction in a vertical longitudinal plane that is 75 ± 5 degrees to either side of a vertical longitudinal plane.

* * * * *

(2) That is either solid or open, with or without words, symbols or pictograms, provided that if words, symbols or pictograms are used, their meaning is explained to the consumer in writing, such as in the vehicle's owners manual; and

(3) That is located such that its center is on each seat back between 50 and 75 mm above or on the seat cushion 100 ± 25 mm forward of the intersection of the vertical transverse and horizontal longitudinal planes intersecting at the horizontal centerline of each lower anchorage, as illustrated in Figure 22. The center of the circle must be in the vertical longitudinal plane that passes through the center of the bar (± 12 mm).

(4) The circle may be on a tag, provided that the tag is sewn on at least half of its border.

(b) The vehicle shall be configured such that the following is visible: Each of the bars installed pursuant to S4, or a permanently attached guide device for each bar. The bar or guide device must be visible without the compression of the seat cushion or seat back, when the bar or device is viewed, in a vertical longitudinal plane passing through the center of the bar or guide device, along a line making an upward 30 degree angle with a horizontal plane. Seat backs are in the nominal design riding position. The bars may be covered by a removable cap or cover, provided that the cap or cover is permanently marked with words, symbols or pictograms whose meaning is explained to the consumer in written form as part of the owner's manual.

* * * * *

(a) *Forward force direction.* Place SFAD 2 in the vehicle seating position and attach it to the two lower anchorages of the child restraint anchorage system. Do not attach the tether anchorage. A rearward force of 135 ± 15 N is applied to the center of the lower front crossbar of SFAD 2 to press the device against the seat back as the fore-aft position of the rearward extensions of the SFAD is adjusted to remove any slack or tension. Apply a preload force of 500 N at point X of the test device. Increase the pull force as linearly as practicable to a full force application of 11,000 N in not less than 24 seconds and not more than 30 seconds, and maintain at an 11,000 N level for 1 second.

(b) *Lateral force direction.* Place SFAD 2 in the vehicle seating position and attach it to the two lower anchorages of the child restraint anchorage system. Do not attach the tether anchorage. A rearward force of 135 ± 15 N is applied to the center of the lower front crossbar of SFAD 2 to press the device against the seat back as the fore-aft position of the rearward extensions of the SFAD is adjusted to remove any slack or tension. Apply a preload force of 500 N at point X of the test device. Increase the pull force as linearly as practicable to a full

force application of 5,000 N in not less than 24 seconds and not more than 30 seconds, and maintain at a 5,000 N level for 1 second.

* * * * *

S16. *Phase-in of strength requirements for vehicles manufactured on or after September 1, 2004 and before September 1, 2005.* At anytime during the production year ending August 31, 2004, each manufacturer shall, upon request from the Office of Vehicle Safety Compliance, provide information identifying the vehicles (by make, model and vehicle identification number) that have been certified as complying with S6.3.1 or S6.3.4, and with S9.4 or S15.2 and S15.3. The manufacturer's designation of a vehicle as meeting the particular requirement is irrevocable.

S16.1 *Tether anchorage phase-in of strength requirements.* For vehicles manufactured on or after September 1, 2004 and before September 1, 2005, the number of vehicles complying with S6.3.1 shall be not less than 90 percent of:

(a) the manufacturer's average annual production of vehicle manufactured on or after September 1, 2001 and before September 1, 2004; or

(b) the manufacturer's production on or after September 1, 2003 and before September 1, 2004.

S16.2 *Lower anchorages phase-in of strength requirements.*

For vehicles manufactured on or after September 1, 2004 and before September 1, 2005, the number of vehicles complying with S9.4 shall be not less than 90 percent of:

(a) The manufacturer's average annual production of vehicle manufactured on or after September 1, 2001 and before September 1, 2004; or

(b) The manufacturer's production on or after September 1, 2003 and before September 1, 2004.

S16.3 *Vehicles produced by more than one manufacturer.*

S16.3.1 For the purpose of calculating average annual production of vehicles for each manufacturer and the number of vehicles manufactured by each manufacturer under S16.1 and S16.2, a vehicle produced by more than one manufacturer shall be attributed to a single manufacturer as follows, subject to S16.3.2.

(a) A vehicle which is imported shall be attributed to the importer.

(b) A vehicle manufactured in the United States by more than one manufacturer, one of which also markets the vehicle, shall be attributed to the manufacturer that markets the vehicle.

S16.3.2 A vehicle produced by more than one manufacturer shall be attributed to any one of the vehicle's manufacturers specified by an express written contract, reported to the National Highway Traffic Safety Administration under 49 CFR Part 596, between the manufacturer so specified and the manufacturer to which the vehicle would otherwise be attributed under S16.3.1.

S16.4 *Alternative phase-in schedules.*

(a) *Final-stage manufacturers and alterers.* A final-stage manufacturer or alterer may, at its option, comply with the requirements set forth in S16.4(a)(1) and (2), instead of the requirements set forth in S16.1 through S16.2.

(1) Vehicles manufactured on or after September 1, 2004 and before September 1, 2005 may meet the requirements of S6.3.4 instead of S6.3.1, and may meet the requirements of S15.2 and S15.3 instead of S9.4.

(2) Vehicles manufactured on or after September 1, 2005 must meet the requirements of S6.3.4 and S9.4.

(b) *Small volume manufacturers.* Vehicles manufactured on or after September 1, 2004 and before September 1, 2005 that are manufactured by a manufacturer that produces fewer than 5,000 vehicles worldwide annually may meet the requirements of S6.3.4 instead of S6.3.1, and may meet the requirements of S15.2 and S15.3 instead of S9.4. Vehicles manufactured on or after September 1, 2005 must meet the requirements of S6.3.4 and S9.4.

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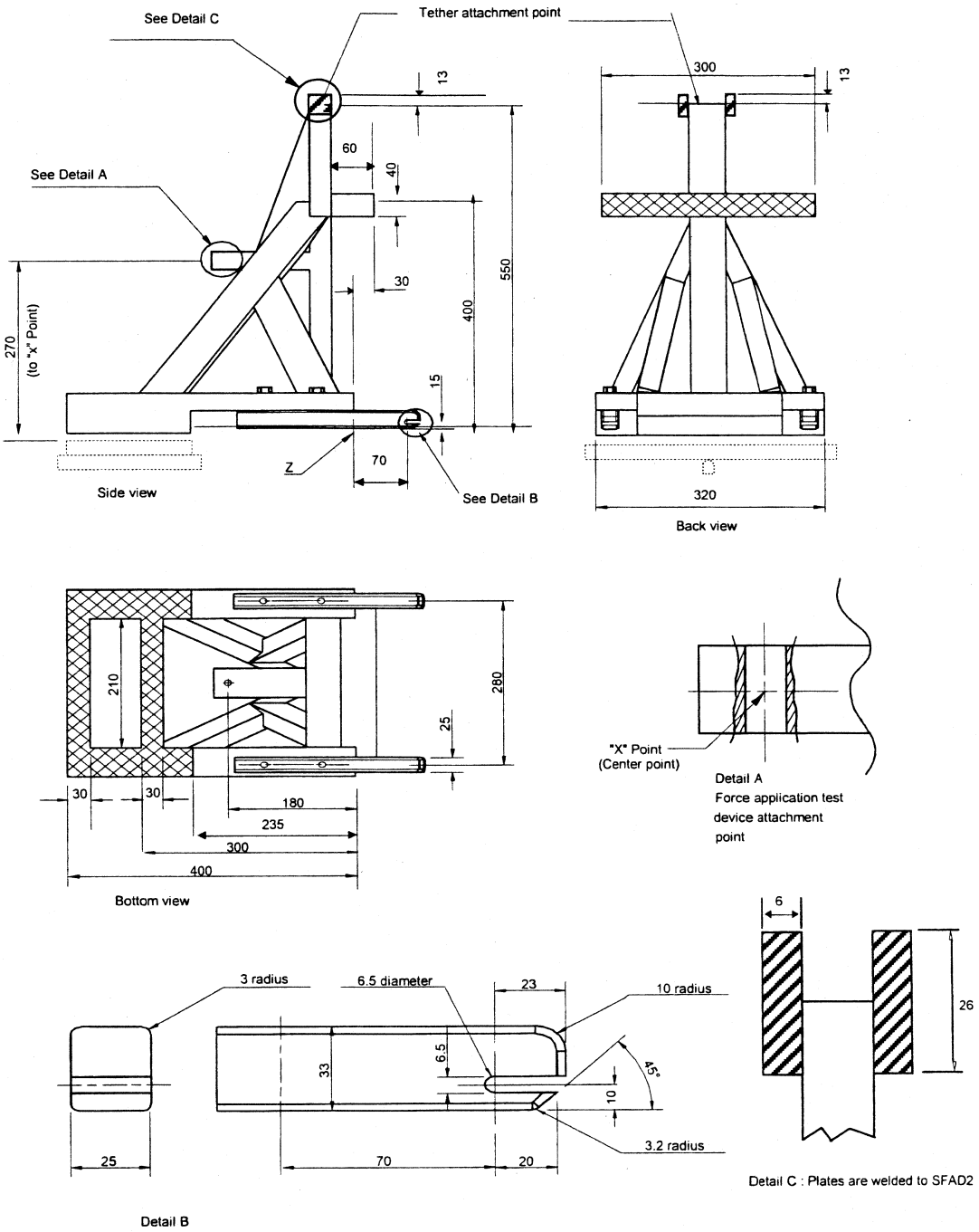


Notes:

1. Drawing not to scale
2. Dimensions in mm, except where otherwise indicated
3. Device stiffness satisfied when using a securely welded construction consisting of rectangular 3 mm steel tubing and 6 mm thick load application plate
4. If construction not as per note 3, stiffness of device is satisfied if movement of point "X" is not more than 2 mm in any direction when forces are applied as specified in S15.2.1, with device attached to rigid anchorage bars and the front cross member supported by a rigid bar that is held at the center by a longitudinal pivot 25 mm below the SFAD2 base (as shown in broken lines) to allow bending and twisting of the base of the device. Any deformation of the anchorage bars to be excluded from the measurements of the movement of point "X".

Figure 17- Side, Back and Bottom Views, ISO 13216-1 Static Force Application Device 2 (SFAD 2)

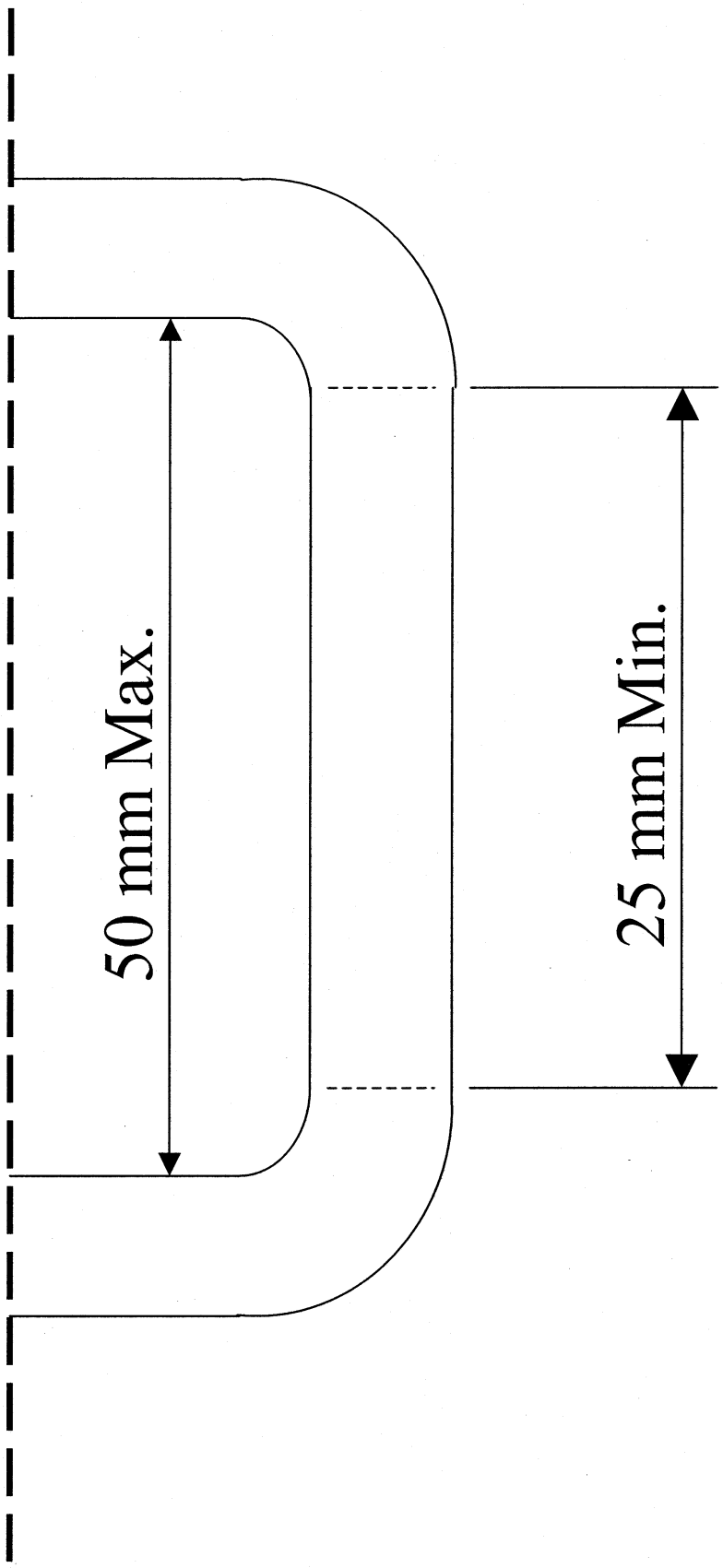
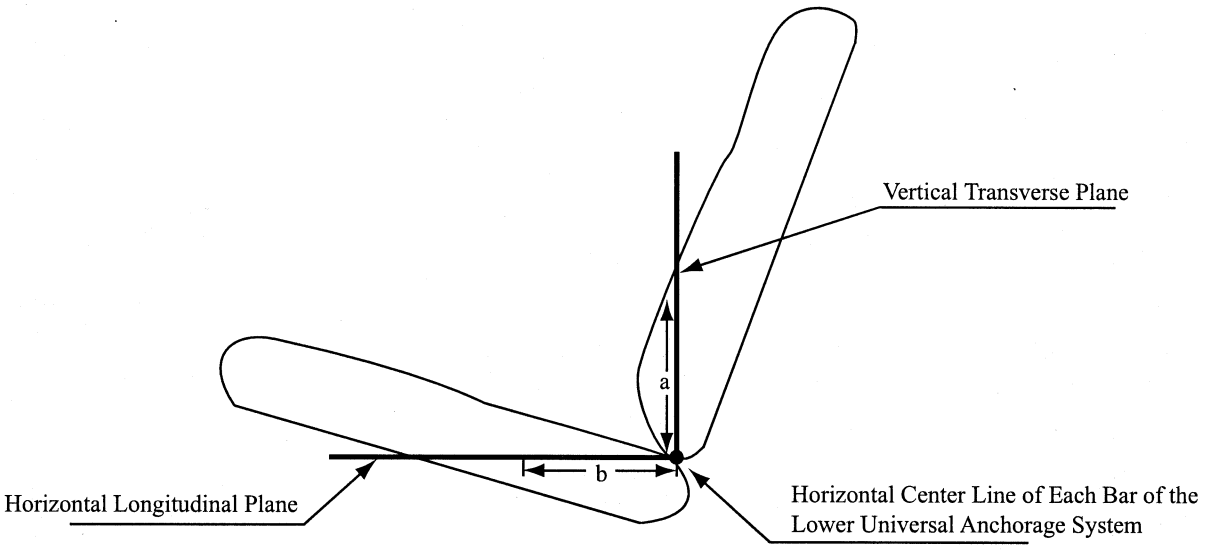


Figure 21—Length of Lower Anchorages



Notes:

1. Drawing not to scale.
2. 50 mm ≤ a ≤ 75 mm.
3. b = 100 mm ± 25 mm.

Figure 22. Placement of Symbol on the Seat Back and Seat Cushion of a vehicle

PART 596—CHILD RESTRAINT ANCHORAGE SYSTEMS PHASE-IN REPORTING REQUIREMENTS

■ 3. The authority citation for Part 596 continues to read as follows:

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

■ 4. Part 596 is amended by revising §§ 596.5 introductory test, 596.6(b)(2), and 596.7, to read as follows:

§ 596.5 Response to inquiries.

At anytime during the production years ending August 31, 2000, August 31, 2001, August 31, 2002, and August 31, 2005, each manufacturer shall submit a report to the National Highway Traffic Safety Administration concerning its compliance with the child restraint anchorage system requirements of Standard No. 225 (49 CFR 571.225) for its passenger cars, trucks, buses, and multipurpose passenger vehicles produced in that year. Each report shall—

* * * * *

§ 596.6 Reporting requirements.

* * * * *

(b) * * *

(2) *Production.* (i) Each manufacturer shall report for the production year for which the report is filed, except for the production year ending August 31, 2005: the number of passenger cars and trucks and multipurpose passenger vehicles with a gross vehicle weight rating (GVWR) of 3,855 kilograms (kg) (8,500 pounds) or less, and buses with a GVWR of 4,536 kg (10,000 pounds) or less, that meet Standard No. 225 (49 CFR 571.225).

(ii) Each manufacturer shall report for the production year ending August 31, 2005: the number of passenger cars and trucks and multipurpose passenger vehicles with a gross vehicle weight rating (GVWR) of 3,855 kilograms (kg) (8,500 pounds) or less, and buses with a GVWR of 4,536 kg (10,000 pounds) or less, that meet S6.3.1 and S9.4 of Standard No. 225 (49 CFR 571.225).

* * * * *

§ 596.7 Records.

Each manufacturer shall maintain records of the Vehicle Identification Number for each vehicle for which information is reported under § 596.6(b)(2)(i) until December 31, 2004. Each manufacturer shall maintain records of the Vehicle Identification Number for each vehicle for which information is reported under § 596.6(b)(2)(ii) until December 31, 2007.

Issued on June 19, 2003.

Jeffrey W. Runge,

Administrator.

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