

Signed in Washington, D.C. on June 6, 1996.

Richard H. Hopf,

*Deputy Assistant Secretary for Procurement and Assistance Management.*

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## DEPARTMENT OF TRANSPORTATION

### Research and Special Programs Administration

#### 49 CFR Part 192

[Docket PS-124; Amdt. 192-78]

RIN 2137-AC25

#### Regulatory Review; Gas Pipeline Safety Standards

**AGENCY:** Research and Special Programs Administration (RSPA), DOT.

**ACTION:** Correction of amendment number of final rule document.

**SUMMARY:** This action corrects the amendment number of the Final Rule document published in the Federal Register on Thursday, June 6, 1996 (61 FR 28770). In the document heading on page 28770, the amendment number "Amdt. 192-76" is changed to read "Amdt. 192-78." The Final Rule makes miscellaneous changes to the gas pipeline safety standards to provide clarity, eliminate unnecessary or burdensome requirements, and foster economic growth.

**EFFECTIVE DATE:** July 8, 1996.

**FOR FURTHER INFORMATION CONTACT:** Jenny Donohue, (202) 366-4046.

Issued in Washington D.C. on June 12, 1996.

Richard B. Felder,

*Associate Administrator for Pipeline Safety.*

[FR Doc. 96-15352 Filed 6-17-96; 8:45 am]

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### National Highway Traffic Safety Administration

#### 49 CFR Part 571

[Docket No. 74-09; Notice 46]

RIN 2127-AF02

#### Federal Motor Vehicle Safety Standards; Child Restraint Systems

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

**ACTION:** Final rule; response to petitions for reconsideration; correction.

**SUMMARY:** This document responds to petitions for reconsideration of a July

1995 final rule that amended Federal Motor Vehicle Safety Standard (FMVSS) No. 213, *Child Restraint Systems* to add a greater array of sizes and weights of test dummies for use in Standard 213 compliance tests. This is the second of two documents responding to those petitions. An earlier document delayed the compliance date of the rule until September 1, 1996, for manufacturers of add-on (portable) child restraint systems.

Most of the amendments made by today's rule correct or clarify provisions of the July 1995 rule. The only substantive changes made by today's rule are to amend provisions in that standard to permit manufacturers to produce belt-positioning seats with a mass of up to 4.4 kg (rather than limit the mass to 4 kg), and to permit them to use the word "mass" in labeling child seats. Petitions for reconsideration of matters relating to other issues are denied.

**DATES:** This rule is effective July 18, 1996. The compliance date for the amendments made by this rule (i.e., the date on which manufacturers must begin complying with the amendments) is September 1, 1996. Beginning July 18, 1996, manufacturers may begin voluntarily complying with the amendments made by this rule.

Petitions for reconsideration of this rule must be received by August 2, 1996.

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

**FOR FURTHER INFORMATION CONTACT:** For nonlegal issues: Dr. George Mouchahoir, Office of Vehicle Safety Standards (telephone 202-366-4919). For legal issues: Ms. Deirdre Fujita, Office of the Chief Counsel (202-366-2992). Both can be reached at the National Highway Traffic Safety Administration, 400 Seventh St., SW., Washington, DC 20590.

#### SUPPLEMENTARY INFORMATION:

##### Table of Contents

- I. Introduction
- II. Current requirements
- III. Final Rule
- IV. Petitions for Reconsideration
- V. Issues
  - a. Mass Ranges
  - b. Ninety-fifth percentile child dummy
  - c. Weight and height should match
  - d. Test Principles
    1. Speed Close to 30 mph
    2. Representative Seat Assembly
    3. Worst Case Testing

4. Testing "New" Restraints
  - e. Allowable Mass for Belt-Positioning Boosters
  - f. Knee Excursion
- VI. Corrections
  - a. Metrication
  - b. Labeling
  - c. Dummy Positioning
  - d. Dummy Selection
- VII. Compliance Date
- VIII. Rulemaking Analyses and Notices
  - a. Executive Order 12866 (Regulatory Planning and Review) and DOT Regulatory Policies and Procedures
  - b. Regulatory Flexibility Act
  - c. Executive Order 12612 (Federalism)
  - d. National Environmental Policy Act
  - e. Paperwork Reduction Act
  - f. Executive Order 12778 (Civil Justice Reform)

#### I. Introduction

This document is the second of two documents responding to petitions for reconsideration of a final rule published July 6, 1995 (60 FR 35126), and corrected September 29, 1995 (60 FR 50477). It also responds to other requests for rulemaking. The final rule amended Federal Motor Vehicle Safety Standard No. 213, "Child Restraint Systems" (49 CFR 571.213), by adding a greater array of sizes and weights of test dummies to Standard 213 for use in compliance tests. The rule, completing a substantial upgrade of the standard long envisioned by the agency, also responded to the NHTSA Authorization Act of 1991 (sections 2500-2509 of the Intermodal Surface Transportation Efficiency Act ("ISTEA")), which directed NHTSA to initiate rulemaking on child seat safety. The notice of proposed rulemaking (NPRM) for the rule was published March 16, 1994 (59 FR 12225).

On December 12, 1995 (60 FR 63651), NHTSA published the first document responding to petitions for reconsideration of the rule. In response to petitions from Cosco Inc. and Gerry Baby Products Company, two manufacturers of add-on child restraint systems, NHTSA extended the compliance date of the rule from January 3, 1996, to September 1, 1996. The agency extended the compliance date to provide manufacturers of add-on systems sufficient time to evaluate their products and make any necessary changes to them.

#### II. Current Requirements

Standard 213 applies to any device, except Type I (lap) or Type II (lap/shoulder) seat belts, designed for use in a motor vehicle or aircraft to restrain, seat, or position children whose mass is 23 kilograms (kg) (50 pounds) or less. The standard evaluates the performance of child restraint systems in dynamic

tests under conditions simulating a frontal crash of an average automobile at 48 kilometers per hour (kph) (30 miles per hour (mph)).

The dynamic tests are conducted using a test dummy. Currently, Standard 213 (S7) specifies two different dummies for use in compliance testing. A dummy representing a 6-month-old child is used for testing a child restraint system that is recommended by its manufacturer for use by children in a mass range that includes children whose mass is 9 kg (weighing 20 pounds) or less. That dummy, which is uninstrumented, is specified in subpart D of 49 CFR part 572. A dummy whose mass is 15 kg (weighing 33 pounds), representing a 3-year-old child, is used for testing a child restraint system that is recommended for children whose mass is more than 9 kg (weighing more than 20 pounds). This dummy is instrumented with accelerometers for measuring accelerations in the head and chest during impacts, and is specified in 49 CFR part 572, subpart C.

The requirements to be met by a child restraint in the dynamic testing include maintaining its structural integrity, retaining portions of the dummy within specified excursion limits (limits on how far specified portions of the body may move forward), and in the case of the 3-year-old dummy, limiting the forces exerted on the head and chest of the dummy in the crash. These requirements reduce the likelihood that the child using a child seat will be injured by the collapse or disintegration of the seat, by contact with the interior of the vehicle, or by imposition of intolerable forces by the seat.

### III. Final Rule

The final rule that is the subject of today's document amended Standard 213 to add three dummies, representing a newborn infant, 9-month-old and 6-year-old child, for use in the future in compliance testing under the standard. The rule will remove the 6-month-old child dummy currently used, since the need for it was obviated by the addition of the new dummies.

In adopting the new dummies, the agency sought to better evaluate the ability of child restraint systems to restrain and protect the range of children recommended for those systems. As a result of the rule, child restraints will have to meet the performance requirements of the standard while tested with dummies more representative of the children for whom the restraints are recommended. As a result, the performance of child restraints will be more thoroughly evaluated. A dummy representing

children at the lower end of the weight ranges recommended for a restraint will evaluate the ability of the restraint to restrain its occupant. A dummy at the higher end will evaluate the structural integrity of the restraint.

The rule adopted the following provisions specifying which of the new dummies NHTSA will use in the compliance testing of child restraint systems:

If the range of children recommended by a child restraint's manufacturer includes any children in the following range,	The following dummy(ies) is(are) used in the compliance testing of that restraint
Birth to 5 kg (11 lb) or less .....	Newborn.
More than 5 kg to 10 kg (22 lb).	Newborn. 9-month-old (20 lb).
More than 10 kg to 18 kg (40 lb).	9-month-old (20 lb). 3-yr-old (33 lb).
More than 18 kg (40 lb) .....	6-yr-old (47 lb).

\* This dummy is not to be used to test booster seats.

### IV. Petitions for Reconsideration

NHTSA received five petitions for reconsideration of the rule. One of these, from the Connecticut Attorney General's office, was untimely, and will be considered as a petition for rulemaking in accordance with § 553.35 of NHTSA's regulations. In addition, Mr. Louis F. Sokol, a metrication consultant, in a letter to the agency, pointed out minor errors relating to the use of SI measurements, and suggested use of a particular metric unit on child seat labels. That letter is also addressed in today's document.

#### Discussion of Petitions

This section briefly discusses the issues raised by each of the petitions, except issues relating to an extension of the compliance date for the rule. The agency responded to those compliance date issues in the earlier Federal Register document.

Consumers Union ("CU") petitioned for reconsideration of several aspects of the rule, including the mass/weight ranges and the specifications of which dummy or dummies will be used to test restraints in each mass/weight class. Consumers Union stated that the rule should not "allow manufacturers to recommend any particular restraint system for children larger in weight than the weight for which the system is required to be tested by the standard." In addition, CU suggested changes to

specific aspects of the dynamic test procedure.

The Connecticut Attorney General's office expressed concerns similar to CU's. This petitioner asked NHTSA to require that all tests of child restraint systems use a test dummy "with a weight consistent with the maximum recommended weight for use in the car seat." Similar to CU, this petitioner stated that the rule does not "guarantee" that infant seats recommended for infants up to 22 lb are safe for children who weigh up to 22 lb.

Cosco, Inc. ("Cosco"), a manufacturer of add-on child restraints, raised several issues in its petition, the most significant of which related to one aspect of the mass ranges. Cosco wanted the 10 kg to 18 kg (22 lb to 40 lb) category to be changed so that the upper limit is 20 kg (44 lb). Cosco stated that restraints with a 43 lb maximum recommendation have been in the marketplace for years without evidence of a safety problem. The bulk of Cosco's other issues related to apparent errors or omissions in the rule.

Advocates for Highway and Auto Safety ("Advocates") petitioned for reconsideration of an aspect of the mass ranges adopted by the rule. Advocates objected to the 18 kg (40 lb) dividing line between the third and fourth mass classes because there is no 18 kg test dummy. The petitioner stated that, without such a dummy, child restraints cannot be appropriately tested at 18 kg, which may be one extreme of a recommended mass range for a child restraint. In addition, Advocates objected to a discussion in the final rule relating to "worst case" testing.

Two petitioners, a child restraint manufacturer and a consortium of built-in restraint manufacturers, petitioned about certain specific performance requirements. Gerry Baby Products Company ("Gerry") requested a change to the requirement limiting the force that may be imposed on a child by the vehicle lap belt used to anchor a child seat to the vehicle (S5.4.3.2). The rule prohibited any loads except those resulting from a child seat with a mass less than 4 kg. Gerry petitioned to raise the limit from 4 kg to 4.4 kg. The American Automobile Manufacturers Association ("AAMA") petitioned to increase the knee excursion limit of 305 mm for built-in restraints (S5.1.3.1 (b)). AAMA stated that an allowance of 305 mm is too restrictive with respect to testing a booster seat with the 6-year-old dummy, and that until such time as an appropriate knee excursion limit can be developed for use with the dummy, no knee excursion limit should be in force.

## V. Issues

Most of the amendments made by today's rule correct or clarify provisions of the July 1995 rule. The only substantive changes made by today's rule are to amend S5.4.3.2 to permit manufacturers to produce belt-positioning seats with a mass of up to 4.4 kg (rather than limit the mass to 4 kg), and to permit them to use the word "mass" in labeling child seats. Petitions for reconsideration of matters relating to other issues are denied.

a. *Mass Ranges*

Consumers Union (CU) petitioned for reconsideration of the provisions of the rule that specify which child test dummies are used to evaluate the performance of a particular child restraint system. CU stated that the standard should specify testing with "a dummy representing the maximum weight of a child for whom the safety seat is designed." CU further stated that the standard should not permit manufacturers to recommend their restraints for any child weighing more than the heaviest test dummy used in the compliance testing of the product.

The main provisions with which CU is concerned are those that specify how to test a rear-facing seat and a convertible seat. The provisions for testing rear-facing seats specify that, if the range of children recommended by a child restraint's manufacturer includes any children of masses in a range of 5 kg to 10 kg (approximately 11 to 22 lb), the restraint is tested with both the newborn and 9-month-old (20 lb) dummies (S7.1(b)). CU believed that it is unsafe to permit manufacturers to label a rear-facing restraint as suitable for infants with masses up to 10 kg (22 lb), when the heaviest dummy used in testing the restraint weighs only 20 lb. CU described tests it conducted using the 20 lb 9-month-old dummy in infant seats that were generally labeled for children up to 20 lb.

Two popular models, certified by the manufacturers as safe based on tests with a smaller, lighter six-month-old [17.5 pound] dummy, and labeled for use by children up to 20 pounds, performed poorly when tested with the 20-pound dummy. In one case, the Century 590, the product barely passed our tests when tested with a 17.5-pound dummy, but failed dramatically when tested with a 20-pound dummy. In the second case, involving the Evenflo On My Way 206, the product failed in the same manner mentioned in NHTSA's press release of July 25, 1995 (i.e., a crack in the shell) when tested with a 17.5 dummy, but failed in a dramatic fashion when tested with a 20-pound dummy.

CU was thus concerned that, under the July 1995 rule, a rear-facing child restraint could meet Standard 213's requirements when tested with the 9-month-old (20 lb) dummy, but may or may not perform adequately when restraining a 22 lb child, even though the restraint is recommended for children weighing up to 22 lb.

CU had similar concerns about convertible and toddler restraint systems. (Convertible restraints are adjustable so that in one adjustment position they can be used rear-facing by an infant or a very young child in the same manner as an infant-only seat and in another position, by a toddler who is forward-facing, i.e., restrained facing in the normal direction of travel of the vehicle.) The rule specifies that a restraint recommended for use by children of masses in a range from 10 kg to 18 kg (22 to 40 lb) is tested with the 9-month-old<sup>1</sup> and 3-year old (33 lb) dummies (S7.1(c)). CU stated that these restraints should not be permitted to be recommended for children weighing more than 33 lb:

Because there is no standard 40-pound dummy available, we could test only with the 33-pound dummy. Hence, neither we nor the public nor NHTSA knows how these seats will perform with a child weighing between 33 and 40 pounds. In our view, this is an unacceptable situation for parents who are led by product labeling to believe that these seats will provide the necessary restraint in a crash.

After carefully reviewing CU's petition, NHTSA has determined that safety is best served by denying it.

The basis for the agency's decision to retain the 10 kg (22 lb) dividing line between the second and third weight ranges is grounded in the anatomical characteristics of infants and the corresponding real-world need to keep infants in rear-facing child restraints up through the end of their first year. As discussed below, adoption of CU's request could have the unintended and undesired effect of encouraging the premature transition of infants to front facing child restraints.

Infants have unique skeletal and muscular attributes. An article<sup>2</sup> by F. von Wimmersperg and Waldemar J. Czernakowski, "The Safe Deceleration of Infants in Car Crashes," describes the biomechanical characteristics of infants,

for consideration in developing adequate infant restraining devices:

To facilitate the passage of the fetus through the birth canal, the mother and the fetus can deform during the slow, almost static loads of the birth process. This ability of the fetus to deform safely under slow loads is mortgaged by a high vulnerability to local, blunt dynamic loads by impact on the head or chest, or violent movements of the head by shaking or otherwise. \* \* \* The infant is not just a scaled down older child. The anatomical differences are of such magnitude that engineering solutions adequate to decelerate older children can be expected to injure the infant.

"The Safe Deceleration of Infants in Car Crashes," Wimmersperg and Czernakowski, Proceedings of 20th STAPP Car Crash Conference, October 1976, pp. 545-585.

In addition to the undeveloped skeletal and muscular system of the infant, the size of the child's head and the stresses it produces on the neck make the infant extremely vulnerable to injury in frontal crashes. The head of a newborn represents one-third of the infant's total body weight. Unless properly supported, the head can produce a massive amount of force pulling on the undeveloped muscle system of an infant's neck in a crash.

Because of these anatomical features, child passenger safety experts have strongly recommended that infants should be positioned rear-facing in a vehicle. Infant restraints are designed to face the child rearward so that in a frontal crash, the forces are spread evenly across the infant's back and shoulders, the strongest part of the child's body. Further, the back of the head rests against the seating surface. In this way, severe neck injuries are prevented. Von Wimmersperg and Czernakowski state that "Injuries of the (infant's) neck and of the brain can be prevented only when the head mass and the torso mass decelerate gradually and simultaneously, with a minimum of relative movement."<sup>3</sup> Kathleen Weber of the Child Passenger Protection Research Program of the University of Michigan Medical School (UM-CPP) found that stretching forces acting on the neck can be reduced by half when forward-facing child dummies are turned to face the rear. She found that, in the forward-facing position, the neck of a six-month-old child dummy was subjected to about 1200 N of force, or over fifty times the weight of the head pulling on the neck. In tests in which

<sup>1</sup> The 9-month-old dummy is not used to test booster seats.

<sup>2</sup> This article was part of a petition for rulemaking submitted to NHTSA in 1992 by Century Products Co. (docket PRM-213-22) concerning a requirement then in Standard 213 that infant seats not change adjustment position in dynamic testing (S5.1.1). See docket 74-09, notice 36.

<sup>3</sup> In their article, these authors discuss a new type of infant restraint, a swinging bed, which they believe transfers the load from a frontal impact over a large area of the infant and reduces the duration of maximal impact for each area element.

the dummy was restrained rear-facing, measured neck forces were less than half of the forward-facing values. "Rear-Facing Restraint for Small Child Passengers," UMTRI Research Review, April-June 1995. Ms. Weber determined from her research that "children are much less prone to serious neck injury in a rear-facing than a forward-facing child restraint, and that children should therefore be kept facing the rear of the vehicle *until they are at least one-year old*." *Id.*, emphasis added. One-year is believed to be the earliest age at which a child should be turned to face forward because the infant's bones and muscular system take about eight to 12 months to ossify and develop to the point where it has outgrown the most serious vulnerability to local, blunt impacts on the head or chest, or violent movements of the head. Wimmersperg and Czernakowski, *id.*

While safety advocates recommend infants should be rear-facing until at least one year old, Standard 213's testing provisions inadvertently prevented manufacturers from recommending an upper weight limit that would enable children to stay rear-facing until one year of age. As noted in section II above, the standard specified that the 6-month-old child dummy is used for testing a child restraint system that is recommended by its manufacturer for use by children in a weight range that includes children weighing 20 lb or less. The 3-year-old child dummy is used for testing a child restraint system recommended for children weighing more than 20 lb. (The 20 lb weight corresponds to the average nine-month-old child.) Recommending any rear-facing restraint for the average 12-month-old (whose average weight is 22 lb) would necessitate recommending the restraint for children weighing in excess of 20 lb. A rear-facing restraint recommended for children weighing more than 20 lb had to be certified as meeting Standard 213 when tested with the 33 lb 3-year-old dummy.

Testing a rear-facing child restraint with the 3-year-old dummy was problematic. In an April 22, 1992 interpretation letter to Century Products, NHTSA determined that if a convertible restraint could not physically permit the 3-year-old dummy to be positioned for the dynamic test, the restraint could not be recommended by its manufacturer for use in the rear-facing position by children weighing more than 20 pounds. Moreover, since a rear-facing restraint recommended for a child weighing more than 20 lb must meet all performance criteria when tested with the 3-year-old dummy, most manufacturers will not certify their

infant restraints to Standard 213. Rear-facing restraints typically have a seat back that is too low to enable the restraint to meet the standard's occupant head excursion requirement (S5.1.3.2) when tested with the 3-year-old dummy.

To enable manufacturers to recommend rear-facing restraints for infants up to 12 months in age without making it necessary to test those restraints with the 33 lb 3-year-old dummy, the July 1995 rule divided the weight ranges in such a manner that the 3-year-old dummy is used to test a restraint only if the restraint is recommended for use by a child weighing more than 22 lb. In the proposed rule, NHTSA proposed a dividing line of 20 lb, but raised it to 22 lb in the final rule in response to commenters who believed that the change would encourage manufacturers to recommend positioning an infant in a rear-facing position at least until the child is one year old. 60 FR at 35131, 35132. NHTSA concluded that safety would be served by better ensuring that infants ride rear-facing until their skeletal and muscular structure can develop to where they can more safely withstand crash forces in a forward-facing position.

While based on a desire to promote safety, CU's request to prohibit manufacturers from specifying their products for use by children exceeding the weight of the test dummy would have the opposite effect. Granting that request would not comport with real world needs of infants. As noted above, taking action that would have the effect of prohibiting rear-facing restraints from being recommended for children weighing more than 20 lb does not accord with safety data that indicate infants are safer riding rear-facing until at least 12 months old (i.e., until they reach 22 lb). It perpetuates a current "impediment" (Weber, *id.*) in Standard 213 that resulted in less than optimal, and possibly misleading, weight recommendations. Because 20 pounds is the weight of an average nine-month-old child, CU's approach would continue to limit weight recommendations in such a way as to possibly mislead consumers into thinking that an infant must be switched to face forward when the baby is only nine months old. This is likely to be before the infant's bones and muscular system have developed sufficiently to make seating the child in a forward facing position appropriate. Thus, CU's approach could have the unintended effect of detracting from the real-world safety needs of older infants (ages nine- to 12-months).

NHTSA notes that the potential adverse effect of CU's suggestion that the weights of the dummies used for Standard 213 compliance tests should determine the limits of the weight recommendations made by the manufacturers would have been even greater under Standard 213 prior to the July 1995 amendment. Under CU's approach and under that version of the Standard, infant restraint manufacturers would not have been allowed to recommend their restraints for children weighing more than the 17.5 lb (six-month-old) dummy. That limit would have pushed infants out of rear facing infant seats and into forward facing child restraints even more prematurely than under the July 1995 amendment.

The agency recognizes that, even with the new test dummies incorporated into Standard 213, it may be possible to gain still more safety benefits from making further changes to the standard. The more dummies that were added to the standard, the more likely it would be that there would be dummies that coincided more exactly with the lower and upper limits of the range of recommended weight and sizes of children for a particular child restraint.

A perfect standard might be one that incorporated test dummies representative of *all* children for whom a child restraint is recommended, including all children at the extremes of the recommended weight ranges. A perfect standard might be one that specified testing with "a dummy representing the maximum weight of a child for whom the safety seat is designed," as CU suggested in its petition, assuming that dummies representing children of all types exist, and that the added costs and burdens of such testing could be justified by safety benefits. However, such dummies do not exist.

In addition, the agency believes such an approach is unnecessarily restrictive, given that there has been no showing that the wider array of dummies incorporated into Standard 213 by the July 1995 rule are insufficient surrogates for the children for whom the restraints are recommended. There is no question that Standard 213 could possibly more extensively evaluate a restraint's performance if it incorporated more test dummies representing more of the children for whom the restraint is designed. In that regard, NHTSA notes that it is considering incorporating a 12-month-old (22 lb) child test dummy into Standard 213 compliance testing, to make the evaluation of infant seats even more extensive. The agency is currently evaluating the 12-month-old CRABI dummy. However, the agency does not

believe that there is a safety problem that warrants prohibiting manufacturers from recommending infant seats for children up to a mass of 10 kg (22 lb) in the absence of such a dummy. NHTSA notes further that the test dummy that CU used to test infant seats, resulting in "not acceptable" performance ratings, was the 20 lb nine-month-old adopted by the July 1995 rule. Thus, CU's testing of infant seats was not more thorough than that which will be required by the July 1995 rule. After September 1, 1996, NHTSA will evaluate all infant seats using the same general methodology that CU used in its tests. Seats whose performance was found by CU to be "not acceptable" will need to be improved, to ensure that Standard 213's requirements will be met when NHTSA conducts its compliance tests.

CU's belief that the upper end of the recommended weight ranges for users of infant restraints should be limited to 20 lb is based on its concern that the restraint may fail when restraining a heavier child. NHTSA notes that there is no information showing that failures will occur above 20 lb, or the nature and magnitude of such failures. While NHTSA agrees that child restraints should be tested with a test dummy representative of the children for whom the restraint is recommended, the agency does not agree that the nine-month-old dummy inadequately demonstrates the suitability of a restraint for children weighing 20 to 22 lb.

In contrast to CU's supposition that infant restraints could fail when restraining children weighing 20 to 22 lb, there is a demonstrable need, discussed above, to keep infants rear-facing longer. Even if some restraints were to fail in some degree when restraining a child weighing 20 to 22 pounds, the safety impact of these failures—to a limited portion of the infant population—must be weighed against the impact of forcing all children to make a premature shift from the safer rear-facing position to forward-facing. On balance, the agency believes there is a net safety benefit from keeping infants rear-facing longer.

Accordingly, NHTSA is denying CU's request that the agency prohibit infant restraint manufacturers from recommending their restraints for children weighing more than 20 lb.

For related reasons, the agency is also denying CU's suggestion that convertible and toddler restraints should not be permitted to be recommended for children weighing more than 33 lb. CU's approach would have the effect of forcing toddlers out of

child restraints specially designed for young children (typically 20 to 40 lb) and into restraints that may not be appropriate for them, i.e., booster seats or the vehicle's belt systems. It is hypothetically possible that a restraint that passes the Standard 213 criteria when tested with a 33-lb dummy could fail when restraining a child weighing 33 to 40 lb. However, on balance, that possibility of such a failure is outweighed by the safety risk of forcing children into restraints that might not be appropriate for them.

It is stressed that, even though Federal motor vehicle safety standards are *minimum* requirements, manufacturers of motor vehicles and child restraint systems generally aim at overdesigning their products to provide for higher performance to account for unforeseen uncertainties. Further, child restraints that are currently recommended for use up to 50 pounds are tested with just a three year (33 lb) dummy. More importantly, there are no data indicating a safety problem with these restraints when used to restrain children weighing 34 to 50 lb. This rule is a substantial improvement to current testing requirements in Standard 213. Prior to the amendment, only the 33 lb dummy was used to test restraints recommended for children from 20 to 50 lb. Under the amendment, the 33 lb dummy would be used to test restraints recommended for children weighing 22 to 40 lb, a much narrower range of weights.

Since the agency is denying the parts of CU's petition relating to the mass ranges, it is also denying the petition for rulemaking from the Attorney General's Office for Connecticut. This petitioner asked NHTSA to require "that all tests for child restraint systems use a test dummy with a weight consistent with the maximum recommended weight for use in the car seat." The petition raised issues identical to those of CU. For the reasons discussed above, NHTSA has not found a reasonable possibility that the order requested by Connecticut will be issued at the conclusion of the appropriate proceeding. Accordingly, NHTSA denies the rulemaking petition.

Advocates for Highway and Auto Safety ("Advocates") objected to the agency's drawing the line between the third and fourth mass classes using the 18 kg (40 lb) limit because there is no 18 kg test dummy. The petitioner believed that, without such a dummy, child restraints cannot be adequately tested at 18 kg, which may be one extreme of a recommended mass range. Advocates preferred the mass classes proposed by the NPRM. The NPRM proposed that restraints recommended for children having a mass from 4 kg to

not more than 9 kg (weights of 9 to 20 lb) would be tested with the newborn and 9-month-old dummies. Restraints recommended for children with masses from 9 to not more than 13.5 kg (20 to 30 lb) were to be tested with the 9-month-old and 3-year-old dummies, and those recommended for children with masses greater than 13.5 kg were to be tested with the 3-year and 6-year-old dummies.

NHTSA is denying Advocates' request to return to the mass categories of the NPRM. As explained in the final rule, Cosco pointed out in its comment that the proposed mass classes could cause problems for convertible restraints. The agency quoted a comment from Cosco, which stated that:

NHTSA's fourth category covers any car seats for children more than 30 pounds. This includes both convertible seats and auto boosters, and would force manufacturers to test convertible seats with the 6-year-old dummy, which weighs from 4 to 7 pounds more than the maximum weight recommended for these seats (40 to 43 pounds). The 6-year-old dummy is also 9" taller than the 3-year-old dummy and would almost certainly exceed the head excursion limit. Since it is doubtful that convertible car seats could pass with the 6-year-old dummy, it is likely that manufacturers would be forced to put a maximum weight of 30 pounds on their convertible seats. The proposal as it stands would therefore regulate out of existence one of the most effective types of car seats available.

NHTSA concurred with Cosco's comment that convertible child restraints should not be tested with the six-year-old, 21.5 kg (47.3 lb) dummy (60 FR at 35132). Convertible restraints are typically recommended for children from newborn to 18 kg (40 lb). The six-year-old dummy is not representative of a child for whom the restraint is recommended. Further, according to Cosco, convertible restraints would have difficulty in meeting Standard 213's requirements when tested with the 6-year-old dummy. If the NPRM's mass ranges were adopted, manufacturers of convertible restraints would likely restrict use of their restraints to children with masses of less than 13.5 kg (30 lb), to avoid testing with the 6-year-old dummy. Since convertible restraints are generally considered effective at restraining children up to 18 kg (40 lb), such a restriction could likely result in parents moving their 30 lb toddlers into a booster seat or a vehicle belt system before booster seats or seat belts should be used by the younger child, assuming a restraint system is used at all after the convertible child restraint.

NHTSA recommends that children should be kept in a convertible restraint for as long as they will fit such a

restraint, usually until they reach about 40 lb or four years. A convertible seat, which has shoulder straps, provides greater protection for children less than 40 lb than a booster seat, especially in rollover and other non-frontal crashes. See NHTSA's "Child Passenger Safety Resource Manual," March 1992. A convertible seat may provide greater protection than a vehicle's belt system, which may not properly fit a young child. To be used correctly, the lap belt must be snug across the child's hips and must not ride up across the stomach, and the shoulder belt must not cross the face or the front of the neck. As a result of Advocate's approach, young children could be moved out of convertible restraints into a booster seat or a vehicle belt system too early (e.g., at 30 lb), which could have an overall negative safety impact.

Given the above, Advocates has not provided sufficient reason for amending the mass ranges to return to those proposed in the NPRM. While under ideal circumstances, it might be desirable to have a 40 lb test dummy, such a dummy is unavailable. NHTSA has determined that, on balance, safety is better served with the mass ranges of the final rule, since it ensures the availability of convertible seats for toddlers in the 13.5 to 18 kg (30 to 40 lb) range.

Cosco wanted the 10 kg to 18 kg (22 lb to 40 lb) category to be changed so that its upper limit is 20 kg (44 lb), to avoid subjecting convertible restraints to tests with the 47 lb 6-year-old child dummy. Cosco said that convertible restraints recommended for use by children up to 43 lb have been in the marketplace for years, without evidence of a safety problem. Cosco stated that raising the limit to 20 kg would be consistent with the recommendations of "many passenger safety advocates" that consumers should be encouraged to keep children in convertible restraints for as long as possible. Cosco argued that the rule is inconsistent in that under it manufacturers may recommend a convertible restraint for children of heights up to 1100 mm, which is the 95th percentile for children in the 3.5- to 4.5-year age group, and the restraint will not be tested with the 6-year-old dummy, yet manufacturers that recommend a restraint for children weighing up to the 95th-percentile child (43.2 lb), subject their restraints to testing with the 6-year-old dummy.

NHTSA is denying Cosco's request to increase the upper limit to 20 kg (44 lb). The agency believes that a restraint that is recommended for use by children with a mass of up to 20 kg (44 lb) should be tested with the 6-year-old (47 lb)

dummy, because the dummy is sufficiently representative of children at the upper end of the recommended range of users. NHTSA recognizes that, as a result of this decision, manufacturers, such as Cosco, will likely revise their recommendations downward, such that, convertible restraints will not be recommended for children with a mass of more than 18 kg (40 lb). The issue of the relative safety of placing children with a mass more than 18 kg (40 lb) in convertible restraints as opposed to booster seats or vehicle belt systems is not nearly so easily resolved as is the issue of whether to place the child under 18 kg in a convertible restraint or the issue of whether to place a child less than one year old in a rear-facing or a forward-facing restraint. NHTSA anticipates that manufacturers will be able to develop designs that would enable a convertible restraint to meet Standard 213's performance requirements when tested with the 6-year-old dummy, if such a restraint meets market demands. However, until a complying design is developed, the agency believes that a restraint that is recommended for a child with a mass of 18 to 20 kg (weight of 40 to 44 lb) should be tested with the 6-year-old (47-lb) dummy, to ensure that the restraint can maintain its structural integrity and properly retain a child in the upper recommended weight range.

The agency does not agree with Cosco's comment that Standard 213 is inconsistent in that it permits manufacturers to recommend a convertible restraint for a child as tall as a 95th-percentile three-year-old (height 1100 mm) without subjecting the seat to testing with the 6-year-old dummy. The agency did not intend to imply that manufacturers should label their restraints as suitable for a child in the 95th-percentile for height. The rule was intended to subject a child restraint to testing with an additional (larger) dummy if the manufacturer's recommended child height exceeds the height of the 95th percentile child. For example, a child restraint is to be tested with the 6-year-old dummy if its manufacturer recommended it for children taller than the 95th-percentile 3-year-old. The rule enabled NHTSA to use the manufacturer's height recommendations, in addition to the manufacturer's weight recommendation, to select the test dummies used in Standard 213's compliance test. If height were not a factor, it might be possible for a restraint to be tested with a dummy or dummies insufficiently representative of the range of children recommended for the restraint. This

could occur if a manufacturer were to recommend inconsistent mass and height ranges. A manufacturer could create an inconsistency by recommending a height range that corresponds to children who are of greater mass than the masses expressly recommended by the manufacturer for the restraint. The rule used the 95th-percentile values to give manufacturers wide latitude in recommending the reasonable height ranges they think are appropriate for their restraints. 60 FR at 35134.

The agency does not believe the same wide latitude should be provided with regard to the mass recommendations. A dummy representing a 50th-percentile three-year-old child (33 lb), does not provide a full evaluation of the performance of a restraint when restraining a child of a mass of a 95th-percentile three-year-old (weighing 44 lb). NHTSA believes that if a manufacturer recommends its restraint for a child of a mass of a 95th-percentile three-year-old, the six-year-old child dummy (weighing 47 lb) better assesses the structural soundness of the seat and its ability to restrain children at the upper recommended mass range.

#### *b. Ninety-fifth Percentile Child Dummy*

CU raised another issue about the adequacy of the test dummy used to evaluate the performance of a rear-facing seat. In its petition, CU recognized that "most child development and safety experts advise that infants should ride in a rear-facing position up to the age of about one year." CU believed that, in the case where a seat is recommended for a particular age of child (i.e., infants up to the age of one year), the dummy used to test the restraint should be one representing "an above-average-sized" child, i.e., a 95th-percentile one-year-old male child (weighing 26 lb), rather than a 50th percentile child. CU argued that by definition, half the children of a particular age weigh more than the median weight for that age. CU believed an above-average-sized dummy is needed to ensure that results apply to most children in the user population.

The agency is denying this request. As far as NHTSA is aware, manufacturers recommend their restraints for children based on the child's weight and height, as required by Standard 213's labeling provisions, rather than for a particular age of child (e.g., infants up to the age of one year). Thus, it does not appear the situation addressed by CU raises a safety problem.

Further, assuming there are restraints that are recommended for infants up to the age of one year, the agency does not

entirely agree with CU. The agency agrees with the implication, raised in CU's petition, that in an ideal world, dummies would exist representing every size of child from birth to 50 lb, in each age and weight group. If such dummies existed, a most complete evaluation of a child restraint might be (barring cost implications) to test all child restraints with all dummies representative of any child for whom the restraint is recommended. However, such dummies do not exist. While a 12-month-old dummy may have potential advantages over the nine-month-old in testing rear-facing restraints, the 12-month-old dummy is not available at this time. Rulemaking requiring rear-facing restraints to be tested with the nine-month-old should not be suspended pending assessment of the suitability and availability of the 12-month-old child dummy as a test device.

NHTSA also does not agree that a dummy representing a 95th-percentile one-year-old male child is preferable over one representing a 50th-percentile child. The latter dummy is more representative of the children for whom the restraint is recommended, and thus gives a better representation of the overall performance of the restraint. Also, it appears that CU is making its determination of "adequate protection" only in terms of whether a restraint is capable of maintaining its structural integrity in the dynamic test. The agency agrees that the structural integrity of a restraint is better evaluated using a larger dummy than a smaller one. However, the ability of the restraint to contain an occupant is more effectively evaluated using a smaller dummy than a larger one. Using a dummy representing a 95th-percentile dummy could thus result in trade-offs between measuring the structural integrity of a restraint and the potential for ejection.

#### *c. Weight and Height Should Match*

CU said that it observed inconsistencies in the height and weight limits specified on the labels for many safety seats. In particular, CU believed manufacturers are not ensuring that their height recommendations match the weight recommendations. CU said it noticed that some infant seats are labeled for use by infants weighing up to 20 lb and up to 26 inches in height. CU states:

Twenty pounds is the 50th-percentile weight of a nine-month-old, while 26 inches is the 50th-percentile height of a six-month-old. Since children may exceed the height limit in this example before they reach the weight limit, parents who rely on the weight limit

may use the product in a manner contrary to labeled instructions.

The petitioner suggested that NHTSA require manufacturers to make recommendations for maximum height and weight that match both the height and weight of test dummies used in the tests on which the seat's certification was based.

To the extent that CU is requesting that manufacturers should be prohibited from labeling their seats for use by children with weights exceeding the weight of the test dummy used to test the seat, this issue was addressed under section a, above, and will not be repeated here. To the extent that the petitioner requests that NHTSA adopt a provision in Standard 213 that requires the height and weight recommendations to "match," NHTSA denies this request. The agency has not observed the labeling practices reported by CU. To the extent such practices have occurred, NHTSA does not believe they are widespread, or in need of the requirement suggested by CU. However, the agency will continue to monitor labeling practices.

#### *d. Test Principles*

The effect of specifying the additional test dummies in Standard 213 compliance testing is to require child restraints to meet the standard's performance criteria when restraining the new dummies. CU, Advocates and Cosco had questions about the agency's method of testing child restraints to the standard's dynamic performance requirements.

##### *1. Speed Close to 30 MPH*

CU raised an issue about the test speeds used to test add-on child restraints. Under Standard 213, add-on systems are compliance tested in sled tests that simulate frontal barrier impacts. Standard 213 specifies that the sled test for add-on child restraint systems is at a velocity change of 48 km/h (30 mph) "with the acceleration of the test platform entirely within the curve shown in Figure 2" of the standard. S6.1.1(b)(1).<sup>4</sup> In its petition for reconsideration, CU said that, based on its review of NHTSA compliance reports, NHTSA routinely conducts the compliance test at speeds in a range from 27.6 mph to 28.7 mph. \* \* \* (NHTSA's) compliance procedures, as spelled out in its Laboratory Procedure For Child Restraint System Testing (April 1981), permit impact speeds

ranging from 27 mph to 30 mph. Hence, the current compliance program is significantly less demanding than the standard it professes to enforce. \* \* \* Throughout our testing, we specified 30 mph as the target impact speed, and the lab was able to control the speed of the test sleds within  $\pm 3$  m.p.h. Based on our experience, therefore, we recommend that the certification and compliance procedures specify a test speed ranging from 29.7 to 30.3 mph.

CU is correct that NHTSA's Laboratory Procedure for Standard 213 compliance tests specifies that add-on restraints are tested at a velocity change of 27 to 30 mph. Test speeds are permitted to fall below 30 mph primarily because of the limit, also specified in Standard 213 as a dynamic test condition, that "the acceleration of the test platform (must be) entirely within the curve shown in Figure 2" of the standard. The velocity at which the sled test is conducted controls whether the acceleration of the sled is within the curve depicted in Figure 2. In order to ensure that no portion of the acceleration curve is outside of the curve shown in Figure 2, NHTSA must adjust the velocity downward. Similarly, the test speed is carefully monitored, and adjusted slightly downward, to ensure that 30 mph is not exceeded. Contrary to CU's view, the agency believes it must "err" on the side of slightly reducing the test speeds to preserve the integrity of the compliance test. The agency must ensure that its compliance test data can withstand legal challenge. Exceeding the test conditions subjects the agency to claims that NHTSA conducted a more demanding test than that required in the standard. Thus, exceeding the test conditions at best would complicate enforcement efforts; worse, it could undermine the validity of the test. For these reasons, NHTSA concludes that, given the conditions in Standard 213 for the dynamic sled test, its test procedures should not be changed at this time.

NHTSA is, however, undertaking an effort to evaluate Standard 213's test procedures and conditions, and will consider whether the provision limiting the acceleration of the test platform to the curve of Figure 2 should be revised. Such an evaluation could result in an upward adjustment of the test velocities specified in the laboratory procedures. In the meantime, NHTSA stresses that Standard 213 specifies a velocity change of 30 mph that manufacturers should achieve, at a minimum, when designing and manufacturing child restraint systems.

<sup>4</sup> The 48 km/h test is specified for "Test Configuration I," which all applies to all child restraints. "Test Configuration II" is an additional 32 km/h (20 mph) misuse test for certain restraints.

## 2. Representative Seat Assembly

NHTSA's compliance procedures specify that the test device for testing add-on child restraints is a "standard seat assembly consisting of a simulated vehicle bench seat." (S6.1.1(a)(1), July 1995 rule.) CU stated that the seat assembly is of a design representative of those used in vehicles of the early 1970's, and is not representative of current vehicle seat designs. While acknowledging "We (CU) have no data demonstrating what differences in test results or actual use performance this difference might have," CU believed the assembly should be updated.

NHTSA agrees that the standard seat assembly should be representative of current vehicle seats, particularly if features of the assembly significantly affect the outcome of compliance tests conducted on it. Modifying the standard seat assembly could also be desirable for other reasons, such as possible cost reductions due to not having to change the flexible pin in the seat hinges of the standard seat assembly after each test. The agency is reviewing these issues in an on-going feasibility study at NHTSA's Vehicle Research and Test Center. The results will help NHTSA decide whether it needs to upgrade the seat assembly.

## 3. Worst Case Testing

Advocates objected to the agency's discussion of "worst case" testing in the final rule (60 FR at 35133). The discussion responded to some commenters who generally believed that adopting the new dummies would result in unnecessary cost increases. They argued that testing a rear-facing seat with the infant dummy, and a forward-facing restraint (other than a booster seat) with the nine-month-old dummy would serve no useful purpose since the commenters believed there is no question that the restraints will pass the Standard 213 performance criteria using the dummies. The agency disagreed that no useful purpose is served by subjecting child restraints to tests with the array of dummies. NHTSA stated that, when child restraints are tested with only one dummy to represent a wide range of children, there is a risk that a restraint could be designed to perform adequately using the dummy, but could perform inadequately in restraining children at the extremes of the recommended weight ranges.

The agency further stated:

It should be noted that this rule does not require manufacturers to test with all the specified dummies. A manufacturer may believe that testing with only the largest of a set of specified dummies represents "worst

case" testing, and that there is no need to test its restraints with the smaller dummies. That is, a manufacturer may determine that a child restraint meeting Standard 213's performance criteria when tested under worst case conditions will likely meet those criteria when tested under less severe conditions. A manufacturer that tests its child restraint for certification purposes could limit its testing cost by deciding to test only a worst case scenario, i.e., testing under the most austere or unfavorable conditions and circumstances specified in the standard.<sup>5</sup> In the event that the agency found an apparent noncompliance, such as an ejection, using one of the smaller dummies, the manufacturer would have to demonstrate that it was reasonable for it to conclude that testing with the large dummy represented the worst case scenario. *Id.*

Advocates believed that this discussion meant that "NHTSA has decided to permit manufacturers to avoid testing child restraints with all applicable test dummies." Advocates requested that NHTSA "rescind permitting certification testing based on 'worst case' tests conducted only with the largest test dummy for the specified weight range."

NHTSA believes this comment reflects a misunderstanding of the compliance test procedures set forth in the FMVSSs. The July 1995 rule, which adopted the new test dummies into Standard 213, enabled NHTSA to test child restraints using the new dummies. As a result of the rule, manufacturers must ensure that their restraints will meet the requirements of Standard 213 when tested in the manner specified in the standard. The rule did not require manufacturers to use the new test dummies. None of the safety standards require manufacturers to test in a particular manner; manufacturers are not required to conduct any testing whatsoever before certifying that their products comply with Standard 213. If manufacturers choose to conduct testing in accordance with the compliance test procedures, they are free to simulate any or all parts of the test procedures.

Thus, NHTSA's statements about worst case testing did not affect any responsibilities of manufacturers to test

<sup>5</sup> Relying on worst case testing as a basis for a manufacturer's certification is commonplace among manufacturers. For example, Standard 208, "Occupant Crash Protection," requires injury criteria to be met with the test vehicle traveling forward at any speed "up to and including 30 mph" into a fixed barrier "that is perpendicular to the line of travel of the vehicle, or at any angle up to 30 degrees in either direction from the perpendicular" (S5.1). Manufacturers typically test a vehicle at 30 mph into a perpendicular barrier since that is the worst case test. The manufacturers believe that if the vehicle passes that worst case test, it is reasonable to conclude it will pass less severe tests (e.g., at lower speeds into angled barriers). (Footnote 3 in text.)

and certify their products. It did not "permit" manufacturers to certify their restraints using only the heavier of two test dummies; there never was a requirement that both dummies be used. Instead, the statement bore on whether the rule necessarily increased testing costs for manufacturers. NHTSA sought to explain that a manufacturer may choose to use only one of two test dummies to test its restraint, provided that the manufacturer exercises "due care" in making its certifications, as provided in section 30115 of 49 U.S.C. Chapter 301 (formerly the National Traffic and Motor Vehicle Safety Act). Whether a manufacturer has exercised due care in using only one of two dummies is an issue that bears on NHTSA's consideration of the appropriateness of a civil penalty for a noncompliance. A manufacturer that can show that it exercised due care in making its certification would still be subject to the statutory obligation to recall and remedy its restraints that do not conform to the requirements of Standard 213. This same obligation would apply even if the manufacturer had conducted full compliance testing and used all the dummies specified for a given mass/weight range.

## 4. Testing "New" Restraints

Cosco objected to an amendment concerning the condition of the child restraints that NHTSA will obtain for compliance testing. At one time, Standard 213 specified in its test procedure that the compliance test is conducted by, first, attaching a "new" child restraint on the standard seat assembly used to test child restraints. In amending this provision, NHTSA removed the reference to a "new" seat, and revised it to simply describe the child restraint test specimen as "the" restraint. Cosco was alarmed by this change, believing that it allowed NHTSA to conduct compliance testing with "used seats, in any condition of wear, possibly with missing or damaged components," or with seats that have been in accidents.

The amendment that is the cause of Cosco's concern (removal of "new") was made in a final rule that was published in 1994. 59 FR 37167, July 21, 1994. Amendments made by that rule cannot be reconsidered at this time through petitions for reconsideration. However, NHTSA will address Cosco's concern, because it reflects a fundamental misunderstanding of NHTSA's authority.

NHTSA can only test new products for compliance with the FMVSSs. The agency lacks the authority to conduct compliance tests on any used,

previously-owned product, including a child seat, because under section 30112 of 49 U.S.C. Chapter 301, manufacturers are not responsible for ensuring the continued compliance of their products "after the first purchase \* \* \* in good faith other than for resale." Since NHTSA cannot require a used child seat to meet Standard 213, the agency does not test them for compliance. Thus, the word "new" was removed as unnecessary.

*e. Allowable Mass for Belt-Positioning Boosters*

In response to Gerry Baby Products, this rule amends the requirement of S5.4.3.2 that limits the force that may be imposed on a child by a belt used to attach a child seat to a vehicle. This rule prohibits any loads except those resulting from a child seat with a mass less than 4.4 kg. The current exclusion is for child seats with a mass less than 4 kg.

Prior to the July 1995 amendment, S5.4.3.2 specified that for add-on child restraints (another provision specifies comparable requirements for built-in restraints),

Each belt that is part of the child restraint system and that is designed to restrain a child using the system and to attach the system to the vehicle shall, when tested in accordance with [the dynamic test of] S6.1, impose no loads on the child that result from the mass of the system, or \* \* \* (from) the mass of the seat back of the standard seat assembly \* \* \*.

The NPRM preceding the July rule (March 1994) proposed to expand S5.4.3.2 to also apply it to each Type I and the lap portion of a Type II vehicle belt that is used to attach the child seat to the vehicle. These belts, which anchor the child seat to the vehicle, function to absorb the forces of the crash into the frame of the vehicle. NHTSA proposed that these belts not be permitted to transfer those crash forces to the occupant child.

However, comments to the NPRM indicated that the proposed amendment of S5.4.3.2 would prohibit belt-positioning seats with a back, since the mass of those systems contributes to the loading of the vehicle seat belt on the restrained child during a crash. The agency did not intend that effect, nor did NHTSA believe that there is a sufficient safety problem to warrant prohibiting current designs of belt-positioning seats with backs. Yet, at the same time, NHTSA believed that limits should be established to keep in check the potential for injury due to overloading a child occupant, such as from a massive child seat back.

The agency adopted an approach suggested by some commenters. Century and the University of Michigan Child Passenger Program (UM-CPP) suggested retaining the proposal but excluding from the requirement any restraint with a mass of less than 4 kg (8.8 lb). These commenters indicated the 4 kg limit is consistent with requirements in Europe and the current U.S. market. NHTSA agreed to this approach, since there have been no data showing that a child seat with a mass less than 4 kg imposes harmful loads on a child.

Gerry petitioned for reconsideration of the 4 kg limit. Gerry pointed out that the agency's belief that all the belt-positioning seats in the U.S. market have a mass less than 4 kg was incorrect. Gerry said that its Model 631 and 632 BeltRight and Evolution Booster seats were shipped in March and April 1995, respectively. According to the petitioner, these seats have a mass of up to 4.4 kg. In an October 13, 1995 addendum to its petition for reconsideration, Gerry stated that it has received no report from the field "indicating directly or indirectly that any problems or injuries were associated with loads being placed on the child by the booster seats."

In view of Gerry's submission, NHTSA's decision to limit the exclusion to 4 kg was based on erroneous information. NHTSA was not aware of Gerry's Model 631 and 632 booster seats, and did not realize that there were belt-positioning boosters with a mass greater than 4 kg. Gerry stated that its field experience indicates that its booster seats, with a mass up to 4.4 kg, do not appear to be imposing unsafe loads on the child occupant. Based on the above, the 4 kg limit excluding seats from S5.4.3.2 is increased to 4.4 kg.

*f. Knee Excursion*

This document denies the request of the AAMA to increase the knee excursion limit of 305 mm for built-in restraints (S5.1.3.1 (b)), or in the alternative, remove the limit until such time as another knee excursion limit can be developed.

AAMA's request relates to an amendment NHTSA adopted to clarify Standard 213's knee excursion requirements. Prior to the amendment, the excursion requirement for built-in child restraints (S5.1.3.1(b)) prohibited the dummy's knee pivot from passing through a plane that is a specified distance "forward of the hinge point of the specific vehicle seat into which the system is built." Chrysler suggested (docket 74-09-N24-001) that NHTSA amend the reference point because the "hinge point of the specific vehicle

seat" cannot be readily determined for most vehicle seats. This is because most vehicle seats into which a built-in child restraint is fabricated do not have hinges for their backs, or are configured so that the hinge point is not easily seen during dynamic testing.

NHTSA proposed to address this concern by referencing the H-point on the seat. The H-point is located at approximately the same location as the "hinge point" on a vehicle seat. The H-point of a specific vehicle seating position is determined by using equipment and procedures specified in the Society of Automotive Engineers (SAE) recommended practice SAE J826 (May 1987), "Devices for Use in Defining and Measuring Vehicle Seating Accommodation." The H-point is identified either during the seat's design by means of a two-dimensional drafting template, or after the vehicle is completely manufactured, by means of a three-dimensional device. However, comments on this proposal expressed concern that using the H-point as a reference still results in ambiguity in the test procedure, since the H-point varies from vehicle to vehicle, and is not easily seen during dynamic testing.

Commenters suggested that, instead of using the H-point, the agency should adopt Transport Canada's approach to measuring knee excursion for built-in restraints. That approach limits the forward knee movement to a maximum of 305 mm (12 inches) at any time during the test from the initial knee position of the dummy.

NHTSA agreed to base the knee excursion limit for built-in seats on the approach of Transport Canada. Thus, the agency adopted a requirement that limited maximum knee translation in terms of the initial position of the knee itself. Knee excursion is measured using a point on the "knee pivot" that is easily defined on the test dummy. The knee pivot point is easily observed during the dynamic test. The rule limited the longitudinal horizontal movement of the knee pivot point, from the initial position of the knee pivot, to a maximum of 305 mm (12 inches). The 12 inch value is equivalent to the level of performance currently required by Standard 213 (i.e., 914 mm (36 inches) measured from the hinge point of the seat assembly).

AAMA petitioned for an increase in the allowance of 305 mm, when testing a built-in booster seat with the 6-year-old dummy. AAMA believed Transport Canada's knee excursion limits, on which the adopted provisions were based, apply only to built-in conventional child seats, and not to "booster seats which would be tested

with the six-year-old dummy." AAMA believed "an allowance greater than 305 mm would appear to be required for the heavier six-year-old dummy."

NHTSA is denying AAMA's request because the requested change does not appear warranted. The petitioner submitted no information to support its request. For built-in restraints, knee excursion is measured relative to the knee pivot on the test dummy. Thus, the 6-year-old dummy's knees are allowed to move horizontally the same distance, relative to the dummy, as the three-year-old dummy. Also, when measured from a point fixed on the built-in child seat in which the dummy is seated, the 6-year-old dummy is already permitted two additional inches of forward excursion than the limit for the three-year-old dummy. This is because the 6-year-old dummy's upper legs are two inches longer than those of the three-year-old dummy. AAMA has not demonstrated a need to increase the knee excursion limit for child booster seats tested with the 6-year-old dummy.

## VI. Corrections

### a. Metrication

Cosco pointed out several errors or omissions in the rule. One error concerned metrication, with regard to Standard 213's limits on head excursion (S5.1.3.1(a)). Prior to the amendment, Standard 213 specified a head excursion limit of 32 inches, as measured from a point on the standard seat assembly. The rule converted this limit to 810 mm. Cosco said that in converting to the metric system, the rule changed the head excursion requirement for add-on restraints from 32 inches to 31.89 inches, and thus made the requirement more stringent. In answer to this comment, NHTSA did not intend to reduce allowable head excursion. Thus, S5.1.3.1(a) will be corrected to specify a head excursion limit of 813 mm. Mr. Louis Sokol suggested editorial corrections to various references to centigrade. NHTSA has made these corrections to S6.1.1(d), S9.2 and S9.3.

### b. Labeling

Cosco petitioned for NHTSA to reconsider various aspects of the labeling requirements adopted by the rule. The rule required manufacturers to use both English and metric units in their child seat labels, pertaining to the size of child for whom the restraint is recommended. Cosco suggested deleting the word "mass" before the metric unit, believing that this is unnecessary and will confuse consumers. NHTSA agrees the word "mass" is not necessary and will not require its use, although

manufacturers may use the word if they wish. Mr. Sokol was concerned that the rule did not specify whether manufacturers should specify their height recommendations in millimeters or centimeters, and suggested centimeters be used as more "user friendly." NHTSA is not specifying which unit should be used, but is allowing manufacturers to use any metric unit they feel is appropriate for the recommended height limits for their restraints. Cosco also suggested that the references to height on the child seat label include "between" and "less," as is currently required by Standard 213. This rule retains those words.

### c. Dummy Positioning

Another error that Cosco identified relates to the provisions for positioning the test dummies in a child seat in preparation for dynamic testing. Cosco said that, unlike current specifications that provide for the lowering of the 3-year-old dummy's arms and legs, the rule did not specify a similar provision for positioning the dummies used to test forward-facing child restraints. This rule corrects the oversight by adding a provision that provides for the rotating downwards of the dummies' arms and legs, when testing forward-facing child restraint systems. S10.2.1(c)(1)(ii), S10.2.2(d). This rule also corrects the procedure for positioning the test dummies in testing rear-facing child restraints (S10.2.1(c)(2) in the July 1995 rule). Paragraph S10.2.1(c)(2) should specify rotating just the dummy's arms, and not the legs. In addition, this rule clarifies the description of the sequence of events preparing for the dynamic test (S6.1.2).

### d. Dummy Selection

In both the preamble for the final rule and the June 1995 Final Regulatory Evaluation for the rule (entry number 001 in docket 74-09-N42), NHTSA indicated that if the range of children recommended by a child restraint's manufacturer includes any children with a mass more than 18 kg (40 lb), or a height of more than 1100 mm, the 6-year-old dummy will be used in the compliance testing of that restraint. (60 FR at 35133, 35134) However, the regulatory text implementing these provisions (S7.1(d)) inadvertently specified that the 3-year-old (33 lb) dummy will also be used to test these restraints. This error in S7.1(d) is corrected today.

## VII. Compliance Date

The compliance date for this rule (the date on which manufacturers must begin complying with the amendments)

is September 1, 1996. This date is the same compliance date as for the July 1995 final rule which today's rule amends. It is in the public interest for the compliance dates to be the same because most of the amendments made by today's rule correct or clarify provisions of the July 1995 rule. The only substantive changes made by today's rule are to amend S5.4.3.2 to permit manufacturers to produce belt-positioning seats with a mass of up to 4.4 kg (rather than limit the mass to 4 kg), and to provide them the optional use of the word "mass" in labeling child seats. This rule does not impose new requirements on manufacturers.

NHTSA is providing manufacturers the option of voluntarily complying with the amendments made by today's rule before September 1, 1996. Manufacturers may comply with today's amendments beginning 30 days after the date of publication of this rule without violating any provision in Standard 213 or 49 U.S.C. 30101 *et seq.* This accords with an earlier decision by NHTSA to permit manufacturers the option of voluntarily complying with the requirements adopted by the July 1995 final rule before the September 1 mandatory compliance date. Since January 3, 1996, manufacturers could choose to voluntarily meet the requirements of the July 1995 rule in lieu of the current requirements in Standard 213. (See NHTSA's clarification of compliance date, 61 FR 4938, February 9, 1996.)

## VII. 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." The agency has considered the impacts of this rulemaking action and has determined that this action is not "significant" within the meaning of the Department of Transportation's regulatory policies and procedures. NHTSA has further determined that the effects of this rulemaking are so minimal that preparation of a full preliminary regulatory evaluation is not warranted. The agency believes that manufacturers will be minimally affected by this rulemaking because the main substantive change it makes to the July 1995 final rule is to amend S5.4.3.2. That change, in effect, permits belt-positioning seats to have a mass of up to 4.4 kg, rather than limit the mass to 4 kg. The agency believes the effect of this is minimal because there appears to be only one manufacturer, Gerry Baby

Products, that is affected by this change. Further, the amendment will affect just one product made by Gerry. Gerry manufactures different types of child restraint systems, only one of which is the belt-positioning booster. The agency thus concludes that this rule will have a minimal effect on the manufacture of child restraints generally, including Gerry's restraints.

#### *b. Regulatory Flexibility Act*

NHTSA has considered the effects of this rulemaking action under the Regulatory Flexibility Act. I hereby certify that it will not have a significant economic impact on a substantial number of small entities. The agency knows of 13 manufacturers of child restraints, seven of which NHTSA considers to be small businesses (including Kolcraft, which with an estimated 500 employees, is on the borderline of being a small business). This number does not constitute a substantial number of small entities. Regardless of this number, NHTSA does not believe this rule will have a significant impact on small businesses, since the only substantive amendment made by this rule is to permit belt-positioning seats to have a mass of up to 4.4 kg, rather than limit the mass to 4 kg. The effect of this is minimal because to the agency's knowledge, there is only one manufacturer that is affected by this change. Further, the amendment will affect just one product made by that manufacturer. Since the amendment is permissive in nature, there are no costs associated with it. This rule clarifies labeling requirements and slightly revises the wording of the labels. Manufacturers will incur some costs in changing the labels on their child seats, but because the wording changes are minimal, those costs should be negligible. Accordingly, the agency has not prepared a regulatory flexibility analysis.

#### *c. Executive Order 12612 (Federalism)*

This rulemaking action has been analyzed in accordance with the principles and criteria contained in Executive Order 12612, and the agency has determined that this rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

#### *d. National Environmental Policy Act*

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

#### *e. Paperwork Reduction Act*

This final rule includes new "collections of information" as that term is defined by the Office of Management and Budget (OMB). For Standard 213, OMB has previously approved a collection of information (OMB Control Number 2127-0511 "Child Restraint Systems—49 CFR 571.213") for use through August 31, 1996. NHTSA is preparing a request for an extension of this collection of information approval for an additional three years, and will include in the request, an estimate of the new collection of information burden resulting from this final rule. In the near future, NHTSA expects to issue a Federal Register document asking for public comment on the request for extension of OMB Control Number 2127-0511.

Pursuant to the Paperwork Reduction Act of 1995 and OMB's regulations at 5 CFR section 1320.5(b)(2), NHTSA informs the potential persons who are to respond to the collection of information that such persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. The currently valid OMB control number is displayed above and in NHTSA's regulations at 49 CFR Part 509, *OMB Control Numbers for Information Collection Requirements*.

#### *f. Executive Order 12778 (Civil Justice Reform)*

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

#### List of Subjects in 49 CFR Part 571

Imports, Motor vehicle safety, Motor vehicles.

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

### **PART 571—FEDERAL MOTOR VEHICLE SAFETY STANDARDS**

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

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

2. Section 571.213 is amended by—

a. revising S5.1.3.1(a), the introductory paragraph of S5.4.3.2, S5.5.2(f), S5.5.5(f), S6.1.1(d), S6.1.2(b) through (f), removing S6.1.2(g), revising S7.1(d), S9.2, S9.3, S10.2.1(c)(1), S10.2.1(c)(2),

b. adding S10.2.2(d), to read as follows:

#### **§ 571.213 Standard No. 213, Child Restraint Systems.**

\* \* \* \* \*

##### **S5.1.3.1 \* \* \***

(a) In the case of an add-on child restraint system, no portion of the test dummy's head shall pass through a vertical, transverse plane that is 813 mm forward of point Z on the standard seat assembly, measured along the center SORL (as illustrated in figure 1B), and neither knee pivot point shall pass through a vertical, transverse plane that is 915 mm forward of point Z on the standard seat assembly, measured along the center SORL.

\* \* \* \* \*

S5.4.3.2 *Direct restraint.* Except for a child restraint system whose mass is less than 4.4 kg, each belt that is part of a child restraint system and that is designed to restrain a child using the system and to attach the system to the vehicle, and each Type I and lap portion of a Type II vehicle belt that is used to attach the system to the vehicle shall, when tested in accordance with S6.1, impose no loads on the child that result from the mass of the system, or

\* \* \* \* \*

##### **S5.5.2 \* \* \***

(f) One of the following statements, inserting the manufacturer's recommendations for the maximum mass and height of children who can safely occupy the system, except that booster seats shall not be recommended for children whose masses are less than 13.6 kg:

(1) This infant restraint is designed for use by children who weigh \_\_\_\_\_ pounds (\_\_\_\_\_ kg) or less and whose height is (*insert values in English and metric units; use of word "mass" in label is optional*) or less; or

(2) This child restraint is designed for use only by children who weigh between \_\_\_\_\_ and \_\_\_\_\_ pounds (*insert appropriate metric*

values; use of word "mass" is optional) and whose height is (insert appropriate values in English and metric units) or less and who are capable of sitting upright alone; or

(3) This child restraint is designed for use only by children who weigh between \_\_\_\_\_ and \_\_\_\_\_ pounds (insert appropriate metric values; use of word "mass" is optional) and whose height is between \_\_\_\_\_ and \_\_\_\_\_ inches (insert appropriate values in English and metric units).

\* \* \* \* \*

#### S5.5.5 \* \* \*

(f) One of the following statements, inserting the manufacturer's recommendations for the maximum mass and height of children who can safely occupy the system, except that booster seats shall not be recommended for children whose masses are less than 13.6 kg:

(1) This infant restraint is designed for use by children who weigh \_\_\_\_\_ pounds (\_\_\_\_\_ kg) or less and whose height is (insert values in English and metric units; use of word "mass" in label is optional); or

(2) This child restraint is designed for use only by children who weigh between \_\_\_\_\_ and \_\_\_\_\_ pounds (insert appropriate metric values; use of word "mass" is optional) and whose height is (insert appropriate values in English and metric units) or less and who are capable of sitting upright alone; or

(3) This child restraint is designed for use only by children who weigh between \_\_\_\_\_ and \_\_\_\_\_ pounds (insert appropriate metric values; use of word "mass" is optional) and whose height is between \_\_\_\_\_ and \_\_\_\_\_ inches (insert appropriate values in English and metric units).

\* \* \* \* \*

#### S6.1.1 \* \* \*

(d) Performance tests under S6.1 are conducted at any ambient temperature from 19 °C to 26 °C and at any relative humidity from 10 percent to 70 percent.

\* \* \* \* \*

#### S6.1.2 \* \* \*

(b) Select any dummy specified in S7 for testing systems for use by children of the heights and weights for which the system is recommended in accordance with S5.5. The dummy is assembled, clothed and prepared as specified in S7 and S9 and Part 572 of this chapter, as appropriate.

(c) Place the dummy in the child restraint. Position it, and attach the child restraint belts, if appropriate, as specified in S10.

(d) Belt adjustment.

(1) *Add-on systems other than belt-positioning seats.*

(i) If appropriate, shoulder and pelvic belts that directly restrain the dummy shall be adjusted as follows: Tighten the belts until a 9 N force applied (as illustrated in figure 5) to the webbing at the top of each dummy shoulder and to the pelvic webbing 50 mm on either side of the torso midsagittal plane pulls the webbing 7 mm from the dummy.

(ii) All Type I belt systems used to attach an add-on child restraint system to the standard seat assembly, and any provided additional anchorage belt (tether), are tightened to a tension of not less than 53.5 N and not more than 67 N, as measured by a load cell used on the webbing portion of the belt.

(2) *Add-on belt-positioning seats.*

(i) The lap portion of Type II belt systems used to attach the child restraint to the standard seat assembly is tightened to a tension of not less than 53.5 N and not more than 67 N, as measured by a load cell used on the webbing portion of the belt.

(ii) The shoulder portion of Type II belt systems used to restrain the dummy is tightened to a tension of not less than 9 N and not more than 18 N, as measured by a load cell used on the webbing portion of the belt.

(3) *Built-in child restraint systems.*

(i) The lap portion of Type II belt systems used to secure a dummy to the built-in child restraint system is tightened to a tension of not less than 53.5 N and not more than 67 N, as measured by a load cell used on the webbing portion of the belt.

(ii) The shoulder portion of Type II belt systems used to secure a child is tightened to a tension of not less than 9 N and not more than 18 N, as measured by a load cell used on the webbing portion of the belt.

(iii) If provided, and if appropriate to attach the child restraint belts under S10, shoulder (other than the shoulder portion of a Type II vehicle belt system) and pelvic belts that directly restrain the dummy shall be adjusted as follows: Tighten the belts until a 9 N force applied (as illustrated in figure 5) to the webbing at the top of each dummy shoulder and to the pelvic webbing 50 mm on either side of the torso midsagittal plane pulls the webbing 7 mm from the dummy.

(e) Accelerate the test platform to simulate frontal impact in accordance with Test Configuration I or II, as appropriate.

(f) Determine conformance with the requirements in S5.1.

S7.1 \* \* \*

(d) A child restraint that is recommended by its manufacturer in accordance with S5.5 for use either by children in a specified mass range that includes any children having a mass greater than 18 kg, or by children in a specified height range that includes any children whose height is greater than 1100 mm, is tested with a 6-year-old child dummy conforming to part 572 subpart I.

\* \* \* \* \*

S9.2 *Preparing clothing.* Clothing other than the shoes is machined-washed in 71 °C to 82 °C and machine-dried at 49 °C to 60 °C for 30 minutes.

S9.3 *Preparing dummies.* Before being used in testing under this standard, dummies must be conditioned at any ambient temperature from 19 °C to 25.5 °C and at any relative humidity from 10 percent to 70 percent for at least 4 hours.

#### S10.2.1 \* \* \*

(c)(1)(i) When testing forward-facing child restraint systems, extend the arms of the 9-month-old test dummy as far as possible in the upward vertical direction. Extend the legs of the 9-month-old dummy as far as possible in the forward horizontal direction, with the dummy feet perpendicular to the centerline of the lower legs. Using a flat square surface with an area of 2,580 square mm, apply a force of 178 N, perpendicular to:

(A) The plane of the back of the standard seat assembly, in the case of an add-on system, or

(B) The back of the vehicle seat in the specific vehicle shell or the specific vehicle, in the case of a built-in system, first against the dummy crotch and then at the dummy thorax in the midsagittal plane of the dummy. For a child restraint system with a fixed or movable surface described in S5.2.2.2, which is being tested under the conditions of test configuration II, do not attach any of the child restraint belts unless they are an integral part of the fixed or movable surface. For all other child restraint systems and for a child restraint system with a fixed or movable surface which is being tested under the conditions of test configuration I, attach all appropriate child restraint belts and tighten them as specified in S6.1.2. Attach all appropriate vehicle belts and tighten them as specified in S6.1.2. Position each movable surface in accordance with the instructions that the manufacturer provided under S5.6.1 or S5.6.2.

(ii) After the steps specified in paragraph (c)(1)(i) of this section, rotate each dummy limb downwards in the plane parallel to the dummy's

midsagittal plane until the limb contacts a surface of the child restraint system or the standard seat assembly, in the case of an add-on system, or the specific vehicle shell or specific vehicle, in the case of a built-in system, as appropriate. Position the limbs, if necessary, so that limb placement does not inhibit torso or head movement in tests conducted under S6.

(2) When testing rear-facing child restraints, position the newborn and 9-month-old dummy arms vertically upwards and then rotate each arm downward toward the dummy's lower body until the arm contacts a surface of

the child restraint system or the standard seat assembly in the case of an add-on child restraint system, or the specific vehicle shell or the specific vehicle, in the case of a built-in child restraint system. Ensure that no arm is restrained from movement in other than the downward direction, by any part of the system or the belts used to anchor the system to the standard seat assembly, the specific shell, or the specific vehicle.

S10.2.2 \* \* \*

(d) After the steps specified in paragraph (c) of this section, rotate each dummy limb downwards in the plane parallel to the dummy's midsagittal

plane until the limb contacts a surface of the child restraint system or the standard seat assembly, in the case of an add-on system, or the specific vehicle shell or specific vehicle, in the case of a built-in system, as appropriate. Position the limbs, if necessary, so that limb placement does not inhibit torso or head movement in tests conducted under S6.

Issued on June 13, 1996.

Ricardo Martinez,

*Administrator.*

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