DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA-2014-0109; Notice 2]

RECARO Child Safety, LLC, Denial of Petition for Decision of Inconsequential Noncompliance

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

ACTION: Denial of Petition.

SUMMARY: RECARO Child Safety, LLC (Recaro) determined that certain Recaro child restraints do not fully comply with the system integrity requirements of paragraph S5.1.1(a) of Federal Motor Vehicle Safety Standard (FMVSS) No. 213, *Child Restraint Systems*. Recaro filed an appropriate report, pursuant to 49 CFR part 573, *Defect and Noncompliance Responsibility and Reports,* that was received by NHTSA on July 30, 2014. Recaro also submitted a petition for an exemption from the notification and remedy requirements of 49 U.S.C. Chapter 301 on the basis of the petitioner's belief that this noncompliance is inconsequential to motor vehicle safety. NHTSA published a notice of receipt of the petition and requested comment on the petition. After

consideration of Recaro's analysis and other information, NHTSA has decided to deny the petition.

ADDRESSES: For further information on this decision contact Zachary Fraser, Office of Vehicle Safety Compliance, the National Highway Traffic Safety Administration (NHTSA), telephone (202) 366-5754, facsimile (202) 366-5930.

SUPPLEMENTARY INFORMATION:

I. Overview: Pursuant to 49 U.S.C. 30118(d) and 30120(h) (see implementing rule at 49 CFR part 556), Recaro submitted a petition for an exemption from the notification and remedy requirements of 49 U.S.C. Chapter 301 on the basis of the petitioner's belief that this noncompliance is inconsequential to motor vehicle safety.

Notice of receipt of the petition was published, with a 30-day public comment period, on November 21, 2014 in the Federal Register (79 FR 69551). Comments were received, from an individual, Sean Stewart, and from Advocates for Highway and Auto Safety (Advocates). Both commenters opposed the petition. Mr. Stewart believes that child restraint manufacturers should be required to meet the applicable requirements in FMVSS No. 213 regardless of the manufacturer's instructions and warnings. Advocates believes that "the reasons provided by RECARO fail to justify determining that the non-compliance is inconsequential." To view the petition, the comments, and all supporting

documents, log onto the Federal Docket Management System (FDMS) website at: http://www.regulations.gov/. Follow the online search instructions to locate docket number "NHTSA-2014-0109."

II. Child Restraints Involved: Affected are approximately 78,339 Recaro ProRIDE child restraints manufactured between April 9, 2010 and July 8, 2014, and approximately 42,303 Recaro Performance RIDE child restraints manufactured between January 15, 2013 and July 8, 2014.

III. Noncompliance: Recaro explains that the subject child restraints do not comply with the system integrity requirements of FMVSS No. 213, paragraph S5.1.1(a), when subjected to the dynamic test requirements of FMVSS No. 213 S6.1. During NHTSA's compliance tests with the Hybrid II six-year-old child dummy and the Hybrid III weighted six-year-old child dummy connected to the child restraints with the internal harness and the child restraints attached to the test bench with a lap belt and top tether, the tether belt separated at the attachment point to the child restraints. The top tether belt separation exhibited a complete separation of a load bearing structural element. Therefore, the child restraints do not comply with the requirements set forth in FMVSS No. 213 S5.1.1(a).[1]

[1] Petitioner informed NHTSA that production and distribution of the subject child restraints affected by the noncompliance were corrected effective July 9, 2014.

IV. Rule Text: Paragraph S5.1.1 of FMVSS No. 213 requires, in pertinent part:

> S5.1.1 Child restraint system integrity. When tested in accordance with S6.1, each child restraint system shall meet the requirements of paragraphs (a) through (c) of this section.
>
> (a) Exhibit no complete separation of any load bearing structural element and no partial separation exposing either surfaces with a radius of less than 1/4 inch or surfaces with protrusions greater than 3/8 inch above the immediate adjacent surrounding contactable surface of any structural element of the system.
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> * * *

Under S6.1 of FMVSS No. 213, NHTSA tests child restraints with a child test dummy selected for use in accordance with the provisions of S7 of the standard. Under S7, the selection is based on the heights and weights of the children for whom the child restraint is sold. Under S7.1.2(d), NHTSA uses the Hybrid II (HII) or Hybrid III (HIII) six-year-old child test dummy to test CRSs recommended for children with masses greater than 18 kg (40 lb). Under S7.1.2(e), NHTSA uses the HIII weighted six-year-old child test dummy to test CRSs for children with masses above 22.7 kg (50 lb). The children for whom Recaro sold the subject CRSs included children with masses from 18 kilograms (kg) (40 pounds (lb)) to 30 kg (65 lb). Thus, under FMVSS No. 213, Recaro's child restraints were required to meet the child restraint system integrity requirements of FMVSS No. 213 when

tested with the six-year-old and weighted six-year-old test dummies.[2]

V. Summary of Recaro's Position: Recaro believes that the subject noncompliance is inconsequential to motor vehicle safety for the following reasons.

A) Recaro believes that the FMVSS No. 213 test procedure "is a direct violation of the instructions and warnings included with each ProRIDE and Performance RIDE child restraint and would constitute a misuse of the child restraint by the consumer." Petitioner refers to page 36 of the ProRIDE/Performance RIDE instruction manuals and states that Recaro designed and tested the ProRIDE/Performance RIDE child restraints "to meet FMVSS requirements when tested according to the instruction manual." Recaro highlights a statement on page 36 that states: "Additionally, LATCH and top tether anchors are designed to a maximum limit which can vary by vehicle. Due to this variation, RECARO requires use of the vehicle seat belt for any child weighing more than 52 lbs (23.6 kg)."[3] Petitioner states that installation in accordance with the instruction manuals decreases the likelihood of top tether anchor failure from the vehicle. Recaro states that it has limited lower anchor and top

[2] The six-year-old dummy weighs approximately 47 lb and the weighted six-year-old dummy weighs approximately 62 lb.

[3] "LATCH" refers to Lower Anchors and Tethers for Children, an acronym developed by manufacturers and retailers to refer to the child restraint anchorage system required by FMVSS No. 225, "Child restraint anchorage systems," for installation in motor vehicles. [Footnote not in text.]

tether use for the ProRIDE/Performance RIDE since the inception of the RIDE platform, and recently lowered the LATCH limit to 45 pounds from the previously stated 52 pounds to meet current FMVSS No. 213 requirements. Recaro also mentions that "NHTSA noted in its' [sic] 2012 FMVSS 213 Final Rule response, limitations were added to the lower anchors to 'prevent lower LATCH anchor loads from exceeding their required strength level specified in FMVSS 225.'" Recaro states that it "used this same rationale when they developed the RIDE platform in 2010 and concluded that a load limit of 52 pounds would be the safest for consumers."

B) Recaro states that "post-crash structural integrity of the occupant compartment is more insignificant to safety when compared to the injury values and excursion data gathered from testing." Petitioner also states that "technology has shown repeatedly that collapse, breakage, and crumpling of material minimizes energy and increases the rate of survival for the occupant in the event of a collision." Recaro believes that child restraint technology has fallen in-line with vehicle technology in recent years and that other child restraints have been designated "compliant" even though their convertible shell-to-base connection has been designed to crack and break during the peak loading in a crash. Recaro further states that the top tether webbing has been designed to rip and break apart under

extreme loads to allow the deceleration time to increase for the occupant in the crash event. Petitioner states that, "As long as the injury criterion meets industry standards, controlled breakage has proven multiple times to be a positive outcome in the event of a vehicle crash, as seen in the RIDE platform."

C) Recaro states that the "2013 LATCH Manual" published by Safe Ride News Publication "confirms that top tether anchors in vehicles are becoming limited more frequently in the weight to which they can be subjected." Recaro argues that "a majority of vehicles on the road instruct consumers to use top tether with load limit restrictions that align with RECARO's top tether load limit of 65 pounds minus the 20 pound weight of the child restraint equaling a 45 pound load limit." Recaro also refers to documents NHTSA placed in Docket No. NHTSA-2011-0176 regarding a 2012 final rule amending FMVSS No. 213 (77 FR 11626, February 27, 2012). Petitioner believes that the documents "give validation to the reasoning by RECARO to limit the use of the top tether."

D) Recaro states that it is aware that NHTSA has a clear precedent of denying child restraint manufacturers' petitions for inconsequential noncompliance concerning top tether separation. However, Recaro believes that "the environment in which those decisions were made has changed." Recaro claims that the methodology it uses to limit top tether loads actually

increases safe installations of child restraints by limiting the pounds of force applied and decreasing the chance tether anchor load failures. Recaro also believes that in the event of tether separation, the increase to risk of safety is non-existent because the head excursion limits were not exceeded in NHTSA's compliance tests. Petitioner indicates that the risk of the subject child restraints impacting objects in the vehicle is identical to, or better than, other compliant child restraints because both restraints meet the same head excursion requirements.

Recaro states that in a previous denial of a petition for inconsequential noncompliance, NHTSA noted that if it granted the petition it would be contradictory to NHTSA's mission to promote greater use of LATCH and tether. Recaro believes that this reasoning is no longer relevant because in the aftermath of the February 2012 final rule, "consumers are now more aware of the variation of tether load limits by vehicle manufacturers and consumers are also now becoming accustomed to reviewing limits to the LATCH system. This falls in line with the information and limits in the owner's manual provided with the ProRIDE and Performance RIDE."

E) Recaro states that its accident reports for the four years that the subject restraints have been on the market indicate no incidents of separation in the tether anchorage

area. Petitioner surmises the reason that tether separation occurs in testing is due to an outdated test bench seat and testing apparatus.

In summation, Recaro believes that the described noncompliance of the subject child restraints is inconsequential to motor vehicle safety, and that its petition to exempt Recaro from providing recall notification of noncompliance, as required by 49 U.S.C. 30118, and remedying the recall noncompliance, as required by 49 U.S.C. 30120, should be granted.

VI. NHTSA Decision:

NHTSA's Analysis: NHTSA has reviewed Recaro's analysis and has decided that the subject ProRIDE and Performance RIDE restraints' noncompliance is not inconsequential to motor vehicle safety.

We will now specifically address each of Recaro's arguments in the order presented in its petition.

A) Recaro first characterizes NHTSA's installation of the ProRIDE and Performance RIDE with a top tether as "a direct violation of the instructions and warnings…and would constitute a misuse" condition. The petitioner's reasoning is unpersuasive. Recaro apparently argues (the petitioner's arguments are unclear) that NHTSA should not have tested the child restraints attached to the test seat assembly with a lap belt and tether because the manufacturer instructs consumers to

use the "vehicle seat belt for any child weighing more than 52 lbs (23.6 kg)." The petitioner is unclear but we surmise that Recaro is saying that because it instructs users not to use the top tether with children weighing more than 52 lb, NHTSA's tethering the CRS was in error.

This view constitutes an incorrect reading of FMVSS No. 213. FMVSS No. 213 requires that the ProRIDE/Performance RIDE meet FMVSS No. 213's dynamic test requirements when installed as specified by the standard. Recaro recommended (marketed) the ProRIDE/Performance RIDE child restraints for children with masses from 18 kg (40 lb) to 30 kg (65 lb). Under FMVSS No. 213, child restraints sold for children in this mass range are required to meet the standard's performance requirements, including the system integrity requirements, when tested with the six-year-old and weighted six-year-old test dummies. These test dummies represent the children for whom the child restraint is sold, and are used by NHTSA to assess the performance of the child restraint in protecting children intended for the restraint. If a top tether is necessary to meet FMVSS No. 213's 720 millimeter (mm) (28 inch) head excursion requirement,[4] the tether is attached when dynamically testing the CRS with those test dummies.[5] The standard seeks to test CRSs as consumers would

[4] S5.1.3.1(a)(1).
[5] Table to S5.1.3.1(a), S6.1.2(a)(1)(i)(A).

use the CRSs in the real world. There is no provision in FMVSS No. 213 that enables manufacturers to exclude themselves from the requirements of the standard by way of "fine print" or other restrictions in instruction manuals.

If Recaro did not wish to have its child restraints tested with the six-year-old and weighted six-year-old test dummies in the tethered condition, the manufacturer could have recommended its CRSs for children weighing up to 18 kg (40 lb), not 30 kg (65 lb). Since Recaro marketed the CRS as suitable for children over 18 kg (40 lb), the manufacturer is responsible for ensuring that its CRSs meet all the requirements of FMVSS No. 213 when tested as specified by FMVSS No. 213, and cannot absolve itself of those responsibilities by using its instruction manual to limit NHTSA's assessment of the CRS in a compliance test.

Mr. Stewart states in his comment opposing the petition that, "If a manufacturer is allowed to bypass FMVSS 213 standards simply by mandating or prohibiting certain actions in the instruction manual, what is the point of having standards?" NHTSA concurs with the commenter that FMVSS No. 213's effectiveness would be substantially diminished if manufacturers were generally permitted to bypass the standard's requirements simply by mandating or prohibiting certain actions in the instruction manual.

The ProRIDE/Performance RIDE demonstrated structural integrity failure when the top tether belt separated at the attachment point to the child restraints. The top tether belt separation exhibited a complete separation of a load bearing structural element and therefore does not comply with the requirements set forth in paragraph S5.1.1(a) of FMVSS No. 213. Failure of a child restraint system in this manner increases the likelihood of head injury to the occupant, which is not insignificant or inconsequential to safety.

B) NHTSA does not agree with Recaro's line of reasoning that its petition should be granted because "technology has shown repeatedly that collapse, breakage, and crumpling of material minimizes energy and increases the rate of survival for the occupant in the event of a collision." The agency has consistently viewed tether strap separation in FMVSS No. 213 sled tests as a load bearing structural failure. A portion of the load of the child restraint and dummy is transferred to the vehicle by the top tether. A tether attachment failure in a compliance sled test indicates that the minimum level of occupant protection established by FMVSS No. 213 has not been provided.

In requiring the upper tether anchorage on vehicles and the tether strap on CRSs, NHTSA noted that, "Test data show that an attached tether substantially improves the ability of a child

restraint to protect against head impacts in a crash."[6] NHTSA does not agree with Recaro's assertion that the failure of the top tether demonstrates a design to allow tether breakage in order to mitigate crash forces and reduce the likelihood of injury to children. Rather, NHTSA believes that the total separation of the top tether, as seen in the Recaro compliance tests, demonstrates a failure of the load bearing element (top tether) to control forward motion of the dummy and, therefore, a liability in the child restraint that increases the potential for injury to children in real world crashes.

In its comment, Advocates states that—

> The damage to the child restraints in this case is unrelated to controlled breakage, of the RECARO restraint. For one thing, RECARO does not assert that the complete separation of the upper tether was a planned design feature of the child restraint. In addition, many other manufacturers have made use of controlled breakage techniques while still meeting all federal regulations. In this case, the failure of the top tether was not planned and its failure mode is not compliant with federal regulation. The consequences of unplanned, uncontrolled complete separation of a load bearing structural element are unknown and can be significantly dangerous if the failure leads to components becoming projectiles in the vehicle or if the failure induces a shock load to other load bearing structural elements.

NHTSA concurs with Advocates' observation that the ripping out of the top tether on the Recaro CRSs was likely an

[6] 64 FR 10786, 10802; March 5, 1999.

unplanned, uncontrolled event, far from a sought-after engineering feat of child restraint technology.

Moreover, FMVSS No. 213 does recognize the role that purposeful breakage in child restraint design can have in improving energy absorption performance. However, such breakage is and must be limited by the standard. S5.1.1 permits partial separations that do not result in sharp edges that may contact an occupant. Breakage of the CRS such as that demonstrated by the Recaro child restraints demonstrates a lack of system integrity and is prohibited by S5.1.1, FMVSS No. 213.

We disagree with Recaro's statement that "post-crash structural integrity of the occupant compartment is more insignificant to safety when compared to the injury values and excursion data gathered from testing." Each of the requirements in FMVSS No. 213 addresses a safety need. The commenters address this issue well. Advocates states: "NHTSA specifically included the prohibition against complete separation of any load bearing structural element specifically because the dangers associated with this occurrence were not addressed by the injury criteria alone." Mr. Stewart observes: "If a seat breaks in half during testing but the dummy records lower injury measurement does the manufacturer get away with claiming that they designed it to break in half on purpose--as a way to manage energy?" Child restraints must be able to hold together in a crash and

safely manage the crash forces on the child occupant. To accomplish this, all requirements of the standard must be met.

We further note that the weighted six-year-old child test dummy is not instrumented and is not used to measure injury values and excursion limits when testing CRSs under FMVSS No. 213.[7] Accordingly, the structural integrity requirement is especially pertinent in assessing the crash performance of the subject Recaro child restraints when used with children weighing above 22.7 kg (50 lb), since that is the only dynamic performance requirement that applies to the CRSs. Failure to comply with the requirement is not inconsequential to safety.

NHTSA has taken enforcement action for similar failures. In 2001, the agency notified Britax Child Safety, Inc., (Britax) of a potential noncompliance due to the detachment of a tether strap during dynamic testing of one of its child restraint models. Britax initiated a recall campaign to provide owners of the affected model with repair kits. In 2007, the agency notified Britax of a potential noncompliance due to the tether hook opening during dynamic testing of one of its child restraint models. Britax initiated a recall campaign to provide owners of the affected model with new tether hooks.

C) The materials cited by the petitioner have no bearing on the merits of Recaro's petition. As explained above in NHTSA's

[7] See S5(d) of FMVSS No. 213.

response to Recaro's first argument, FMVSS No. 213 requires that the ProRIDE and Performance RIDE child restraints meet the structural integrity requirements when installed with the top tether. NHTSA does not know of any current material published on use of child restraint top tethers that supports not using the child restraint's top tether.

D) Recaro's statement that "the environment in which [previous denials of inconsequentiality petitions on tether failures] were made has changed" is incorrect. NHTSA does not know of any current material published on use of child restraint top tethers that supports not using the child restraint's top tether. Moreover, granting the petition would be contradictory to NHTSA's mission to promote greater use of the top tether.

E) The shortcoming in Recaro's design to meet the applicable FMVSS No. 213 dynamic test requirements poses an unacceptable safety risk. The risk exists and is unacceptable even if there has been no incident of separation in the tether anchorage area thus far.[8] NHTSA does not agree that the tether separation occurs in testing due to the testing equipment[9] but rather as a shortcoming in Recaro's design to meet the applicable FMVSS No. 213 dynamic test requirements.

[8] If in fact consumers are not using the tether with children over 52 lb in accordance with Recaro's instructions, then it follows that there would not be reports of tether failure. However, the children would not be benefiting from use of the tether in a crash. Recaro should have designed its restraints such that they could meet the structural integrity requirement when tethered, to afford the children the benefits of a structurally sound CRS and the benefits of the tether.

[9] No data or information was submitted by the petitioner to support this claim.

NHTSA'S Decision: In consideration of the foregoing, NHTSA has decided that the ProRIDE and Performance RIDE's noncompliance poses a risk to safety and is therefore not inconsequential. Recaro has not met its burden of persuasion that the FMVSS No. 213 noncompliance identified in Recaro's noncompliance information report is inconsequential to motor vehicle safety. Accordingly, Recaro's petition is hereby denied and Recaro is obligated to provide notification of, and a remedy for, that noncompliance under 49 U.S.C. 30118 and 30120.

Authority: (49 U.S.C. 30118, 30120: delegations of authority at 49 CFR 1.95 and 501.8)

Frank S. Borris,
Acting Associate Administrator
for Enforcement.

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