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Columbus Trading-Partners USA, Inc.
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August 15, 2022

Via Electronic Mail

National Highway Traffic Safety Administration
Attn: Administrator
1200 New Jersey Avenue, S.E.
Washington, DC 20590
nhtsa.webmaster@dot.gov

RE: Columbus Trading-Partners USA, Inc., the US distributor for Cybex –
Petition for Reconsideration
49 CFR Part 571
Docket No. NHTSA-2022-0051
RIN 2127-AK95
Federal Motor Vehicle Safety Standards; Child Restraint Systems,
Child Restraint Systems—Side Impact Protection

Dear Administrator:

Columbus Trading-Partners USA, Inc., the US distributor for Cybex (“Cybex”), appreciates the National Highway Traffic Safety Administration (“NHTSA”) dedication and its development of rules for side impact testing of child restraints to further improve child passenger safety. Cybex appreciates the opportunity to assist NHTSA in the further development of these rules and submits the following Petition for Reconsideration discussing Cybex’s comments, questions, and proposed clarifications regarding FMVSS 213a.

The provisions addressed by Cybex and responses follow:

1. *S6.1.2 Dynamic Test Procedure...*

(1) Install the child restraint system using the child restraint anchorage system in accordance with the manufacturer's instructions provided with the child restraint system pursuant to S5.6 of Standard No. 213 (§ 571.213), except as provided in this paragraph. For forward-facing restraints, attach the tether strap, if provided, to the tether anchorage on the SISA. No supplemental device is used to install the child restraint system. Tighten belt systems of the lower anchorage attachments used to attach the restraint to the SISA sliding seat to any tension of not less than 53.5 Newtons and not more than 67 Newtons. Tighten the belt of the top tether attachment used to attach the restraint to the SISA sliding seat to any tension of not less than 45 Newtons and not more than 53.5 Newtons.

(2) For forward-facing and rear-facing child restraint systems, install the child restraint system using the Type II belt system in accordance with the manufacturer's instructions provided with the child restraint system pursuant to S5.6 of Standard No. 213 (§ 571.213), except as provided in this paragraph. For forward-facing restraints, attach the top tether strap, if provided, to the top tether anchorage on the SISA. For all child restraints, no supplemental device to install the child restraint system is used. Tighten the Type II belt used to attach the restraint to the SISA sliding seat to any tension of not less than 53.5 Newtons and not more than 67Newtons. Tighten the belt of the top tether attachment used to attach the forward-facing restraint to the SISA sliding seat to any tension of not less than 45 Newtons and not more than 53.5 Newtons. Rear-facing infant carriers with a detachable base shall only be tested using the base.

(3) For rear-facing restraints, install the child restraint system using only the lower anchorages of the child restraint anchorage system in accordance with the manufacturer's instructions provided with the child restraint system pursuant to S5.6 of Standard No. 213 (§ 571.213). No tether strap is used. No supplemental device is used to install the child restraint system. Tighten belt systems used to attach the restraint to the SISA sliding seat to any tension of not less than 53.5 Newtons and not more than 67 Newtons. Rear-facing infant carriers with a detachable base shall only be tested using the base.

No supplemental device is used to install the child restraint system.

Clarification Requested:

The means of installation, as indicated in S6.1.2, is defined as the method of attaching or securing the child restraint to the SISA. Attachment methods for 213a include lower anchorages, lower anchorages plus tether strap, Type II belt system, or Type II belt system plus tether strap. "No supplemental device is used to install the child restraint system." Existing interpretations of FMVSS 213 from former Chief Counsels have been published on belt tensioning bars, additional straps, and support legs which further define the installation and clarify "no supplemental devices." The Dynamic Test Procedure nor the interpretations provide guidance on other aspects of adjusting or use of a child restraint beyond "*in accordance with the manufacturer's instructions provided with the child restraint system.*" CYBEX would like additional clarification on S6.1.2. Is an adjustment to the child restraint that is specified in the manufacturer's instruction allowed to be made prior to or after securing the child restraint to the SISA? If a technology that is incorporated into the child restraint but unrelated to securing the child restraint to the standard test bench requires adjustment prior to or after installation to the SISA, is the adjustment allowed to be made prior to testing according to this supplemental device requirement?

Fixed, adjustable, and configurable technologies related to side impact have been incorporated into child restraint systems and are commonly available in the marketplace. Although these technologies are not related to installing or securing a child restraint to the SISA, clarification is sought on how these will be tested in future annual compliance test programs.

2. S9. Positioning the dummy and attaching the belts used to restrain the child within the child restraint system and/or to attach the system to the SISA sliding seat

S9.1 12-month-old dummy (CRABI) (49 CFR part 572, subpart R).

(a) When testing rear-facing child restraint systems, place the 12-month-old dummy in the child restraint system so that the back of the dummy torso contacts the back support surface of the system. Attach all appropriate child restraint belts used to restrain the child within the child restraint system and tighten them as specified in S6.1.2 of this standard. Attach all appropriate belts used to attach the child restraint system to the SISA sliding seat and tighten them as specified in S6.1.2.

...

(d) After the steps specified in paragraph (c), 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. Position the limbs, if necessary, so that limb placement does not inhibit torso or head movement in tests conducted under S6.

S9.2 3-year-old side impact dummy (Q3s) (49 CFR part 572, subpart W) in forward-facing child restraints.

S9.3 3-year-old side impact dummy (Q3s) (49 CFR part 572, subpart W) in rear-facing child restraints.

Clarification Requested:

FMVSS 213 allows the use of a forward restraining surface in lieu of a harness, however S9 does not consider child restraints that use a restraining surface to retain the occupant (e.g., shield restraint). CYBEX respectfully submits that this section requires amendment to clarify dummy positioning for these restraints. In addition, CYBEX requests clarification regarding limb placement. For example, S9.1 (d) requires that the "...limb placement does not inhibit torso or head movement in tests conducted under S6." In the image shown below,³ the arm of the dummy will interact with the side support surface of the child restraint and with the intruding door of the SISA. Would these interactions be considered inhibitions to the torso or head movement? If so, then what would be the allowable limb positioning procedure(s)?

Example of dummy arm placement in shield child restraint system



Thank you for your consideration of Cybex's comments and requests for clarification. Cybex would be happy to schedule a follow-up call to discuss this information and any questions you may have.

Best Regards,

DocuSigned by:
Jessica L. S. Kimes
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Jessica L.S. Kimes