

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

#### *b. Configuration of the Lower Bars*

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

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

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

not needed. Alternatively, the Alliance suggested that only one of the two LATCH bars in an outboard seating position need be limited, and that limit should be 50 mm.

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

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

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

Our answers are that we agree with the Alliance that the strength requirements of the standard obviate the need to specify that the anchorages are "integral and permanent." Thus, the words are deleted from the regulatory text. In response to Honda, anchorages that are bolted into the vehicle are acceptable, provided that they cannot be removed without the use of a tool, *e.g.*,

a screwdriver or wrench. Specifying that the bars are attached to the vehicle or vehicle seat such that they can only be removed by use of a tool, and specifying the type of tool, makes the requirement more objective while limiting how easily the bars can be removed.

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

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

##### *1. Rearward Force Application*

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

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