

(3,000 pound) moving deformable barrier. FMVSS No. 301 contains specifications for two 1,814 kilogram (4,000 pound) moving rigid barriers: a moving flat rigid barrier (Paragraphs S7.2 and S7.3), and a moving contoured rigid barrier (Paragraph S7.5). Both FMVSS No. 301 moving barriers are used to assess vehicle fuel system integrity. The FMVSS No. 301 moving flat rigid barrier is used for testing passenger cars, multipurpose passenger vehicles, trucks and buses with a gross vehicle weight rating (GVWR) of 4,536 kilograms (10,000 pounds) or less. The FMVSS No. 301 moving contoured rigid barrier is used for testing large school buses with a GVWR greater than 4,536 kilograms (10,000 pounds). The FMVSS No. 214 moving deformable barrier is used for side impact testing of passenger cars, and multipurpose passenger vehicles, trucks and buses with a GVWR of 2,722 kilograms (6,000 pounds) or less. G78-15 bias ply tires are currently specified for the FMVSS No. 301 barriers.<sup>1</sup>

The tire specifications for the FMVSS No. 214 moving barrier are not specified in FMVSS No. 214. Instead, S6.10 of FMVSS No. 214 incorporates by reference the moving barrier specified in 49 CFR part 587, subpart B, Side Impact Moving Deformable Barrier. The tire specifications for that barrier are contained in Drawing DSL-1278, Sheet 2 of 2, Item -11 and Note 8. Item -11 specifies "Bias belted tire (BF Goodrich—G78-15 CLM)." In October 1991, Note 8 was added to drawing DSL-1278 that states "Bias belted tire, size P215/75B15, may be substituted for that specified in -11. Inflate to recommended pressure."

## II. Summary of the Notice of Proposed Rulemaking (NPRM)

On October 10, 2001, the agency published a NPRM proposing amendments to FMVSS Nos. 214 and 301 to require radial tires of certain specifications and also proposing to delete certain outdated or inaccurate specifications for the moving barriers in FMVSS No. 301. (66 FR 51629, Docket No. NHTSA-01-10435). In that notice, NHTSA discussed several considerations regarding Mr. Stocke's petition.

First, the agency noted that with the increased use of the radial tire design

over the past 30 years in the U.S., the bias ply tire design had become virtually obsolete. Consequently, bias ply tires were not currently or readily available to testing laboratories and would become even more difficult for the laboratories to obtain in the future. Also, the agency noted that the SAE J972 Recommended Practice "Moving Rigid Barrier Collision Tests" now includes specifications for radial tires as well as for bias ply tires. Both P205/75R15 and P215/75R15 radial tires are readily available at present and are widely recommended for use by vehicle manufacturers on passenger cars, small passenger vans, and small sport utility vehicles.

Another consideration discussed by the agency was the potential effect on ride height (the height of the center of gravity) and vertical motion (bounce) of a moving barrier if tires different from those currently specified in FMVSS Nos. 214 and 301 were used on those barriers. Bias ply tires and radial tires are different in design and construction; therefore, they exhibit different performance characteristics. The radial construction creates a tread that is stiffer and a sidewall that is more flexible than that of a bias ply tire. These factors would affect the performance of moving barriers.<sup>2</sup>

In addition to discussing considerations arising out of the petition, the agency summarized related barrier tire research conducted by Ford Motor Company (Ford) and the revised SAE J972 Recommended Practice. After careful review of the study and the SAE Recommend Practice, NHTSA tentatively concluded that the P215/75R15 radial tire inflated to 221 kPa (32 psi) would be an appropriate alternative to the G78-15 bias ply tire for use on the FMVSS No. 214 moving deformable barrier and that the P205/75R15 tires inflated to 207 kPa (30 psi) would be appropriate for use on both moving rigid barriers specified in FMVSS No. 301.

As a result of these conclusions, NHTSA proposed specifying either P215/75R15 tires inflated to 221 kPa (32 psi) or P205/75R15 tires inflated to 207 kPa (30 psi) for use on FMVSS Nos. 214

<sup>2</sup> The moving barrier tests in FMVSS Nos. 214 and 301 specify a static barrier ride height, an important impact parameter measurement. Further, the Laboratory Test Procedure in FMVSS No. 214 provides a guideline for barrier vertical displacement. Because a radial tire has a lower profile and a more flexible sidewall than a bias ply tire, the use of radial tires, rather than bias ply tires, on the moving barriers specified in FMVSS Nos. 214 and 301 could affect the barrier ride height (the center of gravity height and/or barrier contact height). Additionally, if an improper tire inflation pressure is used, it may affect the barrier's vertical motion as it is being towed during the test.

and 301 moving barriers. NHTSA stated that it would pick one of these tires and specify it in the final rule for all moving barriers.

The agency also indicated that prior to making a final decision, the agency would assess the extent to which the substitution of a tire may have unintended effects on either (1) the ride height, or (2) the impact performance of the FMVSS Nos. 214 and 301 moving barriers. For example, in attempting to find a set of appropriate radial tires (tire size and inflation pressure) for use on the FMVSS No. 214 barrier, NHTSA expressed concern that a set of four incorrectly inflated tires could result in excessive barrier vertical motion during the towing process, which could have made it difficult to stay within the  $\pm 20$  mm (0.8 inch) vertical displacement guideline.<sup>3</sup> NHTSA solicited comments and laboratory test data concerning these matters.

In conjunction with the proposal, NHTSA proposed that the tread width specification be deleted from the tire specifications in FMVSS No. 301. The tread width specification for radial tires is unnecessary because the radial tire size designation is sufficient to define tread width.

Finally, the agency proposed that the moment of inertia specifications for the moving contoured barrier be removed from FMVSS No. 301 because, based on the current measurements, excepting the moments of inertia, the FMVSS No. 301 moving contoured barrier could be constructed to the barrier specifications with the dimensional drawings and the specified center of gravity. In addition, there are no moments of inertia specified for the FMVSS No. 301 moving flat barrier.

## III. Summary of Comments on the NPRM

NHTSA received comments on the October 2001 NPRM from General Motors North America (GM), Ford Motor Company (Ford), and Volkswagen (VW). The comments are summarized below.

All three commenters generally supported the amendments proposed in the NPRM.

With regard to tire-type and inflation pressure, GM commented that either tire-type proposed by the agency would be appropriate for use on FMVSS Nos. 214 and 301 moving barriers and

<sup>3</sup> To control the impact height in the impact test in FMVSS No. 214, NHTSA's Office of Vehicle Safety Compliance specifies a vertical displacement guideline of  $\pm 20$  mm (0.8 inch) in its Laboratory Test Procedure. (This guideline only applies to NHTSA contractors conducting FMVSS No. 214 side impact compliance tests.)

<sup>1</sup> Paragraph S7.5.4 of FMVSS No. 301 specifies G78-15 bias ply tires for use on the moving contoured rigid barrier. The requirements for the FMVSS No. 301 moving flat rigid barrier do not specify bias ply tires, but, in practice, the moving flat rigid barrier utilizes the identical under-structure and G78-15 bias ply tires as the moving contoured rigid barrier.