Department of Transportation

National Highway Traffic Safety Administration

[Docket No. NHTSA-2015-0122; Notice 2]

Van Hool N.V., Denial of Petition for Decision of Inconsequential Noncompliance

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

ACTION: Denial of Petition.

SUMMARY: Van Hool N.V. (Van Hool), has determined that certain model year (MY) 2015-2016 Van Hool Double Deck buses do not fully comply with paragraph S5.3.4 of Federal Motor Vehicle Safety Standard (FMVSS) No. 121, *Air Brake Systems*. Van Hool filed a report dated November 6, 2015, pursuant to 49 CFR part 573, *Defect and Noncompliance Responsibility and Reports*. Van Hool then petitioned NHTSA under 49 CFR part 556 requesting a decision that the subject noncompliance is inconsequential to motor vehicle safety.

ADDRESSES: For further information on this decision contact James Jones, Office of Vehicle Safety Compliance, the National Highway Traffic Safety Administration (NHTSA), telephone (202) 366-5294, 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), Van Hool submitted a petition for an exemption from the notification and remedy requirements of 49 U.S.C. Chapter 301 on the basis that this noncompliance is inconsequential to motor vehicle safety.

Notice of receipt of Van Hool's petition was published, with a 30-day public comment period, on January 22, 2016 in the Federal Register (81 FR 3861). No comments were received. To view the petition and all supporting documents log onto the Federal Docket Management Systems (FDMS) Web site at: http://www.regulations.gov/. Then follow the online search instructions to locate docket number "NHTSA-2015-0122."

II. Vehicles Involved: Affected are approximately 48 MY 2015-2016 Van Hool Double Deck buses that were manufactured between December 13, 2014 and October 22, 2015.

III. Noncompliance: Van Hool explains that the noncompliance is that brake release times slightly exceed the requirements as specified in paragraph S5.3.4 of FMVSS No. 121.

IV. Rule Text: Paragraph S5.3.4 of FMVSS No. 121 requires in pertinent part:

> S5.3.4 *Brake Release Time*. Each service brake system shall meet the requirements of S5.3.1 (a) and (b).
>
> S5.3.4.1(a) With an initial service brake chamber air pressure of 95 psi, the air pressure in each

> brake chamber shall, when measured from the first movement of the service brake control, fall to 5 psi in not more than 0.55 second in the case of trucks and buses; 1.00 second in the case of trailers, other than trailer converter dollies, designed to tow another vehicle equipped with air brakes; 1.10 seconds in the case of trailer converter dollies; and 1.20 seconds in the case of trailers other than trailers designed to tow another vehicle equipped with air brakes. A vehicle designated to tow another vehicle equipped with air brakes shall meet the above release time requirement with a 50-cubic-inch test reservoir connected to the control line output coupling. ...

V. Summary of Van Hool's Petition: Van Hool described the subject noncompliance and stated its belief that the noncompliance is inconsequential to motor vehicle safety based on the following reasoning:

(1) Based on the results of testing that Van Hool conducted on some of the affected buses, it determined that the brake release times, on average, exceeded the FMVSS No. 121 requirement by only 0.03 of a second on the front axle, by 0.05 of as second on the tag axle, and by 0.10 of a second on the drive axle.

(2) Van Hool determined that this noncompliance may be due to the change of fitting for this type of vehicle. These new fittings for the Double Deck buses were introduced in production in September 2014. The classic brass couplings were replaced with push-in tube connections made of composite material to remedy certain complaints of air

loss. The effect of minimal loss of internal air flow was misjudged, which caused the brake release time to exceed the requirements.

However, Van Hool believes that there is no safety issue, nor unnecessary brake drag during acceleration after brake release due to the reaction time of the driver (moving foot from brake pedal to throttle pedal) and the reaction time of the complete driveline being longer than the brake release time.

(3) Van Hool stated its belief that because the brake actuation time on the subject buses fulfilled the requirements as specified in paragraph S5.3.3 of FMVSS No. 121, that the noncompliance has no effect on the brake performance. Van Hool found that its testing showed a margin on the required brake actuation time of 11% for the front axle, 20% for the drive axle and 17% for the tag axle. For this reason Van Hool is convinced that the noncompliance will not show significant differences in dynamic brake test and will have no influence on the motor vehicle safety. Thus, Van Hool did not repeat the dynamic brake test. Also, the dynamic brake test was not repeated on any of the subject vehicles because Van Hool’s dynamic brake test showed a minimum 25% margin for the brake stopping distance requirement.

(4) Van Hool made reference to previous inconsequential noncompliance petitions that it believes are similar to its petition and that were granted by NHTSA.

Van Hool additionally informed NHTSA that the noncompliance has been corrected on vehicles in subsequent production and that all future vehicles will be in full compliance with FMVSS No. 121.

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

NHTSA'S DECISION:

Background: FMVSS No. 121 establishes performance and equipment requirements for motor vehicles equipped with air brake systems. Paragraph S5.3.4.1(a) of FMVSS No. 121, requires in pertinent part that; with an initial service brake chamber air pressure of 95 psi, the air pressure in each brake chamber shall, when measured from the first movement of the service brake control, fall to 5 psi in not more than 0.55 second in the case of trucks and buses. To minimize brake drag after brake release, this requirement limits the time for pressurized air to exhaust from

the service brake chamber after the brake pedal has been released.

Poor pneumatic timing could affect brake performance. For example, if a vehicle's wheels lock as the driver is attempting to stop, the vehicle will skid. If the driver is to regain control of the vehicle, immediate release of the brakes is necessary[1]. Additionally, poor pneumatic timing could cause the brakes to drag and cause premature wear of the brake linings. Under certain conditions, excessive brake drag could contribute to heat build-up within the foundation brake assembly resulting in degradation of braking power, particularly in cases in which the driver repeatedly applies the vehicle's brakes to reduce speed while traveling down an extended slope.

Van Hool produced buses that, on average, exceeded the FMVSS No. 121 requirement by 0.03s on the front axle, by 0.05s on the tag axle, and by 0.10s on the drive axle.

NHTSA's Analysis: Upon receipt and review of the petition, NHTSA sent a letter to Van Hool requesting test data, engineering analyses, simulations, etc. to support their claim that slower pneumatic release times do not adversely affect overall brake performance of subject noncompliant vehicles as a result of unnecessary brake drag after brake release [see Docket NHTSA-2015-0122].

[1] 56 FR 13785

In response, Van Hool provided data to demonstrate the performance of compliant vehicles when tested to the requirements of FMVSS No. 121 but failed to include any data or analyses to demonstrate the performance of non-compliant vehicles to those requirements.

Van Hool claimed that the noncompliance will not show significant differences in dynamic brake test [performance] and that dynamic testing on affected buses was not repeated for the following reasons;

(1) The brake actuation time on affected buses fulfilled the brake actuation timing requirements as specified in paragraph S5.3.3 of FMVSS No. 121 by a margin of 11% for the front axle, 20% for the drive axle and 17% for the tag axle;

(2) Dynamic brake tests on compliant buses showed a minimum 25% margin for the brake stopping distance requirement(s)

Van Hool also claimed that "testing according to FMVSS No. 121 wouldn't show a difference in heat build-up between a compliant and noncompliant bus."

Lastly, Van Hool stated that brake release timing has been the subject of previous petitions that it believes are similar to its petition and were granted by NHTSA. Thus, this petition should be granted.

NHTSA has concluded that Van Hool's claims are unsupported by any data or engineering analyses persuasive to grant the petition.

Certification test data Van Hool submitted in response to the letter indicated that brake release times for compliant buses were at the maximum limit of the safety standard's requirement of 0.55s in 3 of 5 tests of the front axles (i.e., Axle 1) and 2 of 5 tests of the drive axles (i.e., Axle 2) and tag axles (i.e., Axle 3), respectively[2]. The low margin of safety reflected in these test results, which were conducted as early as 2008, should have indicated to Van Hool that a corrective action to improve the performance of the braking system to achieve a more desirable margin of safety may have been warranted.

In previous petitions concerning brake release timing, NHTSA emphasized that only the failure of the subject vehicles was at issue. NHTSA concluded that, "the test data results and analyses were sufficient to grant the petition for the specific conditions that cause the subject vehicles to be out of compliance with the standard's pneumatic release time requirement."[emphasis added] (See 77 FR 20482). The same is true for this petition, NHTSA has considered the failure of the

[2] In response to question (2) of NHTSA's letter, Van Hool submitted brake release timing test results from in-house testing conducted on five (5) compliant, Model TD925 double decker buses manufactured for sale in the United States from 2008 through 2012. Full certification test reports and a table of compiled brake timing test results were included in the submission [see page 4, Docket No. NHTSA-2015-0122].

subject vehicles and whether the data and engineering analyses provided by Van Hool are sufficient to support its contention that the subject noncompliance in the subject vehicles is inconsequential to motor vehicle safety. In this case, Van Hool has failed to adequately support its contention.

NHTSA's Decision: In consideration of the foregoing, NHTSA finds that Van Hool has not met its burden of persuasion that the subject FMVSS No. 121 noncompliance is inconsequential to motor vehicle safety. Accordingly, NHTSA hereby denies Van Hool's petition and Van Hool is consequently obligated to provide notification of, and a free 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)

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Gregory K. Rea
Associate Administrator
for Enforcement

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