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**ECONOMIC COMMISSION FOR EUROPE**

**INLAND TRANSPORT COMMITTEE**

**World Forum for Harmonization of Vehicle Regulations**

One-hundred-and-forty-fourth session  
Geneva, 11 - 14 March 2008  
Item 4.2.29. of the provisional agenda

**1958 AGREEMENT**

Consideration of draft amendments to existing Regulations

Proposal for Supplement 10 to the 01 series of amendments to Regulation No. 90  
(Replacement brake linings)

Submitted by the Working Party on Brakes and Running Gear \*/

The text reproduced below was adopted by the Working Party on Brakes and Running Gear (GRRF) at its sixty-second session. It is based on ECE/TRANS/WP.29/GRRF/2007/10, as amended by para. 30 of the report. It is submitted to WP.29 and AC.1 for consideration (ECE/TRANS/WP.29/GRRF/62, para. 30).

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\*/ In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance performance of vehicles. The present document is submitted in conformity with that mandate.

Paragraphs 5.2.1. and 5.2.2., amend to read (including the insertion of a new footnote \*/):

"5.2.1. Replacement brake lining assemblies for vehicles of categories M<sub>1</sub>, M<sub>2</sub> and N<sub>1</sub>

At least one set of replacement brake lining assemblies, representing the type of lining to be approved, shall be installed and tested in at least one vehicle which is representative of the vehicle type for which approval is sought, according to the prescriptions of Annex 3 and shall satisfy the requirements stated in this annex. The representative vehicle(s) shall be selected from among the application range using a worst case analysis \*/. For speed sensitivity and cold performance equivalence, one of the two methods described in Annex 3 shall be used.

5.2.2. Replacement brake lining assemblies and replacement drum brake linings for vehicles of categories M<sub>3</sub>, N<sub>2</sub> and N<sub>3</sub>

At least one set of replacement brake lining assemblies or replacement drum brake linings, representing the type of lining to be approved, shall be installed and tested in at least one vehicle or a brake which is representative of the vehicle type for which approval is sought, according to the prescriptions of Annex 4, using one of the two methods described in paragraph 1. (vehicle test) or in paragraph 2. (inertia dynamometer test) and shall satisfy the requirements stated in this annex. The representative vehicle(s) or brake(s) shall be selected from among the application range using a worst case analysis \*/."

Paragraph 5.2.5., amend to read (with a reference to the same footnote \*/):

"5.2.5. Replacement brake lining assemblies for vehicles of category L

At least one set of replacement brake lining assemblies, representing the type of lining to be approved, shall be installed and tested in at least one vehicle which is representative of the vehicle type for which approval is sought, according to the prescriptions of Annex 7 and shall satisfy the requirements stated in this annex. The representative vehicle(s) shall be selected from among the application range using a worst case analysis \*/."

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\*/ Worst case analysis must include the following technical characteristics (as a minimum) of each vehicle type in the application range:

- (a) Rotor diameter
- (b) Rotor thickness
- (c) Ventilated or solid rotor
- (d) Piston diameter
- (e) Tyre dynamic radius
- (f) Vehicle mass
- (g) Axle mass and percentage of braking effort of the axle
- (h) Maximum speed of the vehicle

The testing conditions shall be specified in the test report.