



**Economic and
Social Council**

Distr.
GENERAL

ECE/TRANS/WP.29/GRRF/2007/9
10 July 2007

Original: ENGLISH
ENGLISH AND FRENCH ONLY

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

World Forum for Harmonization of Vehicle Regulations

Working Party on Brakes and Running Gear

Sixty-second session
Geneva, 25-28 September 2007
Item 4(a) of the provisional agenda

MOTORCYCLE BRAKING

Harmonization of motorcycle braking requirements

Proposal for draft Supplement 1 to the 03 series of amendments to Regulation No. 78
(Braking of category L vehicles)

Submitted by the expert from the International Motorcycle Manufacturers Association (IMMA)

The text reproduced below was prepared by the expert from IMMA to clarify the reference to the alternative method for establishing the Peak Braking Coefficient (PBC). It is based on a document without a symbol (informal document No. GRRF-61-03), distributed during the sixty-first GRRF session (see report ECE/TRANS/WP.29/GRRF/61, para. 14).

A. PROPOSAL

Annex 3

Paragraph 1.1.3., amend to read:

"1.1.3. Measurement of PBC:

.....

(b) the method specified in Appendix 1 to this annex."

Add a new Appendix 1, to read:

"Annex 3 - Appendix 1

ALTERNATIVE METHOD FOR DETERMINATION OF PEAK BRAKING COEFFICIENT

(see paragraph 1.1.3. to this annex)

1.1. General:

- (a) The test is to establish a PBC for the vehicle type when being braked on the test surfaces described in Annex 3, paragraphs 1.1.1. and 1.1.2.
- (b) The test comprises a number of stops with varying brake control forces. Both wheels shall be braked simultaneously up to the point reached before wheel lock, in order to achieve the maximum vehicle deceleration rate on the given test surface.
- (c) The maximum vehicle deceleration rate is the highest value recorded during all the test stops.
- (d) The Peak Braking Coefficient (PBC) is calculated from the test stop that generates the maximum vehicle deceleration rate, as follows:

$$PBC = \frac{0.56}{t}$$

Where:

t = time taken for the vehicle speed to reduce from 40 km/h to 20 km/h in seconds.

Note: For vehicles unable to achieve a test speed of 50 km/h, PBC shall be measured as follows:

$$PBC = \frac{0.56}{t}$$

Where:

t = time taken, in seconds, for the speed of the vehicle to reduce from 0.8 Vmax to (0.8 Vmax - 20), where Vmax is measured in km/h.

1.2. Vehicle condition:

- (a) The test is applicable to vehicle categories L₁ and L₃
- (b) ABS disconnected
- (c) Lightly loaded
- (d) Engine disconnected

- 1.3. Test conditions and procedure:
- (a) Initial brake temperature: ≥ 55 °C and ≤ 100 °C.
 - (b) Test speed: 60 km/h or 0.9 Vmax, whichever is lower.
 - (c) Brake application:
Simultaneous actuation of both service brake system controls, if so equipped, or of the single service brake system control in the case of a service brake system that operates on all wheels.
For vehicles equipped with a single service brake system control, it may be necessary to modify the brake system if one of the wheels is not approaching maximum deceleration.
 - (d) Brake actuation force:
The control force that achieves the maximum vehicle deceleration rate as defined in paragraph 1.1.(c) above.
The application of the control force must be constant during braking.
 - (e) Number of stops: until the vehicle meets its maximum deceleration rate.
 - (f) For each stop, accelerate the vehicle to the test speed and then actuate the brake control(s) under the conditions specified in this paragraph."

B. JUSTIFICATION

This change clarifies the alternative method for establishing the Peak Braking Coefficient by including the relevant text in a new Appendix 1 to the technical Annex 3, and thus avoiding a cross-reference to a previous version of the Regulation.
