Proposal of Supplement 3 to the 03 series of amendments to Regulation No. 78 (Uniform provisions concerning the approval of vehicles of category L with regard to braking)

Submitted by the expert from the European Commission*

The text reproduced below was prepared by the expert from the European Commission to introduce amendments adding the remaining vehicle categories to the provisions for testing of anti-lock braking systems (ABS), based on document GRRF-79-16, as agreed at the seventy-ninth GRRF session. The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2012–2016 (ECE/TRANS/224, para. 94 and ECE/TRANS/2012/12, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.
I. Proposal

Paragraph 1., amend to read:

"1. ... 
This Regulation applies to vehicles of category L.¹
...
"

Paragraph 2.6, amend to read:

"2.6. "Combined brake system (CBS)" means:
   For vehicle categories L₁ and L₃: a service brake system where at least two
   brakes on different wheels are operated by the actuation of a single control.
   For vehicle categories L₂, L₄, L₅ and L₇: a service brake system where the
   brakes on all wheels are operated by the actuation of a single control.
   ...
"

Paragraph 5.1.4., amend to read:

"5.1.4. Parking brake system
   If a parking brake system is fitted, it shall hold the vehicle stationary on the
   slope prescribed in paragraph 1.1.4. of Annex 3.
   The parking brake system shall:
   (a) Have a control which is separate from the service brake system
       controls; and
   (b) Be held in the locked position by solely mechanical means.
   Vehicles shall have configurations that enable a rider to be able to actuate the
   parking brake system while seated in the normal driving position.
   For L₂, L₄, L₅, L₆ and L₇, the parking brake system shall be tested in
   accordance with paragraph 8. of Annex 3."

Paragraph 5.1.7., amend to read:

"5.1.7. Three-wheeled vehicles of category L₂ and four-wheeled vehicles of
        category L₅ shall be equipped with a parking brake system plus one of the following
        service brake systems:
        ...
"

Paragraph 5.1.8., amend to read:

"5.1.8. Category L₃ vehicles and category L₇ vehicles shall be equipped with:"

Annex 3,

Paragraph 1.1.5., amend to read:

"1.1.5. Test lane width:
   For two-wheeled vehicles (vehicle categories L₁ and L₃) the test lane width is
   2.5 m.
   For three-wheeled and four-wheeled vehicles (vehicle categories L₂, L₄, L₅,
   L₆ and L₇) the test lane width is 2.5 m plus the vehicle width."
Paragraph 3.2., amend to read:

"3.2. Test conditions and procedure:

(a) Initial brake temperature: \( \geq 55 \, ^\circ\text{C} \) and \( \leq 100 \, ^\circ\text{C} \);

(b) Test speed:

(i) Vehicle categories \( L_1, L_2 \) and \( L_6 \): 40 km/h or 0.9 \( V_{\text{max}} \), whichever is lower;

(ii) Vehicle categories \( L_3, L_4, L_5 \) and \( L_7 \): 60 km/h or 0.9 \( V_{\text{max}} \), whichever is lower;

(c) Brake application:

(i) Each service brake system control actuated separately;

(d) Brake actuation force:

(i) Hand control: \( \leq 200 \) N;

(ii) Foot control: \( \leq 350 \) N for vehicle categories \( L_1, L_2, L_3, L_4 \) and \( L_6 \);

\( \leq 500 \) N for vehicle category \( L_5 \) and \( L_7 \);

..."
Paragraph 4.1., amend to read:
"4.1. Vehicle condition:
   (a) The test is applicable to vehicle categories L_{36}, L_{45}, L_{5} and L_{7};
   ...
"

Paragraph 4.2., amend to read:
"4.2. Test conditions and procedure:
   ...

   (d) Brake actuation force:
       Hand control: \leq 250 \text{ N};
       Foot control: \leq 400 \text{ N} for vehicle categories L_{3} and L_{4};
       \leq 500 \text{ N} for vehicle category L_{5} and L_{7};
   ...
"

Paragraph 5.1., amend to read:
"5.1. Vehicle condition:
   (a) The test is applicable to vehicle categories L_{36}, L_{45}, L_{5} and L_{7};
   ...
"

Paragraph 5.2., amend to read:
"5.2. Test conditions and procedure:
   ...

   (d) Brake actuation force:
       Hand control: \leq 200 \text{ N};
       Foot control: \leq 350 \text{ N} for vehicle categories L_{3} and L_{4};
       \leq 500 \text{ N} for vehicle category L_{5} and L_{7};
   ...
"

Paragraph 7.1., amend to read:
"7.1. General:
   ...

   (b) The test is applicable to vehicle categories L_{36}, L_{45}, L_{5} and L_{7};
   ...
"

Paragraph 7.2.2., amend to read:
"7.2.2. Test conditions and procedure:
   ...

   (d) Brake actuation force:
       Hand control: \leq 200 \text{ N};
       Foot control: \leq 350 \text{ N} for vehicle categories L_{3} and L_{4};
       \leq 500 \text{ N} for vehicle category L_{5} and L_{7};
   ..."
Paragraph 8.1., amend to read:

"8.1. Vehicle condition:
   (a) The test is applicable to vehicle categories \( L_2, \ L_4, \ L_5 \) and \( L_7 \);  
   ...

Paragraph 9.1., amend to read:

"9.1. General:
   (a) The tests are only applicable to the ABS if fitted on vehicle categories \( L_2 \) and \( L_4 \)
   ...

Paragraph 10.2., amend to read:

"10.2. Vehicle condition:
   (a) The test is applicable to vehicle categories \( L_3, \ L_4, \ L_5 \) and \( L_7 \);
   ...

Paragraph 11.3., amend to read:

"11.3. Performance requirements
   ...

<table>
<thead>
<tr>
<th>Vehicle Category</th>
<th>STOPPING DISTANCE(S)</th>
<th>Column 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Where ( V ) is the specified test speed in km/h and ( S ) is the required stopping distance in metres)</td>
<td></td>
</tr>
<tr>
<td>Single brake system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( L_1 )</td>
<td>( S \leq 0.1 \ V + 0.0143 \ V^2 )</td>
<td>( \geq 2.7 \text{ m/s}^2 )</td>
</tr>
<tr>
<td>( L_2 ) and ( L_6 )</td>
<td>( S \leq 0.1 \ V + 0.0143 \ V^2 )</td>
<td>( \geq 2.7 \text{ m/s}^2 )</td>
</tr>
<tr>
<td>( L_3 )</td>
<td>( S \leq 0.1 \ V + 0.0133 \ V^2 )</td>
<td>( \geq 2.9 \text{ m/s}^2 )</td>
</tr>
<tr>
<td>( L_4 )</td>
<td>( S \leq 0.1 \ V + 0.0105 \ V^2 )</td>
<td>( \geq 3.6 \text{ m/s}^2 )</td>
</tr>
<tr>
<td>Vehicles with CBS or SSBS</td>
<td>( S \leq 0.1 \ V + 0.0154 \ V^2 )</td>
<td>( \geq 2.5 \text{ m/s}^2 )</td>
</tr>
<tr>
<td>ALL</td>
<td>( S \leq 0.1 \ V + 0.0154 \ V^2 )</td>
<td>( \geq 2.5 \text{ m/s}^2 )</td>
</tr>
</tbody>
</table>

...
Paragraph 12.3., amend to read:

"12.3. Performance requirements

..."