

## India comments on document ECE/TRANS/WP29/GRRF/2013/35

(Deletions are shown ~~like this~~ and additions are shown *in this font*.)

### A – Proposals from India

A1. The definition of secondary braking system may be amended as:

2.13 "Secondary brake system" means ~~the second service brake system on a vehicle equipped with a combined brake system~~ ***it shall make it possible to halt the vehicle within a reasonable distance in the event of failure of the service braking system. For the purposes of these provisions it is assumed that not more than one failure of the service braking system can occur at one time.***

A2. The last row of the table appearing in para 4. 3.3 may be modified as:

ALL	$S \leq 0.1 V + 0.0154 V^2$ <b><i>Secondary brake requirements are considered to be complied if the requirements of paragraph 4.12 are complied with.</i></b>	$\geq 2.5 \text{ m/s}^2$
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A3. The text Insert new paragraph 12, to read should be modified as:

Insert new paragraph ~~12~~, ***4.12*** and consequent numbering to be changed.

A4. The proposed paragraph in Annex III, 4.12.1 (b) may be modified as:

The test is to confirm the performance of the service brake systems in the event of failure of one of the common components. Certain parts, such as the brake itself, the brake cylinders and their pistons (except the seals) the push rods, ***linkages, levers,*** the cam assemblies and the master cylinders (except the seals), shall not be regarded as liable to breakage if they are amply dimensioned, are readily accessible for maintenance, and exhibit sufficient safety features and therefore shall be exempted from a failure test.

A5. The proposed table in paragraph 4.12.3 may be modified as:

Column 1	Column 2	Column 3
Vehicle Category	<b>STOPPING DISTANCE (S)</b> (Where V is the specified test speed in km/h and S is the required stopping distance in metres)	MFDD
<b>Front wheel(s) braking only</b>		
L <sub>1</sub>	$S \leq 0.1 V + 0.0111 V^2$	$\geq 3.4 \text{ m/s}^2$
L <sub>2</sub>	$S \leq 0.1 V + 0.0143 V^2$	$\geq 2.7 \text{ m/s}^2$
L <sub>3</sub>	$S \leq 0.1 V + 0.0087 V^2$	$\geq 4.4 \text{ m/s}^2$
L <sub>4</sub>	$S \leq 0.1 V + 0.0105 V^2$	$\geq 3.6 \text{ m/s}^2$
L <sub>5</sub>	$S \leq 0.1 V + 0.0117 V^2$	$\geq 3.3 \text{ m/s}^2$
<b>OR Rear wheel(s) braking only</b>		
L <sub>1</sub>	$S \leq 0.1 V + 0.0143 V^2$	$\geq 2.7 \text{ m/s}^2$
L <sub>2</sub>	$S \leq 0.1 V + 0.0143 V^2$	$\geq 2.7 \text{ m/s}^2$
L <sub>3</sub>	$S \leq 0.1 V + 0.0133 V^2$	$\geq 2.9 \text{ m/s}^2$
L <sub>4</sub>	$S \leq 0.1 V + 0.0105 V^2$	$\geq 3.6 \text{ m/s}^2$
L <sub>5</sub>	$S \leq 0.1 V + 0.0117 V^2$	$\geq 3.3 \text{ m/s}^2$

B. Justifications:

India welcomes the IMMA proposal. The changes suggested by India are of editorial nature to bring clarity. The justifications for each proposed change are given below:

B1: For Proposal A1:

The current definition does not make it clear that the usage of Secondary brake system is intended in case of a failure in service brake system. Since now the requirements in the case of a failure in CBS is being specifically referred, it is desirable that it is reflected in definition also.

B2: For Proposal A2:

It is desirable to clarify that, once the requirements of new clause 12 are complied with, there is no need for a separate secondary brake system.

B3: For Proposal A3:

Editorial correction.

B4: For Proposal A4:

Present text caters only to hydraulic systems however mechanical linkages also to be considered.

B5: For Proposal A5:

The present wording in this document gives an impression, that in case of failure, both front and rear brake performance should be achieved. However, the basic intention is that the safety available in conventional brake system should at least be available. That is, if there is a failure affecting the front brake, performance of rear brake should be achievable and vice versa. This is an editorial correction in order to make the intention clear.

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