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**Economic Commission for Europe****Inland Transport Committee****World Forum for Harmonization of Vehicle Regulations****Working Party on Automated/Autonomous and Connected Vehicles****Seventh session**

Geneva, 21-25 September 2020

Item 7 of the provisional agenda

**Advanced Emergency Braking Systems****Proposal for 02 series amendment text to UN Regulation No. 152 (Advanced Emergency Braking Systems for M<sub>1</sub> and N<sub>1</sub> vehicles)****Submitted by the experts from the Informal Working Group on Advanced Emergency Braking Systems for vehicles of Categories M<sub>1</sub> and N<sub>1</sub>\***

The text reproduced below was prepared by the experts from the Informal Working Group on Advanced Emergency Braking Systems (AEBS) for vehicles of Categories M<sub>1</sub> and N<sub>1</sub> in order to introduce provisions for car-to-bicycle scenario as the second step of a two-step approach. Another, separate, document introduces the first step of this two-step approach. A third document proposes, as an alternative, a single step approach. The Working Party on Automated/Autonomous and Connected Vehicles (GRVA) is requested to make a decision on whether car-to-bicycle should be introduced in a single step or in a two-step approach. The modifications to the existing text of the Regulation are marked in bold for new and strikethrough for deleted characters.

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\* In accordance with the programme of work of the Inland Transport Committee for 2020 as outlined in proposed programme budget for 2020 (A/74/6 (part V sect. 20) para 20.37), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



## I. Proposal

Paragraph 5.2.3.3., amend to read:

### 5.2.3.3. Speed range

The system shall be active at least within the vehicle speed range between ~~30 km/h~~ **20 km/h** and 60 km/h and at all vehicle load conditions., unless deactivated as per paragraph 5.4.

Paragraph 5.2.3.4., the tables, amend to read:

#### Maximum Impact Speed (km/h) for M<sub>1</sub>\*

<i>Subject vehicle speed (km/h)</i>	<i>Maximum mass</i>	<i>Mass in running order</i>
<b>20</b>	<b>0.00</b>	<b>0.00</b>
<b>25</b>	<b>0.00</b>	<b>0.00</b>
<b>30</b>	<b>0.00</b>	<b>0.00</b>
<b>35</b>	<b>0.00</b>	<b>0.00</b>
<b>38</b>	<b>0.00</b>	<b>0.00</b>
<b>40</b>	<b>10.00</b>	<b>0.00</b>
<b>45</b>	<b>25.00</b>	<b>25.00</b>
<b>50</b>	<b>30.00</b>	<b>30.00</b>
<b>55</b>	<b>35.00</b>	<b>35.00</b>
<b>60</b>	<b>40.00</b>	<b>40.00</b>

All values in km/h

#### Maximum Impact Speed (km/h) for M<sub>1</sub><sup>‡</sup>

<i>Subject vehicle speed (km/h)</i>	<i>Maximum mass</i>	<i>Mass in running order</i>
30	0.00	0.00
35	0.00	0.00
38	0.00	0.00
40	10.00	10.00
45	25.00	25.00
50	30.00	30.00
55	35.00	35.00
60	40.00	40.00

All values in km/h

...

#### Maximum Impact Speed (km/h) for N<sub>1</sub>\*

<i>Subject vehicle speed (km/h)</i>	<i>Maximum mass</i>	<i>Mass in running order</i>
<b>20</b>	<b>0.00</b>	<b>0.00</b>
<b>25</b>	<b>0.00</b>	<b>0.00</b>
<b>30</b>	<b>0.00</b>	<b>0.00</b>
<b>35</b>	<b>0.00</b>	<b>0.00</b>
<b>36</b>	<b>0.00</b>	<b>0.00</b>
<b>38</b>	<b>15.00</b>	<b>0.00</b>
<b>40</b>	<b>25.00</b>	<b>0.00</b>
<b>45</b>	<b>30.00</b>	<b>25.00</b>
<b>50</b>	<b>35.00</b>	<b>30.00</b>
<b>55</b>	<b>40.00</b>	<b>35.00</b>
<b>60</b>	<b>45.00</b>	<b>40.00</b>

All values in km/h

<i>Subject vehicle speed (km/h)</i>	<i>Maximum mass</i>	<i>Mass in running order</i>
30	0.00	0.00
35	0.00	0.00
38	15.00	0.00
40	25.00	10.00
45	30.00	25.00
50	35.00	30.00
55	40.00	35.00
60	45.00	40.00

All values in km/h

The tables in paragraph 6.7. and subparagraphs, amend to read:

6.7. Warning and Activation Test with a Bicycle Target

6.7.1. The subject vehicle ...

**Subject vehicle test speed for M<sub>1</sub> category in bicycle target scenario**

<i>Maximum mass</i>	<i>Mass in running order</i>
20	20
38	40
60	60

<i>Maximum mass</i>	<i>Mass in running order</i>
30	30
38	38
60	60

...

**Subject vehicle test speed for N<sub>1</sub> category in bicycle target scenario**

<i>Maximum mass</i>	<i>Mass in running order</i>
20	20
36	40
60	60

<i>Maximum mass</i>	<i>Mass in running order</i>
30	30
35	38
60	60

All values ...

Insert a new paragraph 12 (and subparagraphs), to read:

**12. Transitional provisions**

**12.1. As from the official date of entry into force of the 02 series of amendments, no Contracting Party applying this Regulation shall refuse to grant or refuse to accept type approvals under this Regulation as amended by the 02 series of amendments.**

**12.2. As from 1 May 2024, Contracting Parties applying this Regulation shall not be obliged to accept type approvals to the preceding series of amendments of this Regulation, first issued after 1 May 2024.**

**12.3. Until 1 September 2028, Contracting Parties applying this Regulation shall accept type approvals to the preceding series of this Regulation, first issued before 1 May 2024.**

- 12.4. As from 1 September 2028, Contracting Parties applying this Regulation shall not be obliged to accept type approvals issued to the preceding series of this Regulation.**
- 12.5. Notwithstanding paragraphs 12.3. and 12.4., Contracting Parties applying this Regulation shall continue to accept type approvals issued according to the preceding series of amendments to this Regulation, for vehicles which are not affected by the changes introduced by the 02 series of amendments (i.e. car-to-car and/or car-to-pedestrian approvals are not affected by this new 02 series).**
- 12.6. Contracting Parties applying this Regulation may grant type approvals according to any preceding series of amendments to this Regulation or extensions thereof.**

## II. Justifications

1. The main purpose of this document is to introduce new provisions for the car-to-bicycle scenario as the second step of a two-step approach (see in particular paragraph 5.2.3.4.).
2. Another separate document proposes the changes necessary to introduce the first step per a Supplement 02 to the 01 series of amendments to the regulation.
3. The application dates are as in the table below.

	<i>New Type Approvals</i>	<i>Existing Type Approvals</i>
Car-to-bicycle – step 1 (as a Suppl. 2 to the 01 series)	Date of Entry Into Force	Shall be accepted until September 2028
Car-to-bicycle – step 2 (as a new 02 series)	May 2024	Can be mandated as from September 2028