

## **Proposal for a Supplement 01 to the 01 Series of amendments to UN Regulation No. [130] (Advanced Emergency Braking Systems)**

The modifications to the existing text of the UN Regulation are marked in bold for new or strikethrough for deleted characters.

### **I. Proposal**

*Paragraphs 6.4.2.1. and 6.4.2.2., amend to read:*

“6.4.2.1. At least one ~~haptic or acoustic~~ warning mode shall be provided no later than ~~the value~~ specified in Table I Column B of Annex 3, ~~before the start of the emergency braking phase.~~

**In the case of the vehicles referred to in Table I, row 1 of Annex 3, the warning shall be haptic or acoustic.**

**In the case of the vehicles referred to in Table I, row 2 of Annex 3, the warning shall be haptic, acoustic or optical**

6.4.2.2. At least two warning modes shall be provided no later than ~~the value~~ specified in Table I Column C of Annex 3, before the start of the emergency braking phase.”

*Paragraphs 6.5.2.1. and 6.5.2.2., amend to read:*

“6.5.2.1. At least one haptic or acoustic warning mode shall be provided no later than ~~the value~~ specified in Table I Column E of Annex 3, ~~before the start of the emergency braking phase.~~

6.5.2.2. At least two warning modes shall be provided no later than ~~the value~~ specified in Table I Column F of Annex 3, before the start of the emergency braking phase.”

cc

A	B	C	D	E	F	G	H	Row	
	Stationary target			Moving target					
	Timing of warning modes		Speed reduction (ref. paragraph 6.4.4.)	Timing of warning modes		Speed reduction (ref. paragraph 6.5.3.)	Target speed (ref. paragraph 6.5.1.)		
	At least 1 haptic or acoustic (ref. paragraph 6.4.2.1.)	At least 2 (ref. paragraph 6.4.2.2.)		At least 1 haptic or acoustic (ref. paragraph 6.5.2.1.)	At least 2 (ref. paragraph 6.5.2.2.)				
$M_3^1$ , $N_2 > 8t$ and $N_3$	Not later than 1.4 s. before the start of emergency braking phase	Not later than 0.8 s. before the start of emergency braking phase	Not less than 20 km/h	Not later than 1.4 s. before the start of emergency braking phase	Not later than 0.8 s. before the start of emergency braking phase	No impact	$12 \pm 2$ km/h	1	
$N_2 \leq 8t^{2,4}$ and $M_2^{2,4}$	Not later than 0,8 s before the start of the emergency braking phase	Before the start of the emergency braking phase <sup>3</sup>	Not less than 10 km/h	Not later than 0,8 s before the start of the emergency braking phase	Before the start of the emergency braking phase <sup>3</sup>	No impact	$67 \pm 2$ km/h <sup>5</sup>	2	

- 1/ Vehicles of category M3 with hydraulic braking system are subject to the requirements of row 2
- 2/ Vehicles with pneumatic braking systems are subject to the requirements of row 1
- 3/ **Values shall be specified by the vehicle manufacturer at the time of Type Approval (Annex 1, paragraph 15).**
- 4/ **Manufacturers of vehicles covered by row 2 may elect to gain vehicle Type Approval to the values specified in row 1; in this instance compliance shall be demonstrated with all the values contained in row 1."**
- 5/ **The values for the target speed in cell H2 shall be reviewed before 1st November 2021"**

## II. Justifications

*Paragraphs 6.4.2.1, 6.4.2.2, 6.5.2.1. and 6.5.2.2:*

Changes to these paragraphs will be necessary to clarify the distinction to be made between row 1 and row 2 vehicles in Table 1 in Annex 3, with regard to the choice the manufacturer has for the selection of the warning mode for this first warning signal.

In addition, as there are for row 2 vehicles no values specified for the warning time of the second warning, it would be no longer coherent to refer in these 4 paragraphs to "the value" specified in the columns C and F of Table 1 in Annex 3.

*Table I of Annex 3*

Heading for column B and column E: the changes of these headings are necessary to ensure coherence with the changes introduced in paragraph 6.4.2.1 to make the distinction between the number of warning modes the manufacturer may chose from for the 1<sup>st</sup> warning, depending on whether it concerns row 1 vehicles (acoustic or haptic) or row 2 vehicles (acoustic, haptic or optical).

*Footnote 3*

When a warning time has not been specified, footnote 3 requires the applicant for approval to declare his warning time.

*Footnote 4*

Provides clarification in case where the applicant requests type approval for a Row 2 vehicle pursuant the pass/fail values specified in Row 1.

*Footnote 5*

The current state of the knowledge of AEBS for vehicles having hydraulic braking system justifies the speed of the target.

When experience with this AEBS system will be gained, it could be possible to envisage a lower target speed. The UN Regulation should be adapted to a lower target speed as soon as possible with the aim to further improve safety.

The addition of the footnote ensures that the target speed will be reviewed in the light of experience gained.

The date proposed is based on the minimum time necessary to gain experience with AEBS systems on these types of vehicle, plus one year to review the UN Regulation.

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