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Item 7(b) of the provisional agenda

Advanced Emergency Braking System:

Lane Departure Warning System

Proposal for the 01 series of amendments to UN Regulation No. 130 (Lane Departure Warning System (LDWS))

Submitted by the expert from Australia*

The text reproduced below was prepared by the expert from Australia to facilitate effective functioning of Lane Departure Warning System (LDWS) fitted to Australian supplied vehicles of categories M₂, M₃, N₂ and N₃ primarily used under highway conditions. This proposal is based on informal document GRVA-16-10/Rev.1. The modifications to the current text of the Regulation are marked in bold or strikethrough characters.

* In accordance with the programme of work of the Inland Transport Committee for 2023 as outlined in proposed programme budget for 2023 (A/77/6 (part V sect. 20) para 20.6), 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 4.2., amend to read:

“4.2. An approval number shall be assigned to each vehicle type approved; its first two digits (~~00 for the Regulation in its initial form~~ e.g. “01” for the 01 series of amendments), shall”

Insert new paragraph 12., to read:

"12. Transitional provisions

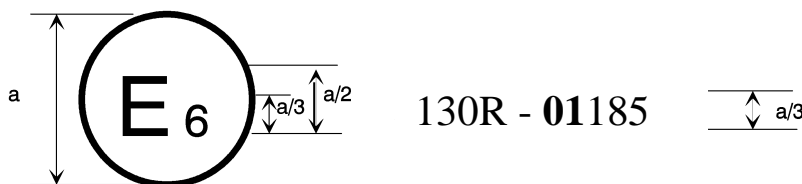
- 12.1. As from the official date of entry into force of the 01 series of amendments, no Contracting Party applying this Regulation shall refuse to grant or refuse to accept type approvals under this Regulation as amended by the 01 series of amendments.
- 12.2. As from 1 September 2025, Contracting Parties applying this Regulation shall not be obliged to accept type approvals to the preceding series of amendments, first issued on or after 1 September 2025.
- 12.3. Until 1 September 2027, Contracting Parties applying this Regulation shall accept type approvals to the preceding series of amendments, first issued before 1 September 2025.
- 12.4. As from 1 September 2027, Contracting Parties applying this Regulation shall not be obliged to accept type approvals issued to the preceding series of amendments to this Regulation."

Annex 2, amend to read:

"Annex 2

Arrangements of approval marks

(see paragraphs 4.4. to 4.4.2. of this Regulation)



a = 8 mm min

The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in Belgium (E 6) with regard to the LDWS pursuant to Regulation No. 130. The first two digits of the approval number indicate that the approval was granted in accordance with the requirements of Regulation No. 130 ~~in its original form~~ **as amended by the 01 series of amendments.**”

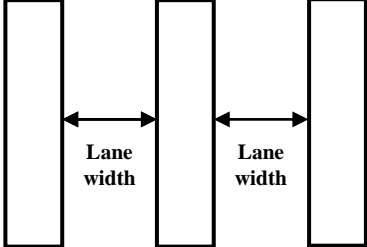
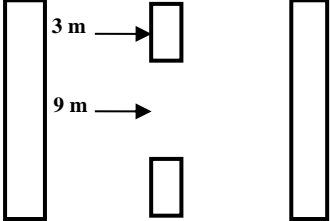



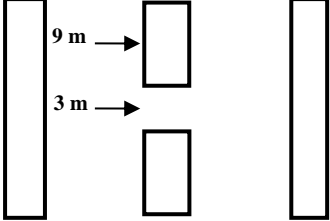



Annex 3

Table 1, amend to read:

"Annex 3**Visible lane marking identification**

1. For the purpose of the approval test referred to in paragraphs 6.2.3. and 6.5. of this Regulation, the test lane width shall be greater than 3.5 m.
2. The visible lane markings identified in Table 1 below are assumed to be white, unless otherwise indicated in this annex.
3. Table of identified visible lane markings to be used for approval test in accordance with paragraphs 6.2.3. and 6.5. of this Regulation.

Table 1

Pattern			Country	Width		
Left edge lane marking	Centre line	Right edge lane marking		Left edge lane marking	Centre line	Right edge lane marking
			Definition of lane width for the purpose of this Regulation			
			AUSTRALIA Two-lane, two-way road			
			AUSTRALIA Multi-lane undivided road			

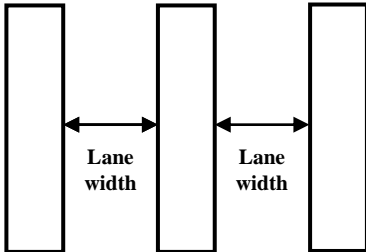
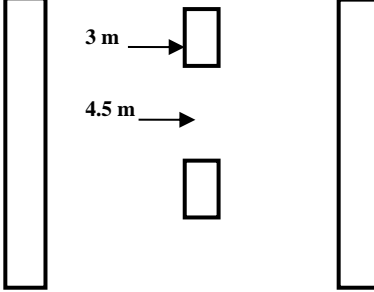
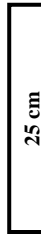
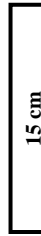
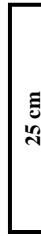
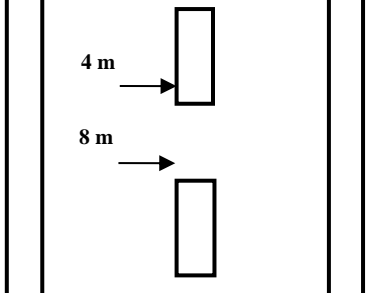
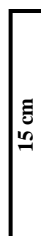

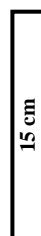
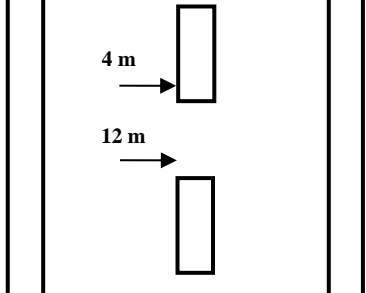

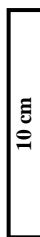

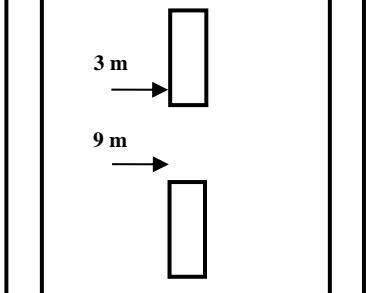
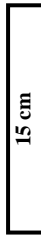

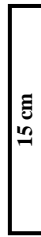
Pattern			Country	Width		
Left edge lane marking	Centre line	Right edge lane marking		Left edge lane marking	Centre line	Right edge lane marking
			Definition of lane width for the purpose of this Regulation			
			AUSTRALIA Two-lane, two-way road with lane changing allowed from one direction only	15 or 20 cm	10 cm 10 cm 10 cm	15 or 20 cm
			AUSTRALIA Two-lane, two-way road with lane changing not allowed	15 or 20 cm	10 cm 10 cm 10 cm	15 or 20 cm
			AUSTRALIA Single barrier line	15 or 20 cm	10 cm	15 or 20 cm
			CANADA			

Pattern			Country	Width		
Left edge lane marking	Centre line	Right edge lane marking		Left edge lane marking	Centre line	Right edge lane marking
			Definition of lane width for the purpose of this Regulation	30 cm	20 cm	30 cm
			CANADA Traffic Flowing in Opposite Direction	20 cm	15-20 cm	20 cm
			CANADA Traffic flowing in same direction	20 cm	15-20 cm	20 cm
			CANADA Traffic flowing in opposite directions with lane changing prohibited	20 cm	10-15 cm 10-15 cm 10-15 cm	20 cm
			CANADA Traffic flowing in opposite directions with lane changing allowed only from one lane	20 cm	10-15 cm 10-15 cm 10-15 cm	20 cm

Pattern			Country	Width		
Left edge lane marking	Centre line	Right edge lane marking		Left edge lane marking	Centre line	Right edge lane marking
			Definition of lane width for the purpose of this Regulation			
			CANADA Continuity lines in merging and diverging areas			
White Lines			CANADA Guiding Lines			
			DENMARK			
			FINLAND			

Pattern			Country	Width		
Left edge lane marking	Centre line	Right edge lane marking		Left edge lane marking	Centre line	Right edge lane marking
			Definition of lane width for the purpose of this Regulation			
			FRANCE Motorway ¹			
			FRANCE Highways (4 lanes or 2x2 lanes)			
			FRANCE (other roads)			
			GERMANY Secondary			

Pattern			Country	Width		
Left edge lane marking	Centre line	Right edge lane marking		Left edge lane marking	Centre line	Right edge lane marking
			Definition of lane width for the purpose of this Regulation			
			GERMANY Motorway			
			GREECE			
			ITALY Secondary and Local			
			ITALY Motorway			

Pattern			Country	Width		
Left edge lane marking	Centre line	Right edge lane marking		Left edge lane marking	Centre line	Right edge lane marking
			Definition of lane width for the purpose of this Regulation			
			ITALY Main			
			IRELAND			
			JAPAN			
			THE NETHERLANDS			

Pattern			Country	Width		
Left edge lane marking	Centre line	Right edge lane marking		Left edge lane marking	Centre line	Right edge lane marking
			Definition of lane width for the purpose of this Regulation			
			NORWAY			
			PORTUGAL			
			RUSSIAN FEDERATION More than one line in each direction (Basic variant)			
			RUSSIAN FEDERATION More than one line in each direction (Variant 1 with a lane for reversing traffic)			

Pattern			Country	Width		
Left edge lane marking	Centre line	Right edge lane marking		Left edge lane marking	Centre line	Right edge lane marking
			Definition of lane width for the purpose of this Regulation			
			RUSSIAN FEDERATION More than one line in each direction (Variant 2 with a lane for reversing traffic)			
			RUSSIAN FEDERATION One line in each direction (Variant 1)			
			RUSSIAN FEDERATION One line in each direction (Variant 2)			
			SPAIN			

Pattern			Country	Width		
Left edge lane marking	Centre line	Right edge lane marking		Left edge lane marking	Centre line	Right edge lane marking
			Definition of lane width for the purpose of this Regulation			
			SWEDEN			
			SWITZERLAND			
			UNITED KINGDOM Motorway ¹			
			UNITED KINGDOM Dual Carriageway			

Pattern			Country	Width		
Left edge lane marking	Centre line	Right edge lane marking		Left edge lane marking	Centre line	Right edge lane marking
			UNITED KINGDOM Single Carriageway (speed limit >40 mph)			

¹ Excepted certain zones (e.g.: slip road, lane for slow vehicles ...)

* Note:

For the traffic speed limit up to 60 km/h:

a = 1...3 m; b = 3...9 m; a:b = 1:3;

c = 3...6 m; d = 1...2 m; c:d = 3:1;

e = 1 m; f = 2 m; e:f = 1:2

For the traffic speed limit above 60 km/h:

a = 3...4 m; b = 9...12 m; a:b = 1:3;

c = 6...9 m; d = 2...3 m; c:d = 3:1;

e = 2 m; f = 4 m; e:f = 1:2"

II. Justification

A. Introduction

1. The objective of this proposal is to ensure lane departure warning systems function with typical lane markings and that vehicles will be designed for operation in the Australian market. The Australian Government is taking steps to implement standards for lane departure warning systems and emergency lane keeping systems. As part of that process, it was identified that the lane marking definitions in UN Regulation No. 130 were not representative of those found on Australian roads.

2. Approximately 10 per cent of Australian vehicle safety reports generated from January 2021 to December 2022 identified that when lane markings were present on the road, the lane departure warning system or lane keeping system fitted to the vehicles:

- (a) Did not warn the driver; or
- (b) Did not intervene if it had the capability to do so; or

(c) Intervened (conducted active steering) when there was no apparent safety or operational risk.

3. The Australian Government has consulted nationally on mandating lane departure warning systems based on UN Regulation No. 130 in early 2022 which proposed a commencement date of 1 November 2025 for new types (new models) and 1 November 2027 for all types (all vehicles) for motor vehicles of categories M₂, M₃, N₂ and N₃. This is subject to the relevant Minister's approval. Feedback from the consultation also included that the proposed Australian Design Rule should require systems to work with Australian lane markings.

B. Justification of Changes

4. Australia proposes an implementation date of 1 September 2025 for new models and 1 September 2027 for existing models. We believe this timeline is suitable considering the significant impact on road safety and safety reports received from Australian consumers regarding the performance of the lane departure warning system or lane keep assist system fitted to the vehicles.

5. Additionally, Australia is also proposing an Emergency Lane Keeping System for motor vehicles of categories M₁ and N₁, which is based upon European Union (EU) Regulation 2021/646, this EU regulation also references UN Regulation No. 130 Annex 3 (visible lane marking identification).

6. As this is a critical safety issue, Australia has included their local lane marking requirements into Annex 3 Table 1 of UN Regulation No. 130 and considers this amendment to be essential for ensuring the safety of vehicles that currently rely on these lane markings, as well as future vehicles that will also rely on these lane markings for steering and braking.

7. This will ensure that the lane departure warning systems are able to:

- (a) Detect edge line or outline markings of at least 15 cm thickness;
- (b) Detect variations in longitudinal gaps between lane markings ranging from a minimum of 3 m to a maximum of 9 m; and
- (c) Detect unique Australian barrier lines separated by a 10 cm lateral gap between the 10 cm thick dividing lines.

8. This does not impose any additional dynamic testing for manufacturers. Compliance with Australian requirements can be demonstrated through the use of documentation, which can be appended to the test report.

9. There are vacant rows located between the lane marking information for Greece and Italy, and Italy and Ireland. If there are no requirements for these vacant rows, they should be removed.

10. The expert from Australia has also submitted a proposed supplement to the 03 and 04 series of amendments to UN Regulation No. 79 (Steering Equipment) as a working document to the seventeenth session of the Working Party on Automated/Autonomous and Connected Vehicles (GRVA). The proposed amendments to UN Regulation No. 79 seek to address cross-referencing concerns raised by OICA during the sixteenth session of GRVA. This is of importance as UN Regulation No. 79 references Annex 3 of UN Regulation No. 130.

11. If Australian lane marking identification requirements are included into a later series of amendments to UN Regulation No. 130, this gives manufacturers the choice to test their lane departure warning systems to either the 00 series or any later series of amendments to UN Regulation No. 130.