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Regulations Nos. 13 and 13-H (Braking) - Clarifications

Proposal for amendments to Regulation No. 13-H (Brakes of M₁ and N₁ vehicles)

Submitted by the experts from the European Association of Automotive Suppliers and the International Organization of Motor Vehicle Manufacturers *

The text reproduced below was prepared by the experts from the European Association of Automotive Suppliers (CLEPA) and the International Organization of Motor Vehicle Manufacturers (OICA) to simplify the definition of Brake Assist Systems. The modifications to the existing 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 2006–2010 (ECE/TRANS/166/Add.1, 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 2.34.3., should be deleted

~~2.34.3. "Category C Brake Assist System" means a system which detects an emergency braking condition based on multiple criteria, one of which must be the rate at which the brake pedal is applied."~~

Annex 1

Paragraph 22.1., amend to read:

"22.1. Category of Brake Assist System A / B ~~and C 2~~"

Paragraph 22.1.3., should be deleted

~~"22.1.3. For category C systems, define the input variables affecting the decision to activate the Brake Assist System, the relationship between them and the pedal application required to activate the Brake Assist System for the tests described in Part B of Annex 9. 2"~~

Annex 9, section B

Paragraph 1.2., amend to read:

"1.2. General performance characteristics for category "B" ~~and category "C"~~ BAS systems

When an emergency condition has been sensed, at least by a very fast application of the pedal, the BAS system shall raise the pressure to deliver the maximum achievable braking rate or cause full cycling of the ABS.

Compliance with this requirement is demonstrated if the provisions of paragraphs 4.1. to 4.3. of this section are met."

Paragraphs 5. to 5.2., should be deleted

~~"5. ASSESSMENT OF THE PRESENCE OF A CATEGORY "C" BAS~~

~~5.1. A category "C" BAS shall meet the test requirements of paragraphs 4.1. and 4.2. of this section.~~

~~5.2. Data evaluation~~

~~— A category "C" BAS shall meet the requirements of paragraph 4.3. of this section."~~

II. Justification

1. The definitions of the categories of Brake Assist Systems (BAS) have been fundamentally based on the emergency braking detection. The principal selected criteria has been the pedal force or pedal speed. Category A is based on the pedal force criterion and Category B is based on the pedal speed criterion.

2. Category C, had the aim of permitting future technologies or combinations of Category A and B, which may not be strictly classifiable as A or B. However there seems to be some confusion in the interpretation of category C amongst Technical Services.

3. The reason is the interpretation of the wording "multiple criteria" used in the current definition of Category C. For example, the system of pedal speed criteria which has a variable threshold value based on the vehicle speed has been classified as Category C by some Technical Services, simply because it has "multiple criteria". In this case, the pedal

speed threshold is adjusted based on vehicle speed so as to avoid the unintentional activation of BAS rather than strictly the detection of an emergency situation. In consequence, in this case, the introduction of vehicle speed should be deemed as sub parameter tuning.

4. Some Category B systems similarly use pedal force to avoid the unintentional activation. From a principle point of view, these systems should still be classified as Category B because the additional criteria does not help in detecting the emergency situation, but rather helps in avoiding unintentional activation of BAS.

5. From a practical point of view, Category C requires exactly the same performance criteria as Category B. In consequence, the distinction between Category B and C does not change the type approval test and does not bring any safety benefit.

6. After lengthy discussions with different Technical Services, the experts arrived at the conclusion that the definition of Category C does not fulfil the purpose it was aimed for, and, on the contrary, jeopardizes the clarity of the regulation. For this reason, it is proposed to delete Category C from the text of the Regulation.
