



Economic and Social Council

Distr.: General
25 June 2012

Original: English

Economic Commission for Europe

Inland Transport Committee

World Forum for Harmonization of Vehicle Regulations

Working Party on Brakes and Running Gear

Seventy-third session

Geneva, 18–20 September 2012

Item 3(d) of the provisional agenda

Regulation Nos. 13 and 13-H (Braking) – Other business

Proposal for amendments to Regulations Nos. 13 and 13-H

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

The text reproduced below was prepared by the experts CLEPA and OICA to harmonize Regulations Nos. 13 and 13-H with the Federal Motor Vehicle Safety Standard FMVSS 135 on electric vehicle requirements with regard to the regenerative braking system (RBS). 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 2010–2014 (ECE/TRANS/208, para. 106 and ECE/TRANS/2010/8, 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

A. Regulation No. 13

Annex 4, paragraph 1.4.1.2.2., amend to read:

- "1.4.1.2.2. Every test shall be repeated ...
... the method set out in Appendix 1 to this annex:
- (a) ...
 - (c) at the maximum level which results from automatic charge control on the vehicle, **or**
 - (d) **when the tests are conducted without a regenerative braking component, as agreed between the Technical Service and the vehicle manufacturer, regardless of the state of charge of the batteries."**

Annex 4, paragraph 1.5.3.1.3., amend to read:

- "1.5.3.1.3. In the case of vehicles ...
... against the criteria of paragraphs 1.5.3.1.1. and 1.5.3.2. of this annex.
The tests may be conducted without a regenerative braking component, as agreed between the Technical Service and the vehicle manufacturer. In this case, the requirement on the state of charge of the batteries is not applicable."

Annex 4, Appendix, introductory paragraph, second sentence, amend to read:

"The procedure requires the use of a bi-directional DC Watt-hour meter **or a bi-directional DC Ampere-hour meter.**"

Annex 14, paragraph 1.1., amend to read:

- "1.1. For the purposes of the following provisions electrical braking systems are service braking systems consisting of a control device, an electromechanical **or electrohydraulic** transmission device, and friction brakes. The electrical control device regulating the **braking force**~~voltage~~ for the trailer shall be situated on the trailer."

B. Regulation No. 13-H

Annex 3, Paragraph 1.4.1.2.3., amend to read:

- "1.4.1.2.3. in the case of a vehicle ...
... one of the following conditions:
- (a) ...
 - (c) at a maximum level resulting from automatic charge control on the vehicle, **or**
 - (d) **when the tests are conducted without a regenerative braking component, as agreed between the Technical Service and the vehicle manufacturer, regardless of the state of charge of the batteries."**

Annex 3, Paragraph 1.5.2.4., amend to read:

- "1.5.2.4. In the case of vehicles ...
... of this annex.
The tests may be conducted without a regenerative braking component, as agreed between the Technical Service and the vehicle manufacturer. In this case, the requirement on the state of charge of the batteries is not applicable."

Annex 3, Paragraph 1.5.3.1., amend to read:

- "1.5.3.1. Vehicles equipped with an electrical regenerative braking system of category B may have their batteries re-charged or replaced by a charged set, in order to complete the recovery procedure.
The procedures may be conducted without a regenerative braking component, as agreed between the Technical Service and the vehicle manufacturer."

Annex 3, Appendix, introductory paragraph, second sentence, amend to read:

"The procedure requires the use of a bi-directional DC Watt-hour meter **or a bi-directional DC Ampere-hour meter.**"

II. Justification

1. At the forty-sixth session of GRRF in September of 1999, the expert from the United States of America proposed in informal document GRRF-46-03 to harmonize UN Regulation No. 13-H and FMVSS 135 on electric vehicle requirements. After several sessions, GRRF agreed to introduce some amendments into UN Regulations Nos. 13 and 13-H. For reference, in FMVSS 135, SAE J227a-1976 is quoted for measurement of the state of charge (SOC).

2. The purpose of the requirements in paragraph 1.4.1.2.3. of Annex 3 to UN Regulation No. 13-H is to perform the test with the minimum possible assistance from the regenerative braking system (RBS). However, it is uneasy to accurately adjust the SOC of the battery in order to fulfil this provision. It appears, therefore, reasonable to allow performing the test with disabled RBS with the side effect that, in addition, such possibility makes the test easier to perform in practice. For this reason, OICA proposes to add RBS disabling as an option to perform the Type-0 and Type-I tests.

3. OICA also proposes to add the possibility to measure the SOC of the battery with the help of a DC Ampere-hour meter, in addition to the currently mandatory DC Watt-hour meter. The Ampere-hour meter is indeed a more convenient and more accurate tool for such measurement.