Submitted by the experts from CLEPA

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Proposal for amendments to ECE/TRANS/WP.29/GRVA/2025/15

Proposal for amendments to UN Regulation No. 13 (Heavy Vehicle Braking)

This document supersedes and entirely replaces ECE/TRANS/WP.29/GRVA/2025/15 and GRVA-21-12

Submitted by the experts from ~~the CLCCR,~~ CLEPA ~~and OICA~~

The text reproduced below was prepared by the experts from the ~~International Association of the Body and Trailer Building Industry (CLCCR), the~~ European Association of Automotive Suppliers (CLEPA) ~~and International Organization of Motor Vehicle Manufacturers (OICA)~~. It proposes to establish definitions for “e-axle”, "e-axle trailer" and “dynamo function” and establish provisions for the approval of e-axle trailers with regard to their “dynamo function”. It is based on documents GRVA/2025/15 and GRVA-21-12.

The modifications to the existing text of Regulation No. 13 are marked in **bold** for new characters and in ~~strikethrough~~ for deleted characters.

Proposal

Add a new paragraph 1.2.6, as follows:

1.2.6. e-axle trailers with e-axles that provide electric propulsion

Paragraph 2.2.2.4., amend to read:

2.2.2.4. A different type of braking equipment **[or any presence of an electric regenerative braking system and/or any presence of an electric propulsion system]** .

Add new Paragraph 2.57. to 1.59, to read:

2.57 "*e-axle*" means an axle mounted to a vehicle of category O3 and O4, generating electrical energy and/or providing electrical propulsion.

2.58 "*e-axle trailer*" means a trailer of category O3 and O4 that is equipped with at least one e-axle

2.59. "*Dynamo function*" of an e-axle trailer means the capability of a trailer to provide for the conversion of vehicle kinetic energy into electrical energy without being directly controlled by the driver and without affecting the forces developed by parts of the braking system[1].

Insert new paragraph 5.2.2.26., to read:

5.2.2.26. Special additional requirements for dynamo function of e-axle trailers

5.2.2.26.1. The dynamo function shall not provide a retardation power of more than 20kW for the complete trailer.

5.2.2.26.2. In case the dynamo function has the capability to generate a braking rate exceeding 0.04 per wheel, it shall be controlled such that it does not cause wheel locking at speeds above 15 km/h. If a physical test is required, it shall be conducted in compliance with par. 5.2.2.26.2.

5.2.2.26.3. The operation of the dynamo function shall be assessed according to Annex 18.

5.2.2.26.4 It shall also be demonstrated that the vehicle still complies with requirements of Annex 13 and 21 affected by the dynamo function.

5.2.2.26.5 If controls referred to in par. 5.2.2.26.2 imply a physical test, a comparison shall be conducted under worst case conditions for the dynamo function, with and without the e-axle trailer dynamo function active, to demonstrate the dynamo function prevents locked wheel(s) and has no critical impact on the vehicle behaviour.

The verification test has to be conducted with an adhesion factor between tyre and road surface that is lower than the calculated brake rate of the dynamo function to enforce wheel locking without applying any brake.

Annex 4, insert new paragraph 1.7.1.3. to read:

"1.7.1.3. In case of trailers equipped with an electric regenerative braking system / dynamo function the electric regenerative braking system / dynamo function shall be switched off during the brake applications."

[1] ***A dynamo function is not part of the braking system and not considered a brake.***

Annex 4, insert new paragraph 3.1.2.5. to read:

"3.1.2.5. In case of trailers equipped with an electric regenerative braking system / dynamo function the electric regenerative braking system / dynamo function shall be switched off during the brake test."

Annex 4, insert new paragraph 3.1.3.5. to read:

"3.1.3.5. If the trailer is equipped with an electric regenerative braking system / dynamo function the electric regenerative braking system / dynamo function shall be switched off during the brake test."

Annex 19 - Appendix 5 Paragraph 2.2. amend to read:

2.2. Schematic diagrams of the system configurations installed on the trailers defined in item 2.1. above with consideration given to the following parameters:

Sensor locations

Modulator locations

Lift axles

Steering axles

e-Axles

Tube: type - bore size(s) and lengths

Annex 19 - Appendix 7 Paragraph 2.2. amend to read:

2.2. Schematic diagrams of the respective configurations installed on the trailers defined in item 2.1. above with consideration given to the following:

(a) Lift axles;

(b) Steering axles;

(c) Anti-lock braking configurations;

(d) e-Axles.