



**Economic and Social
Council**

Distr.
GENERAL

ECE/TRANS/WP.29/GRSG/2007/21
26 July 2007

Original: ENGLISH

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

World Forum for Harmonization of Vehicle Regulations

Working Party on General Safety Provisions

Ninety-third session

Geneva, 23-26 October 2007

Item 5. of the provisional agenda

Regulation No. 18

(Protection of vehicles against unauthorized use)

Proposal for amendments to Regulation No. 18

Submitted by the expert from France

The text reproduced below was prepared by the expert from France in order to introduce into Regulation No. 18 requirements for electrical parking brakes to be used as devices to prevent unauthorized use. It is based on informal document No. GRSG-92-3, distributed during the ninety-second session of the Working Party on General Safety Provisions (GRSG) (ECE/TRANS/WP.29/GRSG/71, para. 19). The modifications to the current text of the Regulation No. 18 are marked in **bold** or ~~strikethrough~~ characters.

A. PROPOSAL

Text of the Regulation,

Paragraph 2.3., amend to read:

"2.3. "Protective device" means a system designed to prevent unauthorized normal activation of the engine or other source of main engine power of the vehicle in combination with at least one system which:

- (a) locks the steering; **or**
- (b) locks the transmission; or
- (c) locks the gearshift control; **or**
- (d) **locks the wheels.**"

Paragraph 5.9.2., amend to read:

"5.9.2. In the case of devices acting on the steering, transmission, **wheels** or gear shift control, if the action of key withdrawal activates the device, it shall either necessitate a minimum movement of 2 mm before activation of the device or incorporate an override facility to prevent accidental removal or partial withdrawal of the key."

Paragraph 5.12., amend to read:

"5.12. **Devices to prevent unauthorized use** by preventing release of the brakes of the vehicle shall **only** be permitted **when the brakes are held in a locked position by a purely mechanical device. In this case the prescriptions of paragraph 5.11. do not apply.**

Paragraph 6.2., amend to read:

"6.2. **Devices to prevent unauthorized use by acting on the transmission or the wheels**"

Insert a new paragraph 6.2.2., to read:

"6.2.2. **A device to prevent unauthorized use by acting on wheels shall prevent the rotation of at least two wheels.**"

Paragraph 6.2.2. (former), renumber as paragraph 6.2.3.

Paragraph 6.2.3. (former), renumber as paragraph 6.2.4. and amend to read:

"6.2.4. It shall not be possible for the transmission **or the wheels** to be blocked inadvertently when the key is in the lock of the **device to prevent unauthorized use**, even if the device preventing starting of the engine has come into action or been set to act. **This does not apply wherever the requirements of paragraph 6.2. of this Regulation are met by devices used for another purpose**

in addition and the lock under the conditions above is necessary for this additional function (e.g. electrical parking brake)."

Paragraph 6.2.4. (former), renumber as paragraph 6.2.5. and amend to read:

"6.2.5. The protective device shall be so designed and constructed that it remains fully effective even after some degree of wear as a result of 2,500 locking cycles in each direction. **In the case of a protective device acting on the wheels, each mechanical or electrical sub-part of the device is concerned."**

Paragraph 6.2.5. (former), renumber as paragraph 6.2.6. and amend to read:

"6.2.6. If the protective device ... in which the transmission is **or the wheels are** locked, it shall be so designed ... "

Paragraph 6.2.6. (former), renumber as paragraph 6.2.7. and amend to read:

"6.2.7. ~~The protective device~~ **In the case when a protective device acting on the transmission is used, it** shall be strong enough to withstand, without damage likely to compromise safety, the application in both directions and in static conditions of a torque 50 per cent greater than the maximum torque that can normally be applied to the transmission. In determining the level of this testing torque account shall be taken, not of the maximum engine torque, but of the maximum torque that can be transmitted by the clutch or by the automatic transmission."

Insert new paragraphs 6.2.8. and 6.2.9., to read:

"6.2.8. **In the case of a vehicle equipped with a protective device acting on the wheels, the device must be capable of holding the laden vehicle stationary on an 18 per cent up or down-gradient.**

6.2.9. **In the case of a vehicle equipped with a protective device acting on the wheels, the vehicle's braking system shall be capable of providing secondary braking performance even if the protective device has been damaged."**

Insert new paragraphs 6.4. and 6.4.1., to read:

"6.4. **Alternative devices**

6.4.1. **Alternative devices are permissible in accordance with the Approval Authority. Thereby at least an equivalent protection comparable to that required in paragraphs 6.1., 6.2. and 6.3. of this Regulation shall be achieved."**

B. JUSTIFICATION

As a reminder, the present document aims to compile the amendments already adopted by GRSG at its eighty-ninth session and reproduced in Annex 3 to the report

(ECE/TRANS/WP.29/GRSG/70) with the proposal of document ECE/TRANS/WP.29/GRSG/2006/26 from France, as revised by the experts from France; from the European Association of Automobile Suppliers (CLEPA); and from the International Organization of Motor Vehicle Manufacturers (OICA) following the request of GRSG, expressed at its ninety-first session (ECE/TRANS/WP.29/GRSG/70, para. 28).

Reference to paragraph 2.3.

- Not all wheels can be involved, only the wheels on which the antitheft system applies.
- It is not necessary to specify in this paragraph that the electric parking brake is targeted. On the contrary, GRSG made the decision not to be design-restrictive and to anticipate possible future systems, while the electric parking brake is in mind for the time being.

Reference to paragraph 5.9.2.

Copy/paste from ECE/TRANS/WP.29/GRSG/2006/26.

Reference to paragraph 5.12.

The first sentence was adopted by GRSG at its eighty-ninth session. This new wording of paragraph 5.12. replaces the current prohibition of protective devices preventing release of the brakes by a limitation to those cases when the brakes are held in a locked position by a purely mechanical device.

But currently paragraph 5.11. prohibits the possibility to activate the engine if the protective device is not de-activated first. Hence paragraph 5.11. would be contradictory to paragraph 5.12. because those devices need power to be de-activated. A new sentence was added to avoid the contradiction.

Reference to paragraph 6.2.

Adopted by GRSG at its eighty-ninth session.

Paragraph 6.2.1.

The wording of the current text of the Regulation is acceptable and can remain. The discrimination between the systems acting on the transmission and those acting on the wheels is done by the addition of a new paragraph 6.2.2. Hence, it is not necessary to amend paragraph 6.2.1.

The devices acting on the transmission and those acting on the wheels do not work the same way and hence should be distinguished in two separate paragraphs. The devices acting on the transmission do not necessarily prevent the wheels from rotating (i.e. the driving wheels might remain free) whilst the devices acting directly on the wheels do (driving wheels only). It is very difficult to address those two systems into the same paragraph.

Reference to the new paragraph 6.2.2.

This paragraph addresses only the devices acting on the wheels. Most vehicles have a parking brake acting on two wheels. This requirement is aligned with the requirement of paragraph 6.2.1. (transmission) since the transmission often acts on two wheels only. The insertion of a new paragraph 6.2.2. implies the re-numbering of the following paragraphs.

Reference to paragraph 6.2.4. (new)

Adopted by GRSG at its eighty-ninth session as paragraph 6.2.3.

Reference to paragraph 6.2.5. (new)

Proposed as paragraph 6.2.4. by ECE/TRANS/WP.29/GRSG/2006/26 (France). The paragraph should take into account the fact that devices acting on the wheels can be complex and can include electrical and mechanical parts.

Reference to paragraph 6.2.6. (new)

Adopted by GRSG at its eighty-ninth session as paragraph 6.2.5.

Reference to paragraph 6.2.7. (new)

Paragraph 6.2.7. is now divided into paragraphs 6.2.7. and 6.2.8. because the devices acting on the transmission or on the wheels are different.

Reference to the new paragraph 6.2.8.

The French proposal ECE/TRANS/WP.29/GRSG/2006/26 suggests some performance requirements with the aim to guarantee the same level of performance for the electric parking brakes as for the existing, purely mechanical, devices. However, this solution was considered unnecessary and too severe. Unlike the steering wheel locking system that needs a sequence of 5,000 cycles to be tested, the parking brake is a safety device which is tested under a sequence of at least 500,000 cycles by the manufacturer because he must guarantee the proper functioning of the device for at least the lifetime of the vehicle. The electric parking brake is activated each time the vehicle is brought to a stop, while the steering lock is only activated each time the driver leaves the vehicle. The manufacturer will therefore put a lot more effort in the reliability of an electric parking brake functioning as a protective device (there is no difference in the functioning) than on a steering wheel lock. As a consequence, there is no benefit in adding a performance test. On the contrary, there are only drawbacks because of the time and cost involved in performing a test with no safety benefit.

GRSG thus agreed to copy/paste (except some unnecessary details) the prescriptions of Regulation No. 13 (Annex 4, paragraph 2.3.1.). The system is believed to comply with the prescriptions of Regulation No. 13, as an approval according to that Regulation is necessary. In case of doubt, Technical Services are still free to ask for a test.

Reference to the new paragraph 6.2.9.

France is keen to have a guarantee that the secondary braking performance of the vehicle is kept even when the unauthorized user has made the protective device inoperative.

Reference to paragraphs 6.4. and 6.4.1.

Adopted by GRSG at its eighty-ninth session.

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