

PROPOSAL FOR DRAFT AMENDMENTS TO REGULATION No. 13

(Braking)

Transmitted by the Expert from the European Association of Automotive Suppliers (CLEPA)

A. PROPOSAL

Paragraph 5.2.1.11.2.1., amend to read:

"5.2.1.11.2.1. It shall be possible to easily check this wear on service brake linings from the outside or underside of the vehicle, **without the removal of the wheels, by the provision of appropriate inspection holes or by some other means. This may be achieved by** utilizing ~~only standard workshop tools or common inspection equipment for vehicles e.g. mirror, endoscope etc. tools or equipment normally supplied with the vehicle, for instance by the provision of appropriate inspection holes or by some other means.~~ Alternatively, acoustic or optical devices warning the driver at his driving position when lining replacement is necessary are acceptable. The yellow warning signal specified in paragraph 5.2.1.29.1.2. below may be used as the optical warning signal."

Paragraph 5.2.1.11.2.2., amend to read:

"5.2.1.11.2.2. Assessment of the wear condition of the friction surfaces of brake discs or drums may only be performed by direct measurement of the actual component **or examination of wear indicators**, which may necessitate some level of disassembly."

Insert new paragraphs 5.2.1.11.2.2.1. and 5.2.1.11.2.2.2., to read:

~~"5.2.1.11.2.2.1. At the time of manufacture, the manufacturer shall either:~~

~~(a) Mark the disc with the value of the minimum thickness or the drum with the value of the maximum diameter, permissible before replacement is necessary. This should be on a part of the component least likely to suffer from deterioration due to corrosion, or~~

~~(b) Permanently mark both friction surfaces of the disc or the friction surface of the drum with a wear indicator. This may be in the form of an indentation, a groove or other appropriate method.~~

" 5.2.1.11.2.2.1. At the time of type approval, the vehicle manufacturer shall define the following:

- (a) **The method by which wear of the friction surfaces of drums and discs may be assessed, including the level of disassembly required and the tools and process required to achieve this.**
- (b) **Information defining the maximum acceptable wear limit at the point at which replacement becomes necessary.**

This information shall be made freely available, e.g. vehicle handbook or electronic data record."

Paragraphs 5.2.2.8.2.1. and 5.2.2.8.2.2., amend to read:

- "5.2.2.8.2.1. It shall be possible to easily check this wear on service brake linings from the outside or underside of the vehicle, **without the removal of the wheels, by the provision of appropriate inspection holes or by some other means. This may be achieved by utilizing only standard workshop tools or common inspection equipment for vehicles e.g. mirror, endoscope, etc. Alternatively, a trailer mounted display providing information when lining replacement is necessary or an optical device warning the driver at his driving position when lining replacement is necessary are acceptable. The yellow warning signal specified in paragraph 5.2.1.29.2. above may be used as the optical warning signal provided that signal complies with the requirements of paragraph 5.2.1.29.6 above.**"
- 5.2.2.8.2.2. Assessment of the wear condition of the friction surfaces of brake discs or drums may only be performed by direct measurement of the actual component **or examination of wear indicators**, which may necessitate some level of disassembly."

Insert new paragraphs 5.2.2.8.2.2.1. and ~~5.2.2.8.2.2.2.~~ to read:

~~"5.2.2.8.2.2.1. At the time of manufacture, the manufacturer shall either:~~

- ~~————— (a) Mark the disc with the value of the minimum thickness or the drum with the value of the maximum diameter, permissible before replacement is necessary. This should be on a part of the component least likely to suffer from deterioration due to corrosion, or~~
- ~~————— (b) Permanently mark both friction surfaces of the disc or the friction surface of the drum with a wear indicator. This may be in the form of an indentation, a groove or other appropriate method.~~

" 5.2.2.8.2.2.1. At the time of type approval, the vehicle manufacturer shall define the following:

- (a) **The method by which wear of the friction surfaces of drums and discs may be assessed, including the level of disassembly required and the tools and process required to achieve this.**
- (b) **Information defining the maximum acceptable wear limit at the point at which replacement becomes necessary.**

This information shall be made freely available e.g. vehicle handbook or electronic data record."

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B. JUSTIFICATION

At the fifty-fifth session of GRRF, it was agreed that the United Kingdom would amend document TRANS/WP.29/GRRF/2004/5 taking into consideration the CLEPA comments concerning the marking of discs and drums.

Further consideration has been given to the revised document TRANS/WP.29/GRRF/2004/23 and it is the opinion of CLEPA that the addition of the requirement to permanently mark the disc or drum with the thickness at which the component should be replaced would serve no purpose particularly when it is prescribed that this information will be made freely available – see paragraphs 5.2.1.11.2.2.1. and 5.2.2.8.2.2.1. above. Adding such a requirement also adds to the complication and cost of type approval as the requirement must be interpreted and applied to establish whether the marking complies with the interpretation.

In the case of motor vehicle it is possible to provide either acoustical or optical warning when the wear limit of the friction material has reached a level where it should be replaced however no such provision exists for the trailer. In association with the wide spread use of disc brakes manufacturers have introduced brake wear monitoring system powered from the ISO7638 via the ABS or braking system therefore there is the capability to provide a warning of the wear status on the friction material of the trailer brakes. This information can be accessed in three ways:

- Dedicated brake wear monitoring display mounted on the trailer.
- An information display connected to the braking system which is able to display trailer related information including the status of the friction material.
- Utilise the Yellow trailer warning signal which is signalled via Pin 5 of the ISO7638 connector.

In the latter case the use of the Yellow trailer warning signal would be controlled by the reference to paragraph 5.2.1.29.6. which would ensure that the indication of prescribed faults by that signal when a braking system fault is present is not compromised as it is considered that it is adequate that the driver should only be warned that the friction material wear limit has been reached every time the ignition is turned on and no prescribed faults are present.

All of the above options should be accepted as recognition of compliance with the requirement to provide indication of the wear status of the friction material.
