



Informal document N° 12
(53rd GRRF, 3-7 February 2003
agenda item 1.3)

OICA/CLEPA PROPOSED AMENDMENTS TO ECE REGULATION N° 13
(Inspection of vehicle service brakes)

PROPOSAL

- 5.1.4. Provisions for the periodic technical inspection of braking systems
- 5.1.4.1. It shall be possible to assess the wear condition of the components of the service brake that are subject to wear e.g. friction linings and drums/discs (In the case of drums or discs, wear assessment may not necessarily be carried out at the time of Periodic Technical Inspection). The method by which this may be realised is defined in paragraphs 5.2.1.11.2 and 5.2.2.8.2. of this Regulation.
- 5.2.1.11.2. Checking the wear of the service brake friction components
- 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 utilising only the 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 removal of front and/or rear wheels is permitted for this purpose on category M1 and N1 vehicles only. The yellow warning signal specified in paragraph 5.2.1.29.1.2. below may be used as the optical warning signal.
- 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 components, which may necessitate some level of disassembly. Therefore at the time of type approval the vehicle manufacturer shall define the following:
- The method by which wear of the friction surfaces of drums and discs may be assessed, including the level of disassembly required and tools and process required to achieve this.
 - 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.
- 5.2.2.8.2. Checking the wear of the service brake friction components
- 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 utilising only the tools or equipment normally supplied with the vehicle, for instance by the provision of appropriate inspection holes or by some other means.

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 components, which may necessitate some level of disassembly. Therefore at the time of type approval the vehicle manufacturer shall define the following:

- The method by which wear of the friction surfaces of drums and discs may be assessed, including the level of disassembly required and tools and process required to achieve this.
- 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.

JUSTIFICATION

It is accepted and required to be able to assess the wear condition of the lining materials of the service brakes. The methodology currently defined within Regulation 13 to realise this assessment is considered satisfactory for the purposes of PTI.

However, if it is necessary to extend the measurements of brake rotor components, a choice exists between:

- a) Making a very poor assessment on a complete brake as it is installed on the vehicle, which is open to error and misjudgement.
- b) Removal of the protection which is provided by the vehicle manufacturer to shelter the brake from the worst aspects of the vehicle operating environment.
- c) Acceptance that measurement of drum/disc dimensions can only be performed with any accuracy by direct measurement on the components concerned. This cannot be made with the vehicle in a road-going condition but must be under taken when the brakes are serviced, typically when the linings are being renewed and the rotor parts are exposed and cleaned.

It is industries position that alternative (c) above should be selected as this provides the only realistic means of achieving the objective. Therefore at the time of lining renewal the reliable measurements made under the correct circumstances should be recorded e.g. service record, which also lists any replacements that are made alongside the vehicle mileage and date of service. This is the document to which the PTI inspectors should refer.

If there are reasons in certain countries why this would not be acceptable then the periodic inspection should be limited to the assessment of the friction linings.
