



**Economic and Social  
Council**

**Distr.  
GENERAL**

**TRANS/WP.15/1999/12  
8 February 1999**

**Original: ENGLISH**

---

**ECONOMIC COMMISSION FOR EUROPE**

**INLAND TRANSPORT COMMITTEE**

**Working Party on the Transport  
of Dangerous Goods**  
**(Sixty-sixth session, Geneva,  
3-7 May 1999)**

**THE SAFETY OF ELECTRICAL INSTALLATIONS AND  
PERMANENTLY ENERGISED EQUIPMENT**

**Transmitted by the International Organization of Motor Vehicle Manufacturers and the  
Liaison Committee for the Manufacture of Automobile Equipment and Spare Parts  
(OICA/CLEPA)**

1. Document TRANS/WP15/1998/13 is the report from the ad hoc Electrical Working Group meeting held in Sweden during April 1998. At that meeting, there was a discussion on whether there was a need to retain marginal 220 514, relating to the tachograph, if the meeting proposals for marginal 220 515, relating to Permanently Energised Equipment, were to be adopted by WP15. There was no consensus at the meeting and industry representatives from OICA and CLEPA were asked to address the issue prior to the November WP15 meeting.
2. OICA and CLEPA presented informal document N° 8 to the 65th WP15 meeting in November 1998. This document addressed the outstanding issues from the ad hoc Electrical Working Group meeting and presented a consolidated text of the proposed amendments to Appendix B2 with a justification.
3. The 65th WP15 meeting provisionally accepted the proposals associated with the Battery Master Switch that were contained in Informal document N° 8 and industry was requested to present a formal paper concerning the proposals relating to other electrical equipment. This paper, therefore, sets out the proposals for the Safety of Electrical Installations and Permanently Energised Electrical Equipment and also includes the provisional text for the battery master switch.

**Proposals**

10 252 (1) Electrical Equipment on transport units mentioned in marginal 10 251 a), situated in areas where an explosive atmosphere is, or may be expected to be present in such quantities as to require special precautions, shall be suitable for use in a hazardous area. Such equipment shall meet the general and additional requirements of EN 60079-14 and those requirements applicable from EN 50014 to EN 50020, prEN 50021 and EN 50028. These requirements for explosion group IIB, temperature class T4 shall be met, with the exception of hydrogen, acetylene or carbon disulphide for which explosion group IIC, temperature class T6 is required. For the application of EN 60079-14 the following permanent classification shall be used :

Zone 0 - Inside :

- Tank compartments
- Fittings for filling and discharge
- Vapour recovery lines

Zone 1 :

- Inside cabinets for equipment used for loading and unloading
- Within 0.5 metres of venting devices and pressure relief safety valves

10 252 (2) Electrical equipment on transport units mentioned in paragraph (1) which is situated outside the permanent zones 0 and 1, and which is not subject to marginal 220 513, shall either comply with marginal 220 515 or shall be capable of being isolated from the battery by the battery master switch.

*Battery Master Switch*

220 512 (1) A switch for breaking the electrical circuits shall be placed as close to the battery as practicable.

220 512 (2) The control device for the switch shall be installed in the driver's cab. It shall be readily accessible to the driver and be distinctively marked. It shall be protected against inadvertent operation by either adding a protective cover, or by using a dual movement control device or by other suitable means.

220 512 (3) The switch shall have a casing with a protection degree IP65 in accordance with IEC standard 529.

220 512 (4) The cable connections on the switch shall have protection degree IP54. However, this does not apply if these connections are contained in a housing which may be the battery box. In this case it is sufficient to insulate the connections against short circuits, for example with a rubber cap.

*Tachograph*

220 514 Delete the text.

*Permanently Energised Installations*

- 220 515 (1) Those parts of the electrical installation which are not capable of being isolated from the battery by the battery master switch shall be suitable for use in a hazardous area. Such equipment shall meet general and additional requirements of EN 60079-14 and those requirements applicable from EN 50014 to EN 50020, prEN 50021 and EN 50028.
- 220 515 (2) Permanently energised electrical equipment, which is installed on transport units as mentioned in marginal 10 252 (1) and which is situated outside the permanent zones 0 and 1 specified in that marginal and which is not subject to marginal 220 513, shall meet the requirements for zone 1, if situated external to the driver's cab, or for zone 2, if situated in the driver's cab.
- 220 515 (3) The electrical supply leads to any permanently energised equipment shall meet the requirements of EN 60079-14 and shall be protected against impact, abrasion and chafing. Examples of appropriate protection are given in marginal 220 516 (1).

**Justification**

1. It is a mandatory element of Driver's Hours legislation that the tachograph must remain energised when the battery master switch is opened. The specific requirements for the current technology device, as prescribed in marginal 220 514, are contained in the proposals for the revised marginal 220 515.
  2. The proposed revision of marginal 220 515 also provides a greater degree of flexibility for the proposed digital replacement for the current technology tachograph and for other permanently energised equipment, with regard to the standards that can be used for approval of such equipment for use in a hazardous zone.
  3. Opportunity has been taken to clarify the texts proposed by the ad hoc Electrical Working Group for marginals 10 252 (1), 10 252 (2), 220 515 (1) and 220 515 (2).
  4. From a safety point of view it is considered necessary to include a specific reference to the mechanical safety of supply leads to permanently energised equipment. Consequently, this proposal includes a new paragraph 3 to marginal 220 515.
-