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INLAND TRANSPORT COMMITTEE

**Working Party on the Transport
of Dangerous Goods**

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Chapter 9.2: Battery master switch and permanently energized circuits

Transmitted by the European Automotive Suppliers Association (CLEPA)

Summary:

During the 72nd Session, The Netherlands submitted Informal Document No INF 14, which highlighted the possibility of differing interpretations of clause 9.2.2.5.1 with regard to the safety of supply leads to permanently energised electrical equipment. The Netherlands linked this interpretation problem with the installation of the battery master switch and, during discussions, with the certification of the battery master switch.

Action:

CLEPA proposes minor revisions of clauses 9.2.2.3.1 and 9.2.2.3.2, with respect to the battery master switch, and to clause 9.2.2.5.1, with respect to permanently energised circuits, in order to alleviate the possibility of differing interpretations.

Introduction:

The text for clause 9.2.2.5.1 (a) indicates that those parts of the electrical installation that remain energised when the battery master switch is open must be suitable for use in a hazardous area. The text also includes the supply leads to such equipment. In document INF 14, the Netherlands delegation identified a situation where electrical safety could be compromised by the installation of a single pole battery master switch in the ground lead with the only protection provided by a fuse in the supply lead.

Proposal:

Following discussion with the Netherlands, CLEPA proposes the following amendments to clauses 9.2.2.3.1, 9.2.2.3.2 and 9.2.2.5.1:

“9.2.2.3 Battery Master Switch

9.2.2.3.1 A switch for breaking the electrical circuits shall be placed as close to the battery as practicable. The switch shall be either a double or a single pole switch, however, if a single pole switch is used it shall be placed in the supply lead and not the earth lead.

9.2.2.3.2 A control device to facilitate the disconnecting and reconnecting functions of the switch shall be installed in the driver’s cab. It shall be readily accessible to the driver and distinctively marked. It shall be protected against inadvertent operation by either adding a protective cover, by using a dual movement control device or by other suitable means. Additional control devices may be installed provided they are distinctively marked and protected against inadvertent operation. If the control device(s) are electrically operated, the circuits of the control device(s) shall be subject to the requirements of 9.2.2.5.”.

“9.2.2.5 Permanently Energised Circuits

9.2.2.5.1 (a) Those parts of the electrical installation, including the leads which must remain energised when the battery master switch is open, shall be suitable for use in hazardous areas. Such equipment shall meet general requirements of IEC 60079 parts 0 and 14 and the additional requirements applicable from IEC 60079 parts 1, 2, 5, 6, 7, 11, 15 or 18².

(b) For the application of IEC 60079¹ part 14 the following classification shall be used:

Permanently energised electrical equipment, including the leads which is not subject to 9.2.2.3 and 9.2.2.4 shall meet the requirements for Zone 1 for electrical equipment in general or Zone 2 for electrical equipment situated in the driver's cab. The requirements for explosion group IIC, temperature class T6 shall be met.

However, for permanently energised electrical equipment installed in an environment where the temperature caused by non-electrical equipment situated in that environment exceeds the T6 temperature limit, the temperature classification of the permanently energised electrical equipment shall be at least that of the T4 temperature class.

(c) The supply leads for permanently energised equipment shall either comply with the provisions of IEC 60079-7 for Increased Safety and be protected by a fuse or automatic circuit breaker placed as close to the source of power as possible or, in the

case of Intrinsically Safe equipment, they shall be protected by a safety barrier placed as close to the source of power as practicable.”.

Justification:

The proposed revisions to clauses 9.2.2.3.1, 9.2.2.3.2 and 9.2.2.5.1 provide an interpretation that is in line with the intentions of the ad-hoc electrical working group that met in Bonn during 1999 and also ensure that the electrical safety provisions of the ADR are maximised.
