CHAPTER 13.2

REQUIREMENTS CONCERNING THE CONSTRUCTION OF BASE VEHICLES

13.2.2 Electrical equipment

13.2.2.1 General provisions

(no changes)

13.2.2.2 Wiring

13.2.2.2.1 (no changes)

13.2.2.2.2 (no changes)

13.2.2.3 Battery master switch [220 512]

13.2.2.3.1 [220 512(1)] A switch for breaking the electrical circuits shall be placed as close to the battery as practicable.

13.2.2.3.2 [220 512(2)] A 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 be 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.

13.2.2.3.3 (no changes)

13.2.2.3.4 [220 512(4)] The cable connections on the switch shall have protection

degree IP 54. 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 cab.

13.2.2.4 [220 513] Batteries

(no changes)

[220 514] Tachographs

(delete)

13.2.2.5 Permanently energized installations

13.2.2.5.1 (a) [220 515(1)] Those parts of the electrical installation including the leads which must remain enegized when the battery master switch is open, shall be suitable for use in hazardous areas. Such equipment shall meet the general requirements of IEC 60079 parts 0 and 14 and the additional requirements appliclable from IEC 60079 parts 1, 2, 5, 6, 7, 11, 15 or 18[7)].

[220 512(2)] For the application of IEC 60079 part 14[7)] the following classification shall be used:
Permanently energized electrical equipment including the leads which is not subject to paragraphs 13.2.2.3 and 13.2.2.4 [marginals 220 512 and 220 513] shall meet the requirements for Zone 1 for electrical equipment in general or meet the requirements for Zone 2 for electrical equipment situated in the driver's cab. The requirements for explosion group IIC, temperature class T6 shall be met.

13.2.2.5.2 [Bypass connections to the battery master switch for electrical equipment which must remain energized when the battery master

switch is open, shall be protected against overheating by suitable means, such as a fuse, a circuit breaker or a safety barrier (current limiter).]

13.2.2.6 and further: renumbered from 13.2.2.7 according to doc.TRANS/WP.15/1999/14 and further.

CHAPTER 13.3

REQUIREMENTS CONCERNING (EX/II AND EX/III) VEHICLES

Add the following to the proposed text in doc. TRANS/WP.15/1999/14:

13.3.5 Electrical equipment

13.3.5.1 The electrical installation on EX/III vehicles shall meet the requirements of paragraphs 13.2.2.2, 13.2.2.3, 13.2.2.4[, 13.2.2.5.2] and 13.2.2.6.

13.3.5.2 [11 251(1)] The rated voltage of the electric system shall not exceed 24 V.

13.3.5.3 [11 251(2)] The electrical installation in the load compartment shall be dust-protected (at least IP54 or equivalent) or, in the case of Compatibility Group J, flame proof Ex d (at least IP65 or equivalent).

CHAPTER 13.7

REQUIREMENTS CONCERNING TANK-VEHICLES (FIXED TANKS) BATTERY VEHICLES AND VEHICLES USED FOR THE CARRIAGE OF DANGEROUS GOODS IN DEMOUNTABLE TANKS OR IN TANK-CONTAINERS OF A CAPACITY GREATER THAN 3,000 LITRES (FL, OX AND AT VEHICLES)

Add the following to the proposed text in doc. TRANS/WP.15/1999/14:

13.7.7 Electrical equipment

13.7.7.1 The electrical installation on FL vehicles for which an approval according to paragraph 13.1.2 is required shall meet the requirements of paragraphs 13.2.2.2, 13.2.2.3, 13.2.2.4 and 13.2.2.6.

***Note**: For transitional provisions see also [marginal 10 605]*

13.7.7.2 [10 252(1)] Electrical equipment on FL vehicles, 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 requirements of IEC 60079 parts 0 and 14 and the additional requirements applicable from IEC 60079 parts 1, 2, 5, 6, 7, 11 or 18[7)]. The requirements for the relevant gas group according to the product being carried shall be met.

For the application of IEC 60079 part 14[7)] the following classification shall be used:

ZONE 0:
Inside tank compartments, fittings for filling and discharge and vapour recovery lines.

ZONE 1:

Inside cabinets for equipment used for loading and unloading and within 0,5 m of venting devices and pressure relief safety valves.

13.7.7.3 [10 252(2)] Permanently energized electrical equipment including the leads which is situated outside Zones 0 and 1 shall meet the requirements for Zone 1 for electrical equipment in general or meet the requirements for Zone 2 electrical equipment situated in the driver's cab.

Note (additional)

[7)] As an alternative, the general requirements of EN 50014 and the additional requirements of EN 50015, 50016, 50017, 50018, 50019, 50020 or 50028 may be used.

13.2.1 (amendments to the table)

		VEHICLE				OTHER
		EX/II	EX/III	AT	FL	OX
13.2.2	ELECTRICAL EQUIPMENT					
13.2.2.2	Wiring		X	Xa)	X	X
13.2.2.3[.1]	Battery master switch		[X]		X	
[13.2.2.3.2]	Battery master switch		[X]		X	
[13.2.2.3.3]	Battery master switch				X	
[13.2.2.3.4]	Battery master switch		[X]		X	
13.2.2.4	Batteries	X	X		X	
13.2.2.5[.1]	Permanently energized				X	
[13.2.2.5.2]	[Permanently energized]		[X]			
13.2.2.6	Electrical installation		X		X	