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## Economic Commission for Europe

### Inland Transport Committee

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

##### Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods

Geneva, 13–23 September 2011

Item 2 of the provisional agenda

##### Tanks

### Report of the informal working group on additive devices on tanks

Transmitted by the European Conference of Fuel Distributors (ECFD)<sup>1,2</sup>

#### *Summary*

**Explanatory summary:** To ensure the safe operation of petroleum tanks for UN No. 1202 DIESEL FUEL or GAS OIL or HEATING OIL, LIGHT, UN No. 1203 GASOLINE or MOTOR SPIRIT as well as for UN No. 1223 KEROSENE and UN No. 1863 FUEL, AVIATION, TURBINE ENGINE, equipped with additive devices, the minimum technical safety requirements for these elements of the service equipment of tanks as part of the emptying devices should be observed.

**Decision to be taken:**

- Add additive devices to the definition of service equipment in 1.2.1;
- Add a transitional provision for additive devices constructed and approved before 1 July 2013;
- Add a new special provision to 3.3.1 on the minimum safety technical requirements for additive devices and assignment to UN Nos. 1202, 1203, 1223 and 1863 in column (6) of Table A of Chapter 3.2;
- Add a new note after the heading of Chapter 6.8.

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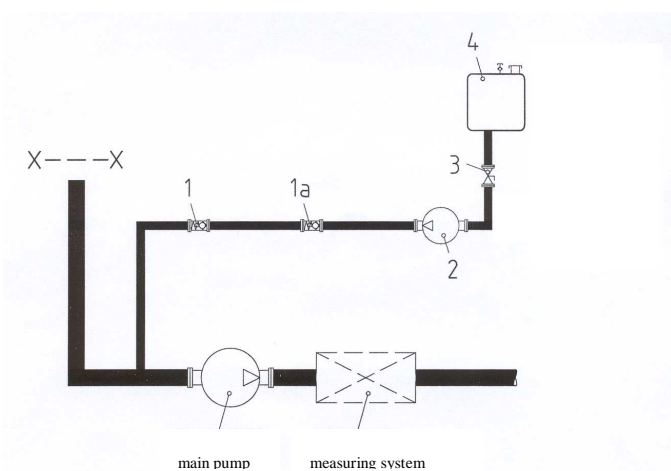
<sup>1</sup> In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para.106, ECE/TRANS/2010/8, programme activity 02.7 (c)).

<sup>2</sup> Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2011/31.

**Related documents:** ECE/TRANS/WP.15/AC.1/2010/14;  
 ECE/TRANS/WP.15/AC.1/118/Add.1, paragraph 22;  
 ECE/TRANS/WP.15/AC.1/2010/39 + informal document INF.10 from the  
 Joint Meeting in September 2010;  
 ECE/TRANS/WP.15/AC.1/120, paragraph 37 +  
 ECE/TRANS/WP.15/AC.1/120/Add.1, paragraph 1;  
 ECE/TRANS/WP.15/AC.1/2011/3 + informal document INF.34 from the  
 Joint Meeting in March 2011;  
 ECE/TRANS/WP.15/AC.1/122, paragraph 7 +  
 ECE/TRANS/WP.15/AC.1/122/Add.1, paragraph 11.

## Report

1. The informal working group met in Berlin on 18 May 2011 and was chaired by Mr Dirk Arne Kuhrt (UNITI – Federal Association of Medium-sized Petroleum Companies in Germany). Representatives of Austria, Germany, Luxembourg, Poland and the non-governmental organisation ECFD took part in the work.
2. The working group approved the mandate to continue the discussion on the basis of the report of the Joint Meeting’s working group on tanks (Bern, 21 – 25 March 2011) in paragraphs 9 to 12 of document ECE/TRANS/WP.15/AC.1/122/Add.1 and to revise ECFD’s proposal in document ECE/TRANS/WP.15/AC.1/2011/13.
3. To start the discussion, the representative of ECFD gave a brief outline of the additive device systems currently used on tanks for the carriage of UN 1202 HEATING OIL, LIGHT, using the example of vehicles approved in Germany. Additive devices on tanks can be shown in the form of a diagram as follows:



1. Non return valve
  - 1a. Non return valve, only if a non self-closing pump is fitted
2. Additive pump
3. Shut-off valve
4. Additive container

4. The working group then discussed in depth the questions referred to in paragraph 11 of the report of the working group on tanks (ECE/TRANS/WP.15/AC.1/122/Add.1) and made corrections to ECFD’s proposal.

5. The proposal was amended as follows:

### Chapter 1.2

1.2.1 Amend the end of paragraph (a) of the definition of "**Service equipment**" to read:

"...heat insulating devices, measuring instruments and additive devices;"

### Chapter 1.6

Add the following new transitional provisions:

"1.6.3.x/

1.6.4.y Additive devices according to special provision xyz constructed and approved before 1 July 2013, but which do not conform to the requirements of special provision xyz applicable as from 1 January 2013, may continue to be used until 1 July 2019."

### Chapter 3.2

#### Table A

For UN Nos. 1202, 1203, 1223 and 1863, add in column (6):

"xyz".

### Chapter 3.3

3.3.1 Add a new special provision xyz as follows:

"xyz This special provision only applies to tanks with additive devices.

Additive devices are devices for dispensing additives of UN Nos. 1202, 1993 or 3082 or non-dangerous goods into the emptying devices of tanks during discharge. They consist of elements such as connecting pipes, valves, pumps, shut-off valves and dosing devices which are permanently connected to the emptying devices and have up to four permanently attached additive receptacles with a maximum individual capacity of 120 litres inside or outside the shell, or which have a device for connecting removable receptacles.

Additive devices for dispensing additives may be used, provided the following conditions are met:

Additive receptacles which are permanently fixed to the additive device on the outside of the shell shall be made of a metallic material and shall comply with the following minimum wall thickness requirements:

<i>Materiel</i>	<i>Minimum wall thickness</i>
Austenitic stainless steels	2.5 mm
Other steels	3 mm
Aluminium alloys	4 mm
Pure aluminium of 99.80%	6 mm

The sides of these receptacles may be without radiuses or curvatures. Welding seams shall be carried out in accordance with the rules of technology.

Additive receptacles shall be equipped with ventilation devices, where appropriate, with a flame arrester (if the flashpoint of the additive does not exceed 60 °C) and protection against leakage of contents in the event of overturning. The test pressure of these

receptacles shall be at least 0.3 bar. In addition, the whole additive device shall meet the requirements of 6.8.2.2.1.

Additive receptacles that are an integral part of the shell itself shall be arranged inside or outside the tank according to the construction requirements for tanks in 6.8.2.

Additive receptacles that can be separated from the tank, i.e. that have to be connected to the dispensing and dosing devices and connection pipes of the additive devices, shall be metallic packagings in accordance with Chapter 6.1. If the additives are not dangerous goods, non-metallic packagings in accordance with Chapter 6.1 may also be used. These additive receptacles may only be connected during discharge of the tank. During carriage, the connection device shall be tightly sealed and the additive receptacle shall be carried separately as a package.

Additive receptacles which are permanently fixed on the outside of the tank shall be marked as packages in accordance with 5.2.2. However, the carriage of additives in the additive receptacles does not affect the orange-coloured marking of tanks according to 5.3.2.

(ADR only:) Section 11 of the ADR certificate of approval in accordance with Chapter 9.1 shall include a reference to the additive device.

If dangerous goods are carried as additives in permanently fixed receptacles, the entry in the transport document may be limited to the information required in accordance with 5.4.1.1.1 (a) to (d) (ADR only:) and (k). The following shall also be entered in the transport document: "IN ADDITIVE DEVICE" or "IN ADDITIVE RECEPTACLE".

## **Chapter 6.8**

The existing Note under the heading of Chapter 6.8 becomes Note 1.

Add a new Note 2 as follows:

"2. For tanks with additive devices see special provision xyz."

6. Justification:

- Additive devices must be included in the tank approval and should therefore, as equipment on these tanks, be subject to the initial and periodic inspections as well as the intermediate inspections and exceptional checks. This correlation is ensured by including the additive device in the definition of service equipment. If tanks are fitted with additive devices, a corresponding remark should also be included in the inspection certificates in accordance with 6.8.2.4.5. If the vehicles involved have fixed tanks (tank-vehicles), this remark should be included in section 11 (Remarks) of the ADR certificate of approval.
- The transitional provision takes account of the fact that many tanks with additive devices are already in use, and as proposed by the working group on tanks, may continue to be used for a specified period.
- Within the special provision, depending on the arrangement of the additive receptacle on the tank (configuration), the requirements are made clear:
  1. Permanently attached receptacles outside the shell may not have any direct connection to the tank. Such receptacles are comparable to the requirements for MEMU. For this reason, the minimum wall thicknesses in Chapter 6.12 for these receptacles should be included in the special provision.
  2. Receptacles that are elements of the shell have a direct connection to the tank (the whole or part of the tank wall also forms the wall of the additive receptacle) and are deemed to be a tank compartment, a receptacle in the tank or outside the tank. With this configuration, the provisions of Chapter 6.8 must always apply.

3. Removable receptacles are metallic packagings in accordance with Chapter 6.1 if additives of UN Nos. 1202, 1993 or 3082 are used. This requirement does not apply to additives that are not dangerous goods. The receptacles are approved packagings and are not taken into account in the tank approval.

- The individual maximum capacity of additive receptacles has been set at 120 litres so that as far as we are aware today, the total quantity of a product carried in the largest tank technically possible can be safely mixed with the required amount of additive when the tank is fully discharged. Other additive receptacles enable other sorts of additives to be carried. Allowing the proposed four receptacles would completely cover customers' current requirements. The most common design in the petroleum industry is a 40 litre receptacle.
- In the case of tanks with additive devices in which substances other than those of UN Nos. 1202, 1203, 1223 and 1863 are carried in a separate tank compartment, the tank compartment concerned is emptied without using the additive devices. However, this case should not be dealt with in the regulations, but in the operating instructions for the discharge device.
- Marking provisions and information required in the transport document have been included in the special provision. This was necessary in order to make clear which provisions apply. As a result, the other provisions need not be applied. For example, entering the total quantity of additive in the transport document is not required, because otherwise this information would have to be corrected before continuing the journey every time some additive was dispensed.

7. The working group is of the view that it is not necessary to amend the approach to the provision (e.g. to check the extent to which an exemption might be possible), but that the route taken by the working group on tanks to include the proposed special provision should be concluded. Any other approach would cause delay, and should be avoided in the interest of preventing the unregulated appearance of more tanks with additive devices. For this reason the Joint Meeting should approve the proposed solution and make any amendments that might be necessary at a later stage.

8. The report will be submitted to the Joint Meeting in September 2011.

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