

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

Ninety-second session

Geneva, 8–10 May 2012

Item 5 of the provisional agenda

17 April 2012

Work of the RID/ADR/ADN Joint Meeting

Additive devices

Transmitted by the Government of Belgium

Background documents

ECE/TRANS/WP.15/AC.1/2011/31 (ECFD)

INF.22 ADR/RID/ADN Joint Meeting Spring Session 2012 (Belgium)

Introduction

1. Since 2010, the Joint Meeting has received several papers from ECFD regarding the use of additive devices for tanks and two working groups were created to draft appropriate provisions. The last working group met in Bonn on 9 and 10 February 2012 and produced INF.22 which was presented to the Joint Meeting Spring Session of this year.
2. Ultimately, the Tank Working group and the plenary of the Joint Meeting amended INF.22 and as this was viewed as a specific road tank issue, referred the results of the work back to the WP.15 for final consideration. As chair of the last working group, Belgium agreed to submit the amended INF.22 to the WP.15.
3. Conclusions, draft proposals and justification per issue:

Proposal

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

“...*heating, heat insulating and additive* devices and measuring instruments;”.

Justification

5. The proposed amendment ensures that additive devices are parts of the service equipment of tanks. This allows for re-use of the existing regulatory provisions on service equipment to the largest extent possible and ensures compatibility with these existing provisions. This principle was previously discussed in the tank working group and taken over by the Bonn working group.

Proposal

6. Add the following new transitional provision in 1.6.3:

“1.6.3.x Fixed tanks (tank-vehicles) and demountable tanks intended for the carriage of UN Nos. 1202, 1203, 1223, 3475 and aviation fuel classified under UN Nos. 1268 or 1863, equipped with additive devices designed and constructed before 1 July 20[13] but which do not conform to the requirements of special provision XYZ applicable as from 1 January 20[13], may continue to be used. However, the testing, marking, labelling and placarding and transport document requirements shall be met.”

Justification

7. A transitional measure was drafted only for fixed tanks (tank-vehicles) and demountable tanks as it was felt by the working group and the United Kingdom's comments to only apply to ADR and not tank-wagons in RID. The proposed transitional measure allows the additive devices currently in use to continue to be used until the end of their lifetime. Alternatively, the Bonn working group considered specifying a period of 25 years, which is commonly regarded as the lifetime of a tank. However, the working group was of the opinion that the testing, marking and transport document requirements should apply also to the existing systems. Depending on the urgency felt to include the provisions regarding additive devices and the possibilities of the UNECE secretariat, an inclusion in either the ADR 2013 or 2015 version is envisaged.

Proposal

8. Add in column (6) of Table A of Chapter 3.2 for UN Nos. 1202, 1203, 1223, 3475, 1268 and 1863:

"XYZ".

Justification

9. The mentioned UN Nos were discussed in the tank working group and are also found in paragraph 1.8.3.13 or 5.3.2.1.3, which gives an overview of all the UN Nos associated with commonly transported liquid fuels in relation with the provisions related to the safety advisor or orange plate marking. It was proposed to add the special provision to the UN entries of the carried fuels and not the UN entries of the additives in line with the last discussions in the tank working group.

Proposal

10. Add a new special provision XYZ to section 3.3.1 as follows:

"XYZ Fixed tanks (tank-vehicles) and demountable tanks used for the carriage of substances under this entry may be equipped with additive devices.

Additive devices:

- are parts of the service equipment for dispensing additives of UN 1202, UN 1993 packing group II or III, UN 3082 or non-dangerous goods during discharge of the tank,
- consist of elements such as connecting pipes, valves, pumps and dosing devices which are permanently connected to the emptying device of the tank's service equipment,
- include means of containment which are:
 - an integral part of the shell, or
 - permanently fixed to the exterior of the tank or tank vehicle.

Alternatively, additive devices may have connectors for connecting removable packagings. In this latter case, the removable packaging itself is not considered part of the additive device.

Additive devices shall meet the following requirements depending on their configuration:

(a) Construction requirements for the means of containment of an additive device:

- (i) As an integral part of the shell, they shall meet the relevant provisions of Chapter 6.8.
- (ii) When permanently fixed to the exterior of the tank or to the tank-vehicle, they are not subject to the construction provisions of ADR provided they comply with the following provisions:

They shall be made of a metallic material and comply with the following minimum wall thickness requirements:

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

Welding seams shall be carried out in accordance with 6.8.2.1.23. The test pressure of the means of containment shall be at least 0,3 bar.

- (iii) Removable packagings are not considered to be a means of containment as part of the additive device. Removable packagings which are connectable to the additive device shall be metal packagings and meet the relevant construction requirements of Chapter 6.1, as applicable for the concerned additive.
- (b) Additional requirements for use of means of containment and additive devices
- (i) In case of a) (i) above, no additional requirements.
 - (ii) In case of a) (ii) above, the total capacity of the means of containment shall not exceed 400 litres per vehicle.
 - (iii) In case of a) (iii) above, paragraphs 7.5.7.5 and 8.3.3 shall not apply. The removable packagings may only be connected to the additive device during discharge of the tank. During carriage, the closures and connectors shall be closed in accordance with design specifications.
- (c) Testing requirements for additive devices

The provisions of 6.8.2.4 shall apply for the additive device. However, in case of a) (ii) above, at the moment of the initial, intermediate or periodic inspection of the tank, the means of containment of the additive device shall be subject to a leakproofness test at a test pressure of at least 0,3 bar.

(d) Marking, labelling and placarding provisions for the means of containment of additive devices

(i) In case of a) (i) above, no marking, labelling or placarding provisions related to the additive are required.

(ii) In case of a) (ii) above, the means of containment shall be marked and labelled in accordance with 5.2.1 and 5.2.2. However, the vehicle markings for the tank in accordance with 5.3 are sufficient for the tank contents and the additives.

(iii) In case of a) (iii), not applicable.

(e) Transport document requirements

The general information in the transport document for the dangerous goods carried as additives may be limited to the information required in accordance with 5.4.1.1.1 (a) to (d) and (k). The following shall also be entered in the transport document: "Special Provision XYZ".

(f) Additional tank and vehicle approval requirements

Additive devices shall be included in the type approval of the tank in accordance with 6.8.2.3.

***NOTE:** For tanks equipped or intended to be equipped with additive devices where the additive device is not included in the original type approval of the tank, see 6.8.2.3.4.*

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

Justification

11. Introduction: A general statement was proposed by the working group to allow additive systems on tanks for liquid fuels and to attribute the special provision to these liquid fuels.

12. Definition: The proposed definition clearly places additive devices under the tank equipments and limits the allowed additives to those discussed in previous proposals, with the additional limitation of prohibiting PG I substances under UN 1993. The second bullet point contains a non-limitative descriptive list of the components usually found on an additive system. The last bullet point deals with the means of containment, where these means of containment are only considered as a part of the additive device when they are either an integral part of the shell or permanently fixed to it. As put forward in the Austrian comments, it was repeated that a removable packaging itself is not considered part of this equipment. Because the removable packaging will require a special fitting to properly connect to the system this should be part of the tested prototype. It is not prohibited to carry packagings on a tank-vehicle along with the load in the tank. The United Kingdom's comments that no "tank within a tank" should be allowed was not taken over by the working group as the inspection situation was not considered different from when larger items of pipework are installed within the shell.

13. Construction: General reference is made to 6.8 for means of containment which are integral parts of the shell. For the permanently fixed means of containment, the proposed

wall thickness from 2011/31 was taken over. The reference to 6.8.2.1.23 was questioned in the United Kingdom's comments but retained. It was clear from the current text of 6.8.2.1.23 that only the first paragraph is applicable which contains general text on qualitative welding. The proposed test pressure of 0.3 bar from 2011/31 was kept. Text between square brackets was proposed for the breather device, the flame arrester, overfilling, overturning and back-pressure effects for separate consideration in line with the United Kingdom's comments. The last case of removable packagings was worded to indicate again that the packaging itself is not part of the equipment and the requirement for metal packagings was put between square brackets for separate consideration. Lastly, the United Kingdom's comments on subdividing construction and use requirements were taken into account.

14. Use: For use, it was clear that as a part of the tank equipment, the normal rules for tank equipment applies and additional provisions were drafted for the case of permanently fixed means of containment and removable packagings. The United Kingdom's comments and proposed text were incorporated into the proposal to specify only a general maximum volume of 400 litres and to define the use conditions for connecting packagings. Additionally, the working group felt that connecting packages during deliveries is not in conformity with 8.3.3 and addressed this in the special provision.

15. Testing: From the definition, it is clear that the normal testing procedures for tank equipments apply. Only in the case of permanently fixed means of containment, a separate provision was included to demand a 0.3 bar leakproofness test at the moments of the inspections of the parent tank.

16. Marking: For case I, additional marking was deemed not necessary. For case II, the United Kingdom's text was taken over. For case III, special marking requirements are not applicable as the packaging is not considered part of the additive device and is always subject to the general marking provisions for packagings.

17. Transport document: For the additives, a simplified reference in the transport document was deemed adequate as it would be very hard to indicate for instance the actual quantity of additive present during delivery sales operations. A reference to the special provisions was proposed instead of the words "in additive device" or "in additive receptacle" by a majority of the working group.

18. Approval: The working group decided to keep the inclusions of the additive device in the tank approval certificate as it is part of the tank equipment and to include a reference in the vehicle approval certificate's comments section.

Proposal

19. The existing Note under the heading of Chapter 6.8 becomes Note 1. Add a new Note 2 as follows:

"NOTE 2: For fixed tanks (tank-vehicles) and demountable tanks with additive devices, see special provision XYZ."

Justification

20. For clarity and user-friendliness it was proposed to add a reference to the special provision at the start of chapter 6.8.