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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

REPORT OF THE JOINT MEETING OF THE RID COMMITTEE OF EXPERTS  
AND THE WORKING PARTY ON THE TRANSPORT OF DANGEROUS GOODS  
ON THE SESSION<sup>1</sup>

held in Bern from 8 to 11 September 2009 and in Geneva from 14 to 18 September 2009

Addendum

Annex II

Report of the Working Group on Tanks

The secretariat has received from the Intergovernmental Organisation for International Carriage by Rail (OTIF) the English translation of the report of the working group on tanks, prepared in German and partially in English by the representative of Germany in the course of the session (informal document INF.55). The report is reproduced below.

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<sup>1</sup> Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2009-B/Add.2.

## REPORT OF THE WORKING GROUP ON TANKS

1. The working group on tanks met in Geneva from 14 to 16 September 2009, concurrently with the RID/ADR/ADN Joint Meeting, which had entrusted it with the relevant mandate. The documents were presented in plenary.
2. The working group considered the following official and informal documents:  
  
ECE/TRANS/WP.15/AC.1/2009/10 (Germany), ECE/TRANS/WP.15/AC.1/2009/16, paragraphs 20 to 24 and ECE/TRANS/WP.15/AC.1/2009/16/Add.1 (Secretariat), ECE/TRANS/WP.15/AC.1/2009/18 (UIP), ECE/TRANS/WP.15/AC.1/2009/33 (Belgium), ECE/TRANS/WP.15/AC.1/2009/34 (UIP), ECE/TRANS/WP.15/AC.1/2009/37 (France), ECE/TRANS/WP.15/AC.1/2009/38 (France), ECE/TRANS/WP.15/AC.1/2009/47 (AEGPL), ECE/TRANS/WP.15/AC.1/2009/50 (Austria), informal documents INF.5 (Sweden), INF.22 (Belgium), INF.29 (Germany), INF.34 (UIP) and INF.35 (Portugal).
3. The working group was made up of nineteen experts from eleven countries and five international non-governmental organizations (NGOs).
4. The order of discussion of the documents was determined by the requirements and presence of the experts.

### **Item 1: Document ECE/TRANS/WP.15/AC.1/2009/18 (UIP) – 6.8.4, Special provision TT8**

5. In March 2009, UIP had submitted informal document INF.17 dealing with this issue, which was amended by the official proposal in ECE/TRANS/WP.15/AC.1/2009/18. The proposal concerned special provision TT8, which for certain tanks approved for the carriage of UN 1005 AMMONIA, ANHYDROUS, prescribes, at each periodic test according to 6.8.2.4.2, magnetic particle inspections to detect surface cracking. The aim of this proposal was to ensure that the tanks subjected to this inspection were not just those that were approved for this gas, but those which actually carry it. TT8 should be amended to take account of this.
6. The working group discussed the safety aspects of the proposal and finally adopted the proposal, with the amendment that the marking of the gas on the tank plate and/or the tank would be removed when the last magnetic particle inspection was carried out. This would ensure that this inspection would not be forgotten once the marking of the gas was removed.
7. The editorially amended text reads as follows:

"TT8 Tanks on which UN 1005 AMMONIA, ANHYDROUS is marked in accordance with 6.8.3.5.1 to 6.8.3.5.3 and constructed of fine-grained steel with a yield strength of more than 400 N/mm<sup>2</sup> in accordance with the material standard, shall be subjected at each periodic test according to 6.8.2.4.2, to magnetic particle inspections to detect surface cracking.

For the lower part of each shell at least 20% of the length of each circumferential and longitudinal weld shall, together with all nozzle welds and any repair or ground areas, be inspected.

**If the marking of the substance on the tank and/or tank plate is removed, a magnetic particle inspection shall be carried out and these actions recorded in the inspection certificate attached to the tank record."**

**Item 2: Document ECE/TRANS/WP.15/AC.1/2009/33 (Belgium) – Period of validity of type approvals and transitional measures for standards**

**Item 3: Document ECE/TRANS/WP.15/AC.1/2009/34 (UIP) – Arrangement for the further use of tanks built in accordance with a type approval that has been withdrawn**

8. The proposal in ECE/TRANS/WP.15/AC.1/2009/33 was to clarify the wording "if they may continue to be used" in the new 1.8.7.2.4 and 6.8.2.3.3 of RID/ADR 2011. This problem was discussed at length, together with UIP's proposal ECE/TRANS/WP.15/AC.1/2009/34, which dealt with the same problem.

9. The working group saw problems in practice with the requirement "including referenced standards" contained in brackets in document ECE/TRANS/WP.15/AC.1/2009/33 and decided to delete it. This was justified in particular by the fact that every standard included in RID/ADR must be in accordance with the regulations and the regulations must be observed in all cases (6.8.2.6). This was also ensured by the working group on standards.

10. The working group again discussed the applicability of the texts in view of the transitional periods and proposed a new text for this. The unanimously adopted texts are as follows:

1.8.7.2.4 Introduce the following new paragraph after the one ending with "before the expiry or the withdrawal if they may continue to be used":

"Pressure receptacles, tanks, battery-wagons/vehicles or MEGCs manufactured in accordance with a type approval may continue to be used after the type approval has expired or has been withdrawn so long as they are still in conformity with the current relevant technical requirements of RID/ADR ~~(including referenced standards)~~. If they are no longer in conformity with the current relevant requirements of RID/ADR ~~(including referenced standards)~~ because of a change in those requirements, they may continue to be used only if such use is permitted by relevant transitional measures in Chapter 1.6."

6.8.2.3.3 Introduce the following new paragraph after the one ending with "before the expiry or the withdrawal if they may continue to be used":

"Tanks, battery-wagons/vehicles or MEGCs manufactured in accordance with a type approval may continue to be used after the type approval has expired or has been withdrawn so long as they are still in conformity with the current relevant technical

requirements of RID/ADR (~~including referenced standards~~). If they are no longer in conformity with the current relevant requirements of RID/ADR (~~including referenced standards~~) because of a change in those requirements, they may continue to be used only if such use is permitted by relevant transitional measures in Chapter 1.6."

Insert the following new transitional measures:

"1.6.3.x Tank-wagons and tanks forming elements of battery-wagons / Fixed tanks (tank-vehicles), demountable tanks and tanks forming elements of battery-vehicles designed and constructed in accordance with standards applicable at the time of their construction (see 6.8.2.6 and 6.8.3.6) according to the provisions of RID/ADR which were applicable at that time may still be used."

"1.6.4.x Tank-containers and tanks forming elements of MEGC designed and constructed in accordance with standards applicable at the time of their construction (see 6.8.2.6 and 6.8.3.6) according to the provisions of RID/ADR which were applicable at that time may still be used."

11. The continued use of tanks in the event of future safety-related amendments to the regulations or standards must be dealt with by means of new transitional provisions.

**Item 4: Document ECE/TRANS/WP.15/AC.1/2009/50 (Austria) – Marking of tanks with the letter "S"**

12. The aim of the Austrian proposal was to make clear that the tank plate of tanks with a capacity of 7 500 litres or less must not be marked with the symbol "S". The proposal was adopted with a minor editorial amendment without discussion.

6.8.2.5.1 Amend the seventh indent to read as follows:

(RID:)

"- capacity of the shell<sup>13</sup> – in the case of multiple-compartment shells, the capacity of each compartment –,

followed by the symbol "S" when the shells or the compartments **of more than 7 500 litres** are divided by surge plates into sections of not more than 7 500 litres capacity;"

(ADR:)

"- capacity of the shell<sup>12</sup> – in the case of multiple-compartment shells, the capacity of each compartment –, followed by the symbol "S" when the shells or the compartments **of more than 7 500 litres** are divided by surge plates into sections of not more than 7 500 litres capacity;"

**Item 5: Informal document INF.35 (Portugal) – Standards**

13. In this informal document, it was pointed out that the calculation for partitions in Appendix A.5 of standard EN 13094 did not accord with the text in 6.4.2 in the general part of the standard. After examining the documents, the working group acknowledged the error in Appendix A.5 of the standard and supported Portugal's concern.

14. However, the working group was not in favour of amending RID/ADR immediately. The Joint Meeting was asked to request working group 2 of CEN/TC 296 to correct the error, with reference to this report.

**Item 6: Document ECE/TRANS/WP.15/AC.1/2009/47 (AEGPL) – Instant-closing internal safety device on tanks**

15. The working group discussed the issue of the filling device on tank-vehicles for the gases listed in 6.8.3.2.3. It was again noted that the difference between an internal stop valve and an internal non-return valve with "metal to metal sealing" was that with the latter, the seal effect was not as great. The proposal to delete the footnote in the new text was rejected, as the working group did not think that the text contained in the proposal brought any technical improvement. An editorial amendment to the text did not achieve the expected aim either.

16. The working group had a final discussion on possible solutions for tanks which meet the protective aim of the provisions by using metal on metal sealings. This might be, for example, an additional ball valve or a similar device. However, this would require a new proposal.

**Item 7: Document ECE/TRANS/WP.15/AC.1/2009/10 (Germany) – Flame arrester requirements**

17. This item was discussed with document ECE/TRANS/WP.15/AC.1/2008/20 (Sweden) at the autumn 2008 session of the Joint Meeting and the result was submitted by Germany in informal document INF.5 for the March 2009 session. However, no tank-related issues had been dealt with at that last session. With regard to the position of flame arresters, the working group proposed a text for inclusion in the regulations for protective purposes.

18. For tanks with ventilation valves according to 6.8.2.2.6, the question arose as to which standard should be referred to with regard to the performance requirements of flame arresters (ISO EN 16852 or EN 12874). Members of the working group were asked to establish their opinion on this by the next session. It was also proposed that a CEN/TC 296 working group should clarify the questions of the type and the position of the flame arresters.

19. Following a further brief discussion, the following text was adopted:

6.8.2.2.3 Amend the second paragraph to read:

"Vacuum valves (RID: and self-operating ventilation valves) **and venting systems (see 6.8.2.2.6)** used on tanks intended for the carriage of substances meeting the flash-point criteria of Class 3, shall prevent the immediate passage of flame into the tank **by means of a suitable device to prevent the propagation of a flame**, or the shell of the tank shall be capable of withstanding, without leakage, an explosion resulting from the passage of the flame."

Insert the following new last paragraph:

**"If the protection consists of a suitable flame trap or flame arrester, it shall be positioned as close as possible to the shell or the shell compartment. For multi-compartment tanks, each compartment shall be protected separately."**

Insert the following new transitional measure:

**Tanks constructed before 1 January 2011 in accordance with the requirements of 6.8.2.2.3 in force up to 31 December 2010 but which do not, however, conform to the requirements of 6.8.2.2.3, second paragraph, concerning the position of the flame trap or flame arrester may still be used."**

20. Sweden was of the view that this transitional measure should not apply to tanks with vacuum valves, as the requirements for these had not been amended. In addition, the transitional measure for tanks with ventilation valves should be limited to the next periodic test with regard to their use. However, the majority of the working group did not see the need for this.

**Item 8: Document ECE/TRANS/WP.15/AC.1/2009/37 (France) – 4.3.5: Special provision TU35**

21. This proposal was discussed bearing in mind the assigned products (UN 3256 and UN 3257), which are carried at high temperatures. The wording "Taking adequate measures to nullify any hazard" is not otherwise specified and leads to problems when carrying out checks. Although no subsidiary hazard was assigned to these substances and the tanks cooled down when empty and uncleaned, the majority of the group was not able to support the proposal, particularly with regard to the marking of these tanks.

**Item 9: Document ECE/TRANS/WP.15/AC.1/2009/38 (France) – Interpretation of paragraph 6.9.2.2 (c) of standard EN 13094:2008**

22. In this proposal, France referred to tank constructions that did not comply with the requirements of ADR 6.8.2.1.20 (b) 4. and standard EN 13094. However, all members considered these constructions to be a good solution. For this reason, the provisions in ADR and the standard should be adapted. The Joint Meeting was asked to suggest an amendment to standard EN 13094 at CEN/TC 296.

23. The working group also proposed to make the following amendment to the version of ADR that would enter into force in 2011:

6.8.2.1.20 (b) Under 4., in the last sentence of the first paragraph, delete "the outside of".

**Item 10: Informal document INF.5 (Sweden) – Limitation of tank volumes**

24. With this informal document, Sweden informed the working group about an accident involving a single-compartment tank with a capacity of 56 600 litres, in which the driver was killed and two bridges were destroyed. The working group was invited to discuss the following aspects:

- limitation of the capacity (is it conceivable to limit it?);
- maximum capacity (are 7 500 or 15 000 litres acceptable as maximum compartment capacity?);
- tank type (should all tank types be considered?);
- tank material (should all materials be included?);
- class of dangerous goods (should all classes be included?).

25. The outcome of the discussion was that in the working group's opinion, limiting the capacity of the compartment for certain tanks should be supported in principle, but some aspects should be considered:

- for higher quality tanks (definition still to be drafted) and double wall tanks with vacuum insulation, the capacity need not be limited;
- for gas tanks, classification would be difficult because of the different types of construction;
- tanks with several compartments have more openings with more pieces of equipment; for this reason, it would not lead to an improvement in safety in the event of an accident;
- for unpressurised tanks made of aluminium alloys, some countries have volume limitations (7 500 to 7 600 litres);
- it would be difficult to include portable tanks;
- in some cases, a risk assessment would be recommended.

**Item 11: Informal document INF.22 (Belgium) – Simultaneous approval as a portable tank and a tank-container**

26. During a roadside check of a vehicle, Belgium had become aware of differences between Chapters 6.7 and 6.8 which led to misunderstandings. Among other things, the working group was asked to list the differences between Chapters 6.7 and 6.8, to indicate which tank type displays the acceptable level of safety and to propose suitable amendments to columns (12) and (13) of Table A.

27. After a lengthy discussion in the working group, it was established that the tank requirements in RID/ADR Chapters 6.7 and 6.8 assume different approaches from the point of view of technical safety and are not therefore directly comparable. This is made clear by the following table, which provides some examples of this:

<b>RID/ADR (tank-containers)</b>	<b>UN (portable tanks)</b>
Unpressurised tanks allowed	Tanks with a test pressure of at least 1.5 bar
Safety devices rare	Generally safety devices
Notional calculation pressure	Increased wall thickness
Reduced wall thickness allowed for all tanks with suitable protection	Reduced wall thickness only allowed for T1 and T2 tanks
Design temperature -20 °C	Design temperature -40 °C
Tank codes and tank instructions based on different rationalised approaches	

28. Against this background, the working group did not think it would be able to carry out the work that would be needed to answer Belgium's question in the framework of its usual working methods. The Joint Meeting was advised to set up a separate working group for this purpose if need be.

**Item 12: Informal document INF.29 (Germany) – Manhole covers of tanks**

29. This informal document highlighted problems with the leakproofness of dome covers on tank-vehicles with unpressurised tanks not in conformity with standards EN 13314 or EN 13317 in the event of accidents. In introducing the document, it was pointed out that these problems have occurred particularly with old and spring-loaded covers. It was therefore considered necessary to exclude these covers from the standards. After the conclusion of investigations, Germany will come back with a suitable proposal.

**Item 13: Informal document INF.34 (UIP) – Editorial error in Chapter 5.4 of standard EN 14025:2008**

30. The working group agreed in principle with the proposal by UIP. It was noted that standard EN 13094 did not apply to tank-wagons (Note 2 concerning the scope of the standard) and that the technical solutions listed in this standard were not entirely necessary for tank-wagons.

31. However, the working group did not consider UIP's request to add a note to RID (6.8.2.6) to waive the second paragraph of Chapter 5.4 of standard EN 14025 to be necessary.



The Joint Meeting was asked to request working group 3 of CEN/TC 296 to correct the relevant text.

**Item 14: Documents ECE/TRANS/WP.15/AC.1/2009/16, paragraphs 20 to 24, and ECE/TRANS/WP.15/AC.1/2009/16/Add.1 (Secretariat) – Report of the Ad hoc Working Group on the Harmonization of RID/ADR/ADN with the United Nations Recommendations on the Transport of Dangerous Goods**

32. The working group dealt with the questions that had been raised by the Ad hoc Working Group on the Harmonization of RID/ADR/ADN with the United Nations Recommendations on the Transport of Dangerous Goods in paragraphs 20 to 24 of document ECE/TRANS/WP.15/AC.1/2009/16. It was recalled that the principles for assignment of tank codes and tank instructions to substances were different in RID/ADR/ADN and in the United Nations Recommendations. Hence those tank codes and tank instructions are not fully comparable.

33. With regard to paragraphs 20 to 22, it was recommended in general to choose tank code L15CH for substances toxic by inhalation to which tank instruction T22 was assigned, although the rationalised approach would also allow assignment to tank code L10CH. From this it followed that for all substances with special provision 354 to which tank instruction T20 was assigned, tank code L10CH should be applied.

34. With regard to paragraphs 23 and 24, the working group checked the entries in document ECE/TRANS/WP.15/AC.1/2009/16/Add.1. As a result, "SGAV" was entered in column (12) for the UN 1471 entries and "SGAN" was entered for the UN 3487 entries. The working group was of the view that for the other entries, the correct information had already been assigned.

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