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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****Report of the Joint Meeting of the RID Committee of Experts  
and the Working Party on the Transport of Dangerous  
Goods on its Spring 2011 session<sup>1</sup>**

held in Bern from 21-25 March 2011

**Addendum<sup>2</sup>****Annex I****Report of the Working Group on Tanks**

The secretariat has received from the Intergovernmental Organisation for International Carriage by Rail (OTIF) the final English version of the report of the Working Group on Tanks, originally issued as informal document INF.42. The report is reproduced below.

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<sup>1</sup> Circulated by the Intergovernmental Organization for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2011-A. Unless otherwise indicated, the other documents referred to in this report under the symbol ECE/TRANS/WP.15/AC.1/ followed by the year and a serial number were circulated by OTIF under the symbol OTIF/RID/RC/ followed by the year and the same serial number.

<sup>2</sup> Circulated by the Intergovernmental Organization for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2011-A/Add.1.

## Report of the Working Group on Tanks

1. The Working Group on Tanks met from 21 to 23 March 2011 in Bern on the basis of an appropriate mandate from the RID/ADR/ADN Joint Meeting. The documents were submitted to the plenary session.
2. The Working Group on Tanks dealt with the following official and informal documents:
  - ECE/TRANS/WP.15/AC.1/2010/49 (Italy)
  - ECE/TRANS/WP.15/AC.1/2011/3 (ECFD)
  - ECE/TRANS/WP.15/AC.1/2011/9 (Sweden)
  - ECE/TRANS/WP.15/AC.1/2011/17 (Sweden)
  - ECE/TRANS/WP.15/AC.1/2011/18 (Germany/UIP)
  - ECE/TRANS/WP.15/AC.1/2011/20 (Germany)
  - ECE/TRANS/WP.15/AC.1/2011/23 (UIP)
  - ECE/TRANS/WP.15/AC.1/2011/24 (UIP)
  - INF.7 (UIC)
  - INF.13 (Netherlands)
  - INF.17 (Germany)
  - INF.21 (OTIF Secretariat)
  - INF.23 (UIP)
  - INF.31 (France)
  - INF.32 (Italy)
  - INF.33 (Sweden)
  - INF.34 (Austria)
3. The Working Group on Tanks was comprised of thirteen experts from ten States and representatives from eight non-governmental organisations.
4. The documents were dealt with in a sequence depending on requirements and the presence of experts.

**Item 1: Document ECE/TRANS/WP.15/AC.1/2010/49 and informal document INF.32 (Italy) – Transport of tetrafluoroethylene, stabilized (UN No. 1081)**

5. The representative of Italy presented document ECE/TRANS/WP.15/AC.1/2010/49, previously presented at the March and September 2010 sessions of the Working Group on Tanks, together with informal document INF.32. The issue put forward was that according to Table A of Chapter 3.2, UN No. 1081 Tetrafluoroethylene, stabilized, was only allowed in UN MEGCs and in receptacles according to packing instruction P200. This leads to practical problems for industry since the receptacles are subject to TPED.
6. After discussion, the proposed addition of the tank code "PxBN(M)" in column (12) of Table A was accepted by the working group. Since P200 imposes a 200 bar test pressure, the Working Group was of the opinion that the use of pressure drums with welded elements was to be avoided and only seamless receptacles were to be allowed.

7. For this reason, the Working Group proposed inserting a new TU special provision in section 4.3.5, based on the existing TU17, to read as follows:

"TU40 Only to be carried in battery-wagons/battery-vehicles or MEGCs, the elements of which are composed of seamless receptacles."

For UN No. 1081 in Table A of Chapter 3.2 of RID, TU38, TU40, TE22, TA4 and TT9 should be added, and in the same Table in ADR, TU40, TA4 and TT9 should be added.

Consequently, a new line should be added in the table of 4.3.3.2.5 of Chapter 4.3, as follows:

1081	TETRAFLUORETHYLENE, STABILIZED	2F	Only in battery-wagons/battery-vehicles and MEGCs composed of seamless receptacles
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Note 1 of 4.3.3.2.5 should be amended accordingly.

8. Finally, the Working Group took note of the question raised by Italy with regard to the provisions for other similar gases for which the letter "(M)" appears both in columns (10) and (12) of Table A (e.g. UN No. 1860, UN No. 1959) and decided to ask the Joint Meeting about the appropriate course of action to harmonise the provisions.

**Item 2: Document ECE/TRANS/WP.15/AC.1/2011/3 (ECFD) and informal document INF.34 (Austria) – Additive devices on tanks**

9. The Working Group discussed at length the proposal in document ECE/TRANS/WP.15/AC.1/2011/3 submitted by ECFD after having received comments on the previously submitted documents ECE/TRANS/WP.15/AC.1/2010/14 and ECE/TRANS/WP.15/AC.1/2010/39, and at the same time took into account the comments submitted by Austria in informal document INF.34. Several conclusions could be drawn or confirmed, but a number of outstanding questions remained which needed clarification before proceeding further with the proposal.

10. The details of the conclusions are as follows:

- The provisions for additive devices should be included in a special provision XYZ in Chapter 3.3 and not in a special provision for items of equipment TE since this would lead to extra marking for all tanks and is not appropriate for additive devices consisting of a separate receptacle.
- Special provision XYZ should be added against UN Nos. 1202, 1203, 1223 and 1863.
- The additives allowed are UN Nos. 1202, 1993 and 3082.
- The definition could read:

"Additive device means a device for dispensing additives of UN Nos. 1202, 1993, 3082 or non dangerous goods into the discharge line of a tank during discharge."

- The sentence "The manufacturer shall technically ensure that there can be no back-flow ..." should be deleted in the proposed special provision XYZ.
- Storage receptacles permanently fixed on the outside of the tank should be made of metallic material and the proposed wall thicknesses seemed acceptable to the Working Group.
- A transitional provision stating that additive devices installed on tanks before 1 July 2013 may continue to be used until 30 June 2019, without a reference to existing national regulations is recommended.

11. The following questions require additional clarification or justification from ECFD:
- It was unclear during the discussion what configurations were envisaged for the additive devices and the tank (what is meant by integral part of, permanently fixed, separable or separate from the tank?). This was the main issue to be addressed.
  - There was discussion on the individual capacity and the number of receptacles that make up the additive device.
  - It was not clear what had to be done for tanks with an additive device transporting other substances than UN Nos. 1202, 1203, 1223 and 1863 in a separate compartment (e.g. UN 3475).
  - The marking requirements and information in the transport document have to be described depending on the nature of the additive device (separate, part of tank, ...).
  - If the additive device is permanently fixed to the tank, an inspection regime (e.g. test pressure) must be established.
  - Provisions concerning protection against overturning, filling, including the additive device in the tank type approval, ... remained an outstanding issue.
  - The issue was raised as to whether a different approach was needed to tackle the issue, starting from a more general framework and keeping in mind that certain amounts of fuels can be transported without any specific requirements under RID/ADR.
12. ECFD was invited to take the above-mentioned conclusions and questions into account and submit a new proposal for the next session of the Working Group.

**Item 3: Document ECE/TRANS/WP.15/AC.1/2011/17 and informal document INF.33 (Sweden) – Chapter 6.8: Categorization of austenitic-ferritic stainless steel grades**

13. The representative of Sweden presented his documents with the objective of expanding the number of steel groups to include austenitic-ferritic stainless steels and having the same wall thickness as austenitic stainless steel. A presentation was made to illustrate the mechanical properties and behaviour of these steel grades and several values set out in the proposal were corrected. During the discussion, views were exchanged about the impact strength at low temperatures, the energy absorption and the elongation at fracture of these steel grades in comparison to standard austenitic steels. In particular, questions remained with regard to the behaviour of the welds.

14. Ultimately the Working Group came to the consensus of accepting a 3 mm wall thickness for shell diameters below or equal to 1.8 meters and 3.5 mm for tanks with a bigger shell diameter for these kinds of steel in 6.8.2.1.19.

15. Sweden was invited to submit a new document at the next session if further development of the requirements concerning austenitic-ferritic steels is desired.

**Item 4: Document ECE/TRANS/WP.15/AC.1/2011/9 (Sweden) - Proposal to add a footnote in 6.8.2.1.20 in ADR**

16. After the presentation of the document by the representative of Sweden, the question raised in plenary about lateral protection provided by the vehicle itself was answered by the Working Group by confirming that this was included in standard EN 13094 referenced in 6.8.2.6.

17. After a short discussion, the last sentence as set out in the original proposal was considered to be superfluous and the final text agreed upon by the Working Group to be added in the footnote of 6.8.2.1.20 reads:

"\* Equivalent measures means measures given in standards referenced in 6.8.2.6."

**Item 5: Document ECE/TRANS/WP.15/AC.1/2011/18 (Germany/UIP) and informal document INF.23 (UIP) – Determination of a tank code for the carriage of UN No. 1402 Calcium carbide**

18. Calcium carbide fulfils the criteria of 2.2.43.1.8 (a) of RID/ADR for assignment to packing group I. This means that carriage in existing tanks and in bulk, and hence supplying the steel industry with calcium carbide, is no longer possible. Additionally, for UN No. 1402 packing group I in column (12) of Table A of Chapter 3.2, no tank code is given and tank instruction T9 given for portable tanks is not suitable because of the requirement for top discharge. In addition, no tank code is available in the rationalised approach in 4.3.4.1.2 for solids of Class 4.3 and of classification code W2.

19. For this reason multilateral agreements RID 4/2010 and M226 had been initiated by Germany since the last session of the Working Group in September 2010.

20. During the September 2010 session, some members of the Working Group pointed out that there were substances of Class 4.3 and of classification code W2 which were assigned tank code S10AN with special provisions TU4, TU14, TU22, TU38 (tank-wagons only), TE21, TE22 (tank-wagons only), and TM2 (e.g. UN No. 2813 and UN No. 3395).

21. However, in the presentation of the documents, the representative of UIP highlighted the substance-specific danger of UN No. 1402 calcium carbide, i.e. the development of large quantities of the flammable gas acetylene in contact with water. This could lead to detonation at high pressures after deflagration of the substance. The assignment of an S10AN tank code would in that case lead to dramatic consequences. It would also prohibit the existing aluminium silo-wagons from being used in the future.

This led to the consensus in the Working Group that a tank code with a lower test pressure is recommended. A test pressure of 2.65 bar was agreed upon since it leads to the same minimum wall thickness as a tank with a test pressure of 4 bar and the current multilateral agreements, as well as current practice, only require 2 bar.

22. After a discussion and evaluation of the risks, the Working Group came to the following conclusions:

- UN No. 1402, packing group I should receive in column (12) of Table A of Chapter 3.2 a tank code "S2.65AN(+)".

- UN No. 1402, packing group I should receive in column (13) of Table A of Chapter 3.2 provisions TU4, TU22, TM2 and a new TA5.

- Revise TU22 in section 4.3.5 as follows:

"TU22. Tanks shall be filled to not more than 90% of their capacity; for liquids, a space of 5% shall remain empty when the liquid is at an average temperature of 50 °C."

- Add a new TA5 in section 6.8.4 (c) as follows:

"TA 5. This substance may be carried only in tanks with the tank code S2.65AN(+); the hierarchy in 4.3.4.1.2 is not applicable."

- A transitional period until 1 July 2015 for existing tanks is recommended.

23. The Joint Meeting was invited to consider the above-mentioned conclusions. The secretariat was invited to propose the proper transitional measure, taking into account the above-mentioned transitional period.

**Item 6: Document ECE/TRANS/WP.15/AC.1/2011/20 (Germany) – Terminology in 6.8.2.5.2 (all classes) and 6.8.3.5.6 (Class 2) concerning marking and informal document INF.13 (Netherlands) – Marking of demountable tanks**

24. After the presentation of document ECE/TRANS/WP.15/AC.1/2011/20 by the representative of Germany, the Working Group discussed the correct wording to be used in amending 6.8.2.5.2.

25. The final amended text for RID/ADR 6.8.2.5.2 agreed by the Working Group reads:

(ADR:)

6.8.2.5.2	The following particulars shall be inscribed on the tank-vehicle (on the tank itself or on plates) <sup>12</sup>	The following particulars shall be inscribed on the tank-container (on the tank itself or on plates) <sup>12</sup> :
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(RID:)

6.8.2.5.2	The following particulars shall be inscribed on both sides of the tank-wagon (on the tank itself or on plates) <sup>12</sup> :	The following particulars shall be inscribed on the tank-container (on the tank itself or on plates) <sup>12</sup> :
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Consequently, the same wording should be introduced into RID/ADR 6.8.3.5.6.

26. The following transitional measure was proposed:

"1.6.3/4.xx Tanks constructed before 1 January 2013 in accordance with the requirements in force up to 31 December 2012 but which do not, however, meet marking provisions in accordance with 6.8.2.5.2 and 6.8.2.5.3 applicable as from 1 January 2013 may continue to be marked in accordance with the requirements in force up to 31 December 2012 until the next periodic inspection after 1 January 2013."

27. The representative of the Netherlands presented informal document INF.13 regarding the differences in requirements for the markings between demountable tanks and other tanks. The Working Group supported the effort of bringing the marking requirements more into line with the requirements for the marking of tank-containers.

28. The Netherlands were invited to submit an official proposal for the next session of the Working Group; the members of the Working Group were invited to send their comments to the representative of the representative of the Netherlands in the meantime.

**Item 7: Document ECE/TRANS/WP.15/AC.1/2011/23 (UIP) – Regulations for alterations of tanks, whose type approval has either expired or been withdrawn**

29. In response to the proposal from UIP, the Working Group discussed at length the current provisions of 6.8.2.3.1 to 6.8.2.3.3 for alterations to existing tanks, both with valid and with expired or withdrawn type approvals. There was general support for the principle to add additional text to the regulations dealing with this specific issue. The Working Group decided that the best way forward was to include a new 6.8.2.3.3 for this purpose.

30. The current 6.8.2.3.3 becomes new 6.8.2.3.4.

Wording for new 6.8.2.3.3:

"6.8.2.3.3 In the case of an alteration to an existing tank, the inspection and the information on the certificate are limited to the altered part of the tank, including the equipment. This alteration shall be in conformity with the provisions of RID/ADR applicable at the time of the alteration. For tank and equipment parts that were not altered, the documentation of the initial type approval remains applicable.

In the case of an expired or withdrawn type approval, alterations to existing tanks may be made, provided that [the] a competent authority or [the] a body designated by this authority [and which has issued the type approval] has given its authorisation."

Similar text is required for 1.8.7.

31. The decision as to whether the competent authority should be the authority which has issued the type approval or any competent authority was left to the discretion of the Joint Meeting. UIP will submit an official document with the finalised text for the next session, taking into account possible comments from the Joint Meeting.

**Item 8: Document ECE/TRANS/WP.15/AC.1/2011/24 (UIP) and informal document INF.17 (Germany) – Further use of fittings; use of tank equipment according to standards and application of standards EN 14432 and EN 14433 listed in sub-section 6.8.2.6**

32. A lengthy discussion on document ECE/TRANS/WP.15/AC.1/2011/24 and informal document INF.17 showed that in spite of the two year period given to industry to develop valves according to standards EN 14432 and EN 14433, there were few new valves available on the market. Additionally, for tanks built after 1 January 2011 in accordance with old type approvals or tanks built according to new type approvals, only these standardised valves may be fitted.

33. The Working Group ultimately reached the following conclusions:

- 1.6.3.38 allows valves which are not in accordance with EN 14432 or EN 14433 to be used to replace the same type of valve on existing tanks built before 1 January 2011, since the original valve type is part of the tank type approval.
- There was no consensus on the time frame for the proposed transitional measure in document ECE/TRANS/WP.15/AC.1/2011/24.
- A possible solution for the shortage of valves on the market in accordance with EN 14432 or EN 14433 could be to re-evaluate the existing valves, which are identical from a technical perspective, with respect to the design type test in accordance with the above-mentioned standards.

34. The Working Group unanimously supported the German request to task CEN with the revision of standards EN 14432 and EN 14433, given the technical problems regarding the valve testing and the lack of certain provisions (e.g. with regard to vacuum-operated waste tanks). The lack of participation in the technical committee concerned was identified as an issue in this effort.

35. Since the two referenced standards are not applicable or appropriate for vacuum-operated waste tanks of chapter 6.10 in terms of their scope, Germany's interpretation set out in informal document INF.17 was supported by the majority of the Working Group.

36. RID/ADR 2009 clearly indicated 1 January 2011 as the date of application of both standards, which does not allow for the usual transitional period of 6 months until 1 July 2011. The Joint Meeting was invited to decide on the need for an interim Multilateral Agreement.

37. The Working Group decided that the referenced standards were not mature enough to allow for a separate type approval for tank components.

**Item 9: Informal document INF.7 (UIC) – 5.4.1.2.2 (d): holding time**

38. Informal document INF.7 reiterated questions raised at the forty-ninth session of the RID Committee of Experts (reference document OTIF/RID/CE/2010/49) for the

Working Group. After discussion, the Working Group decided that the provisions regarding the holding time in RID 5.4.1.2.2 (d) were needed. The Working Group realised the difficulties in estimating or calculating accurately the guaranteed time before opening of the relief valves and did not reach a conclusion on the question of whether a calculation in accordance with 4.2.3.7 and 6.7.4.2.8, as currently required for portable tanks, should also be required for tanks/tank-wagons.

39. The Working Group noted that the opening of the relief valves at the tank working pressure gives the public the impression of a malfunction, whereas in fact there is no danger from a pressure safety point of view and the vented gas can only constitute a possible hazard in confined spaces (e.g. tunnels).

40. The Working Group decided to postpone further evaluation of the issue until national experts have been consulted for more information and invited UIC and other concerned parties to submit an official proposal for the next session.

**Item 10: Informal document INF.21 (OTIF Secretariat) – Section 1.6.3: review of transitional measures**

41. The Working Group had started the review of transitional measures for tanks during its September 2010 session. In so doing, for some of the transitional measures there were no new texts or only provisional texts. For this work, the Working Group on Tanks needed the notification texts of earlier RID and ADR tank provisions, i.e. the amendments that were adopted and the updated references for the paragraphs concerned. The secretariats were asked to support the Working Group in this respect and the Working Group welcomed informal document INF.21 from the OTIF secretariat in that regard.

42. The Working Group identified that the work on this issue would have to be continued and decided to address it at its next session and in the meanwhile to ask for feedback from the Working Group participants.

**Item 11: Informal document INF.31 (France) – Accident reporting concerning a collapsed tank-wagon due to depressurization**

43. France presented the preliminary accident report of a collapsed tank containing residues of butadiene due to cold temperatures (-18°C). The Working Group identified that at the date of construction of the tank (1968), no requirements were yet in place for tanks to withstand vacuum pressure of minimum 0.4 bar, as currently stipulated in 6.7.3.2.8. Using a software available in the meeting room, it was calculated that the tank, not being equipped with stiffening rings, was never able to withstand vacuum pressures of more than 0.2 bar.

44. The Working Group proposed adding additional measures in line with the provisions of 6.7.3.2.8 for tanks according to Chapter 6.8 and including provisions in Chapter 4.3 for existing tanks to be filled with nitrogen after unloading to protect the tank against vacuum pressure.

45. The representative of France agreed to submit a proposal for the next session of the Working Group, taking into account the feedback received from the Working Group.