

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

21 September 2017

Report of the Working Group on Tanks

1. The Working Group on Tanks met from 19 to 21 September 2017 in Geneva on the basis of the mandate from the RID/ADR/ADN Joint Meeting, under the chairmanship of Mr. Arne Bale (United Kingdom) Mr. Kees de Putter (Netherlands) as secretary. The relevant documents were submitted to the plenary session and transferred to the Working Group for consideration.

2. The Working Group on Tanks, consisting of 25 experts from 11 countries, the European Union (European Commission and European Union Agency for Railways) and 3 non-governmental organizations, dealt with the following official and informal documents:

Documents:

- ECE/TRANS/WP.15/AC.1/2017/26 and Add1 (Secretariat)
- ECE/TRANS/WP.15/AC.1/2017/31 (Russian Federation)
- ECE/TRANS/WP.15/AC.1/2017/36 (Belgium)
- ECE/TRANS/WP.15/AC.1/2017/38 (United Kingdom)
- ECE/TRANS/WP.15/AC.1/2017/40 (Netherlands)
- ECE/TRANS/WP.15/AC.1/2017/43 (Russian Federation)

ECE/TRANS/WP.15/AC.1/146, Annex II

Informal documents:

INF 10. (United Kingdom)	INF. 28 (Belgium)
INF. 11 (United Kingdom)	INF. 29 (Belgium)
INF. 13 (Germany)	INF. 30 (Secretariat)
INF. 17 (Netherlands)	INF. 32 (France)
INF. 18 (Netherlands)	INF. 35 (United Kingdom)
INF. 23 (Austria)	INF. 36 (UIP)
INF. 24 (France)	INF. 38 (EC)
INF. 25 (France)	INF. 42 (France)
INF. 26 (ERA)	

Item 1: ECE/TRANS/WP.15/AC.1/2017/26 (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 and ECE/TRANS/WP.15/AC.1/2017/26 Add1 (Secretariat).

3. In paragraph 32 of the report it is suggested to include a corresponding provision to the amended Portable tank special provision TP 10 in Chapter 4.3. It was found that the wording as presented for the new sentence to TP 10 could be improved.

Proposal 1: Introduce a new special provision TU xy to 4.3.5 to read:

“TU xy An empty uncleaned tank may be offered for carriage after the date of expiry of the last inspection of the lining for a period not to exceed three months beyond this date for the purposes of performing the next inspection of the lining prior to refilling (see 6.8.4 (d) TT2)”.

Proposal 2: For UN 1744 BROMINE:

Introduce special provision TU xy in column (13) of the table A of Chapter 3.2

Proposal 3: Amend special provision TT2 to read (new wording in italic)

TT2 The condition of the lining of shells shall be inspected every year by an expert approved by the competent authority, who shall inspect the inside of the shell (*see 4.3.5 TU xy*).

Item 2: ECE/TRANS/WP.15/AC.1/2017/31 (Russian Federation) – Proposal to add to the list of goods carried in tanks with a protective lining or protective coating and INF.28 (Belgium).

4. To prevent carriage of corrosive substances that react violently with aluminium alloy in tanks with a protective lining and a shell of aluminium alloy a special provision TU 42 was introduced to a selection of UN numbers that would normally be carried in tanks with a protective lining. It was recognized that pH value is not always an indicator of corrosivity and that the list of UN numbers to which the special provision was given was not exhaustive.

5. The Russian Federation proposed in its document to allocate TU 42 to an additional UN number. Belgium in INF 28 states that they would prefer an alternative approach of developing classification criteria for corrosivity, preventing the use of these tanks based on this argument.

6. It was said that a special working group would be needed to deal with developing corrosivity criteria and checking substances according to these criteria. It was proposed that Belgium with other interested parties could investigate the feasibility for such a working group. It was confirmed that the substances as mentioned in the document of the Russian Federation would react violently with aluminium alloy and that allocating TU 42 to UN 3266 would be appropriate. This was accepted as the development of corrosivity criteria and checking the substances would require a considerable time.

Proposal 4: Allocate Special provision TU 42 in column (13) of the table A of Chapter 3.2 to:

UN 3266 CORROSIVE LIQUID, BASIC, INORGANIC, NOS - PG II and

UN 3266 CORROSIVE LIQUID, BASIC, INORGANIC, NOS - PG III.

Item 3: ECE/TRANS/WP.15/AC.1/2017/36 (Belgium) – Holding time – Information in the transport document.

7. The proposal was to extend the requirement for entering the actual holding time in the transport document to portable tanks as it is already applicable for tank containers and tank wagons carrying refrigerated liquefied gases. The actual holding time is already marked on the portable tank itself. Arguments for this are that dispatch personnel do not always have access to the marking on the portable tanks and that in cases of portable tanks also approved as tank containers there can be confusion if this has to be marked in the document or not.

8. Several delegations were of the opinion that this should be discussed by the UN TDG. It was foreseen that there could be confusion if the proposal would be adopted, because 4.2.3.7.2 states that the actual holding time should be marked on the portable tanks, and 5.4.1.2.2 (d) on the other hand would require entering the holding time in the transport document. The expert of Belgium was invited to bring this topic for discussion to the UN TDG.

Item 4: ECE/TRANS/WP.15/AC.1/2017/38 (United Kingdom) Report of the informal working group on the inspection and certification of tanks and INF 10 (United Kingdom), INF 23 (Austria), INF 26 (ERA), INF 36 (UIP) and INF 38 (European Union).

9. After an introduction of document 2017/38 by the chair of the informal working group on inspection and certification of tanks it was decided to deal first with the informal documents to have an overview of the remarks made before going into Annex 1 and INF 10. It was noted that the text developed to date focusses primarily on ADR recognizing that subsequently differences for RID would need to be taken into account.

10. In INF 23 Austria expressed concerns that only inspection bodies that are accredited to ISO 17020 are allowed to perform inspections according to the draft wording for 6.8.1.5. It was explained that it was the intention of the informal working group to allow an alternative to accreditation on an equal level approved by the competent authority of the contracting party. This would be detailed in 1.8.6 that is yet to be amended.

11. ERA in INF 26 explained that in the EU acceptance of a rail vehicle is done by ERA when a rail vehicle is used internationally. The approval of the tank is a subsystem that requires approval before a rail vehicle authorisation can be given. In INF 26 several situations are explained and suggestions made to clarify the wording of 2017/38. As the wording is not finalized, ERA was invited to participate in the Informal working group.

12. The working group took note of the concerns expressed in INF 36 by UIP. This concerned in particular the (periodic) inspection in the country of use at the time a test would be due, the introduction of an “ entry into service” check and that the owner of the type approval could also be the owner of the tank wagon as well as the manufacturer. As the system works well at present in RID this should not be changed. UIP was content to see that welding provisions for maintenance or repair shops are addressed in the amendments to 6.8.2.1.23. As this is an important improvement this should be adopted for RID/ADR 2019 even if the whole package of amendments will not be ready for adoption in RID/ADR 2019. The working group agreed on this and proposes the following amendment.

Proposal 5: Amend the first two sentences of the first paragraph of 6.8.2.1.23 to read (new words in italics, deleted wording stricken through):

“The ability of the manufacturer, *or the maintenance or repair shop*, to perform welding operations shall be verified and confirmed by either the competent authority or by the body designated by this authority, ~~which issues the type approval~~. A weld quality assurance system shall be operated by the manufacturer *or the maintenance or repair shop*.“

13. The European Commission in INF 38 expressed concerns over a potential conflict between RID/ADR in directive 2008/68/EC and the directive 2010/35/EU. In particular modification of 1.8.7 should not restrict or impede the free movement on the market and the use of pressure equipment. Also the role of Notified Bodies and responsibilities of the manufacturers were mentioned as areas of concern.

14. Due to time constraints it was not possible to discuss fully the drafts in Annex 1 to 2017/38 and INF 10 in detail. The tanks working group supported continuation of this work and all interested parties are invited to submit comments and to participate in the informal working group that is planned to reconvene from 12 to 14 December 2017 in London.

Item 5: ECE/TRANS/WP.15/AC.1/2017/40 (the Netherlands) Cross sectional shapes of shells and INF 42 (France).

15. In the March 2017 session, tanks with a cross sectional shape with a concave section were discussed. It was concluded that the regulations left room for interpretation and that there should be no barriers to alternative designs if at least the same level of safety could be provided. It was agreed that the regulations needed modification to prevent different interpretations and to allow other designs. The UK offered to develop a proposal for a preliminary exchange of views. This took place at the informal working group on inspection and certification of tanks that met in June in London. The proposal sought to establish a basic principle in 6.8.2.1 to allow the design and construction of shells to deviate from referenced standards because of scientific and technical progress, or where specific aspects are not addressed in standards, with the agreement of the competent authority. However the views expressed did not support the proposal as this was, for the most part, provided for by 6.8.2.7. After the meeting an alternative proposal was prepared by the Netherlands for consideration at the September 2017 session.

16. It was expressed that 6.8.2.1.18 and its foot note 2 contained the basic requirements concerning maximum convex curvature of the shell on which the minimum wall thicknesses were based. It was considered by the Netherlands that this should not be modified. It was therefore chosen to introduce a new paragraph in 6.8.2.1 to allow for localized deviations from convex curvature in general. As the proposal contained only basic requirements to be further detailed in the standard EN 13094, France in INF 42 required more assurance for safe construction as this is not yet provided for in EN 13094. Therefore, it was decided to add the wording of the proposal to the existing foot note 2 to 6.8.2.1.18 and for the time being place this in square brackets to allow EN 13094 to be amended in this respect. The brackets can be removed once EN 13094 contains sufficient details to provide for a safe construction.

Proposal 6: Add the following sentence at the end of foot note 2 to 6.8.2.1.18 to read:

[However the cross section of shells according to 6.8.2.1.14 a) may contain recesses or protrusions such as sumps, cut-outs or recessed manhole constructions. They may be constructed of flat or shaped (concave or convex) sheet metal. Dents and other unintended deformations shall not be regarded as recesses or protrusions.”]

Item 6: ECE/TRANS/WP.15/AC.1/2017/43 (Russian Federation)

17. The proposal for amendment to 6.9.3.1 and 6.8.3.2.21 were accepted as was 6.10.1.2.1 with withdrawal of the first proposal and modification of the second proposal.

Proposal 7 : Amend the third paragraph of 6.10.1.2.1 to read (new wording in italics and deleted wording stricken through):

“Vacuum-operated waste tanks shall comply with all the requirements of Chapter 6.8, *except where* ~~with exception of requirements~~ overtaken by *special* requirements ~~a special provision~~ in this chapter. However the requirements of 6.8.2.1.19, 6.8.2.1.20 and 6.8.2.1.21 shall not apply.”

Item 7: ECE/TRANS/WP.15/AC.1/146 - Report of the Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods on its spring 2017 session.

18. The report of the Joint Meeting in its spring 2017 session contained in Annex II a number of amendments in square brackets. The provisions were revisited and the square brackets or text could be removed from the following amendments:

Proposal 8: Delete square brackets from the following amendments

1.6.3.53 (twice) and 6.8.2.31.

Proposal 9: Delete the text in square brackets from:

1.6.3.49 and 1.6.4.51

Proposal 10: Amend 6.8.2.2.3 as follows and delete the square brackets:

Part 1: Amend the reference to the standard in the first paragraph to read (new wording in italics and deleted wording stricken through):

EN ISO 16852:~~2010~~ 2016 (*Flame arresters - Performance requirements, test methods and limits for use.*)

Part 2: In the table remove the square brackets and replace “2010” by “2016” in the reference to EN ISO 16852 (3 times).

19. As more checks need to be made it is noted that for 6.8.2.2.10, concerning the burst pressure of rupture discs, the brackets could not yet be removed.

Item 8: INF 11 (United Kingdom) – Template of a tank plate for RID/ADR tanks for the transport of dangerous goods.

20. The majority of experts were in favour of having a model tank plate in 6.8.2.5.1 rather than in a standard. Several remarks were made on the contents of the example of a tank plate given in the Annex to INF 11.

21. The following was agreed upon;

- the format would be mandatory for new tanks only,
- the information required in 6.8.2.5.2 should not be included,
- the lines should be numbered and only lines applicable for a type of tank may be used,
- a table should be included to set out the meaning of the numbered line,
- a list of applicable line numbers per tank type should be included,
- the inspection shall be stamped on the plate in the sequence of stamp of the expert, mmy followed by the letter “L” or “P” as applicable,

- the tank plate may consist of two separate parts; one for tank information and one for marking the inspections,
- the tank serial number and initial hydraulic test date shall be marked behind the plate for reference in case the plate is lost.

22. The United Kingdom was invited to present the amended proposal for a future session.

Item 9: INF 13 (Germany) – Use of austenitic-ferritic stainless steels (DUPLEX steels) in accordance with EN 10028-7:2008-02 for the construction of tanks in accordance with 6.8.5 of RID/ADR

23. The working group recognized the missing reference to austenitic-ferritic stainless steels in 6.8.5.1.2 (a) and agreed with the proposed wording for 6.8.5.1.2 (a) with an editorial amendment, and the consequential amendment to 6.8.5.2.1.

24. It was however remarked that in case of tanks for refrigerated carbon dioxide the working temperature could be below $-40\text{ }^{\circ}\text{C}$. As the correct temperature needs to be checked the temperature is kept between square brackets to be decided in a future session.

Proposal 11: Add the following indent to 6.8.5.1.2 (a) to read:

"– Austenitic-ferritic stainless steels, down to a temperature of [$-40\text{ }^{\circ}\text{C}$]."

Proposal 12: Amend the end of the second indent to 6.8.5.2.1 to read (new wording in Italics, deleted wording stricken through):

" ferritic alloy steel $5\% \leq \text{Ni} \leq 9\%$; ~~or~~ austenitic Cr - Ni steel; *or austenitic-ferritic stainless steel.*"

Item 10: INF 17 (Netherlands) EN 14596 Emergency Pressure Relief Valve (EPRV)

25. After discussions in 2004/2005 it was decided not to reference EN 14596 in ADR. The reason was a safety issue that due to the low opening pressure and large surface area, significant leakages could occur when a tank vehicle overturns. After a periodic review and up-date of EN 14596 the standard is being considered by the standards working group and the CEN consultant has given a positive assessment.

26. The Netherlands is of the opinion that the standard should not be referenced because the opening pressure is unchanged and still presents a safety issue. It was explained that if the opening pressure would be higher, such as at the test pressure, it might be acceptable.

27. Other experts were also of the opinion that the opening pressure is too low and have negative experiences, whilst others had positive experiences and wished to see their use continue. If we make a reference in ADR to EN 14596 it would be mandatory. If we do not reference the standard the EPRV can optionally still be used even if there is limited release of contents based on 6.8.2.2.1 fourth paragraph. Therefore it was decided it would not be appropriate to reference the standard at present.

Item 11: INF 18 (Netherlands) – Fiber Reinforced Plastic (FRP) tanks - tank coding

28. It was explained that marking the tank code was mandatory for FRP tanks. The calculation pressure in the tank code based on 6.8.2.14 (a) or (b) would in some cases be

lower than that for the substances allowed for carriage in 4.4.1. A tank code marked on the tank, lower in the hierarchy than that for the substance, may lead to confusion in use.

29. A majority of experts were in favour of an “equivalent” tank code that would be based on the substances allowed for carriage rather than having no tank code. It was recognized that the regulation needed modification to express this marking. The Netherlands was invited to develop a proposal in favour of an “equivalent” tank code.

Item 12: INF 24 (France) – Definition of capacity of shell or shell compartment for tanks.

30. France asked for clarification on which capacity was intended by the reduced capacity in the definition of “Capacity of shell or shell compartment” for tanks that cannot be completely filled due to the construction (i.e. recessed manhole constructions). It was confirmed that reduced capacity meant the actual capacity that could be filled in the tank without pressure. The purpose of reducing the capacity for the marking is to prevent overflow during filling by using the unreduced capacity.

Item 13: INF 25 (France) – Application of 4.3.2.3.4.

31. In 4.3.2.3.4 it is described that the closure nearest to the substances being carried should be closed first. In particular tanks used for the carriage of fuel, loaded from the bottom of the tank, the second closure is closed first and in these cases emptying the piping system was not possible.

32. France was invited to come back on this topic in the future to clarify the situation for such cases.

Item 14: INF 29 (Belgium) – Transitional measures for the use of tanks with a shell constructed of aluminium with a protective lining for substances with a pH value less than 5.0 and more than 8.0.

33. With the introduction of special provision TU 42 transitional measures were included for the carriage of substances for which TU 42 was introduced with a protective lining and a shell of aluminium alloy. The end date of the transitional measures were based on the date the last tanks were assumed to be constructed and the normal service life for the lining.

34. A new date of 31 December 2033 was proposed however some delegations were reluctant to prolong the carriage of the substances in these tanks. After discussion a new date of 31 December 2026 was agreed.

Proposal 13: Amend the year at the end of 1.6.3.48 and 1.6.4.50, from “2022” to “2026”

Item 15: INF 30 (Secretariat) – Amendments to transitional measures.

35. The deletion of the transitional measures 1.6.3.17 (ADR only), 1.6.3.42, 1.6.4.15, 1.6.4.38, 1.6.4.44, 1.6.4.45 and the amendment of 1.6.3.44, proposed by the secretariat was confirmed. It was also suggested by the working group to delete 1.6.3.15 (RID only) which had already been deleted from ADR.

36. It was proposed not to delete transitional measures 1.6.3.16 and 1.6.4.18 to provide clarity on why the tank record of tanks constructed before 1 January 2007 may not be complete.

Item 16: INF 32 (France) – Marking of the date of the most recent test according to 6.8.2.5.1.

37. The experience with marking the date of the initial inspection was required from the experts of the working group. There was consensus that the date of the hydraulic pressure test would be the start of the life of a tank that was used to determine which version of the regulations applied. However the date of the initial leakproofness test, which could be some time later, would be preferred to be used to determine the date of the periodic and intermediate inspections.

38. This should be considered in the future and in conjunction with the work on the tank plate.

Item 17: INF 35 (United Kingdom) – Tanks: Testing pressure relief valves on LPG road tankers at intermediate inspections.

39. The intermediate tank inspection requires a check of the satisfactory operation of all equipment in 6.8.2.4.3. Safety valves therefore need to be checked for the correct opening pressure. However EN 14334 (LPG equipment and accessories –inspection and testing of LPG road tankers) permits, as an alternative, checking the safety valves by inspecting the opening pressure marked on the valve. In order to ensure safety the UK has asked inspection bodies and the industry to undertake a test programme to build up sufficient evidence by collecting data from tests of safety valves of LPG tanks. The UK intends to share the results of the test programme when they become available. In the meantime this issue should be brought to the attention of the standards working group.

Item 18: Any Other Business.

40. France asked the group if there are any problems experienced with accepting electronic documents and signatures in relation to inspections. The Tanks working group sees no objection for reports of tanks to be electronically signed and transmitted and suggests that this subject should be raised at the level of the plenary as it applies to all kinds of documents.
