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Working Party on the Transport of Dangerous Goods

Joint Meeting of the RID Safety Committee and the
Working Party on the Transport of Dangerous Goods
(Bern, 28 May – 1 June 2001)

REPORT OF THE MEETING OF THE INFORMAL RID/ADR WORKING GROUP */

The informal Tanks Working Group on tanks met from 24-26 January in Berlin. Mr. H. Rein (Germany) welcomed the participants and gave the chair to Mr. Ludwig (Germany). The agenda (BAM letter of 1.12.2000) was adopted. The accompanying documents are shown in the list of papers. Documents unknown to the Joint Meeting are contained in Annex 2 */.

1. Hydraulic pressure test for compartmented tanks

Document: OCTI/RID/GT-III/2000/CH

1.2.1 1st Proposal – test pressure and calculation pressure

2nd Proposal – leakproofness test

3rd Proposal – test pressure, RID

5th Proposal – hydraulic pressure test for compartmented tanks

The Group adopted the proposals with minor amendments. A new proposal was drafted as a consequence and is attached at **Annex 1**.

*/ Circulated by the Central Office for International Carriage by Rail (OCTI) under the symbol OCTI/RID/GT/III/2001/14.

1.3 4th Proposal – hydraulic pressure test, ADR

The proposal (the test pressure for the entire tank should also be used for the individual compartments in compartmented tanks – tank vehicles only) was discussed at length, but there was no consensus. However, it was established that as regards the contents, nothing had changed from the “old” ADR as a result of the restructuring. As a result, Switzerland was asked to submit a proposal to WP.15.

2. Construction – Calculation pressure 1.5 bar in the tank code

Document: Working group “Tank questions” Berlin, 2001, January 24 to 26, INF 1 (Germany)

Following lengthy discussion, it was established that the term “design – 1.5 bar calculation pressure” in the restructured RID/ADR Chapter 6.8 needed to be clarified. But this is an old problem and has not come up just as a result of restructuring. In parallel with the development in the RID Committee of Experts concerning the introduction of a minimum calculation pressure of 4 bar for tank wagons, Germany again submitted an amended INF 1. The Group agreed unanimously that any amendments arising from this should only apply to newly constructed tanks.

3. Testing of weld seams

Document: Tank inspections INF 2 (Spain)

The Group recognised the fact that problems with the weld seams that can arise whilst the tank is in operation are not considered sufficiently in the course of the periodic inspections. Any inspection should be restricted to safety relevant areas of damage in the weld seams.

The possibility was discussed of applying the contents of sections 6.7.2.19.7 – 6.7.2.19.11 (periodic tests; UN tanks) to RID/ADR tanks as well.

Owing to the lack of further information about the scope of periodic tests in the new tank standards, Spain was asked to draft a new proposal for the next Joint Meeting.

4. Hermetically closed tanks

Documents: TRANS/WP.15/AC.1/1998/23
TRANS/WP.15/AC.1/1998/23/Add.1
INF. 19 (Germany)
INF. 3 (UK)
INF. 4 (UK)
INF. 5 (Germany)

The problem of hermetically closed tanks was discussed at length. There was no consensus on the question of whether a tank with a vacuum valve not preceded by a bursting disc met the definition of “hermetically closed tank”. In this respect, the discussion reflected the variation between RID and ADR with regard to the definition of hermetically closed tank. A partial solution adopted for tank wagons in the form of TE15 cannot automatically be applied to tank vehicles because in most cases the wall thicknesses are too small. Also this does not deal with the problem of safety valves nor combined safety and vacuum relief valves.

The Group discussed two possible solutions:

- drafting a proposal based on documents INF. 3 and 19 (old version) and INF. 4 and 5 (new version) to retain the restrictions only on certain substances with a corrosivity or toxicity-

hazard (mainly at packing group I level) in accordance with the UN portable tank provisions (action UK), or

- drafting a special provision similar to TE15 (RID) for tank vehicles with a reduced start-to-discharge pressure (action NL).

The majority of delegates supported the former solution.

5. Alternative Formula

Document: TRANS/WP.15/2000/10

The Working Group confirmed that the new equivalence formula (applicable to tank vehicles) could also be used for tank-containers and tank wagons. The new minimum wall thicknesses for higher grade steels in comparison with reference steel should not fall below the current minimum wall thicknesses for higher grade steels because of the higher static and dynamic stresses on tank wagons in rail transport. For this, appropriate minimum wall thicknesses (limit values) could be introduced in the same way as for tank vehicles.

Note: Because the tensile strength of the reference steel has been increased (numerical value 456 was replaced with 464 in 6.8.2.1.18), the equivalence formula in document TRANS/WP.15/2000/10 is not identical to the formula in ADR 6.8.2.1.18; this must be taken into account.

6. Alternative Measures

Document: TRANS/WP.15/2000/9

In principle, the Working Group supported introducing “alternative measures” into RID/ADR Chapter 6.8. These could be based on the text of section 6.7.1.1 (portable tanks) which has already been adopted. Germany will submit a new document on this to the Joint Meeting. In addition, an official working group should be proposed at the Joint Meeting:

- to set out the level of safety to be achieved and
- to determine methods for how the level of safety can be set.

7. Standardization in ADR/RID

There was a lengthy discussion on the problems there had been to date on including standards in RID/ADR and in further developing the regulations later on. In order to reach a decision as to whether a standard should be taken into account in ADR/RID, the Working Group was of the opinion that the final standard should be available to the relevant meetings in the official languages. The Joint Meeting secretariats should therefore be asked to make the final standards available to all participants in good time, as has previously been the case. Switzerland’s suggestion that a working group be set up to carry out safety-technical examination of standards as an aid to decision making (inclusion in ADR/RID) for the Joint Meeting was received positively by a number of delegates. Switzerland would submit a proposal to the Joint Meeting for a standing working group to deal with this issue.

8. Tank code on tank vehicles

Displaying tank codes on tank vehicles as well was discussed under this item, but no solution was agreed. Some delegates thought the tank code should also appear on tank vehicles because of harmonization. Others thought that since this information was contained in the tank vehicle approval certificate (which has to be carried during the journey), this was sufficient.

9. Other issues

- Wall thickness reduction caused by corrosion;
- Recognition of periodic tests.

Annex 1

Proposal for the RID/ADR Joint Meeting

Replace the existing text in Chapter 6.8 RID/ADR as follows:

Chapter 6.8: Hydraulic pressure test⁹ for compartmented tanks

6.8.2.4.1

.....

- a hydraulic pressure test 9/ at the test pressure indicated on the plate prescribed in 6.8.2.5.1; and
- a leakproofness test and a check of satisfactory operation of the equipment.

Except in the case of Class 2, the test pressure for the hydraulic pressure test depends on the calculation pressure and shall be at least equal to the pressure indicated below:

| Calculation pressure (bar) | Test pressure (bar) |
|----------------------------|---------------------|
| G^{18} | G^{18} |
| 1,5 | 1,5 |
| 2,65 | 2,65 |
| 4 | 4 |
| 10 | 4 |
| 15 | 4 |
| 21 | 10 (4^{19}) |

The minimum test pressures for Class 2 are given in the table of gases and gas mixtures in 4.3.3.2.5.

The hydraulic pressure test shall be carried out on the shell as a whole and separately on each compartment of compartmented shells.

[ADR only]

The test shall be carried out on each compartment at a pressure at least equal to 1.3 times the maximum working pressure.

The hydraulic pressure test shall be carried out before the installation of such thermal equipment as may be necessary.

⁹ In special cases

¹⁸ G = minimum calculation pressure...

¹⁹ Minimum test pressure...

If the shells and their equipment are tested separately, they shall be jointly subjected to a leakproofness test after assembly in accordance with 6.8.2.4.3.

The leakproofness test shall be carried out separately on each compartment of compartmented shells.

6.8.2.4.2

Shells and their equipment shall undergo periodic inspections at fixed intervals. The periodic inspections shall include: an external and internal examination and, as a general rule, a hydraulic pressure test⁹ (for the test pressure for the shells and compartments if applicable, see 6.8.2.4.1).

Annex 1

Sheathing for thermal or other insulation shall be removed only to the extent required for reliable appraisal of the characteristics of the shell.

In the case of tanks intended for the carriage of powdery or granular substances, and with the agreement of the expert approved by the competent authority, the periodic hydraulic pressure test may be omitted and replaced by leakproofness tests in accordance with 6.8.2.4.3.

.....

6.8.2.5.1 [RID only] Delete the last indent starting with "test pressure...".
