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## 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

Bern, 17–21 March 2014

Item 2 of the provisional agenda

##### Tanks

### **Continued use of fixed tanks (tank-vehicles), demountable tanks and battery-vehicles in accordance with the transitional provisions of ADR 1.6.3.1, 1.6.3.2 and 1.6.3.3**

Transmitted by the Government of Germany<sup>1, 2</sup>

#### *Summary*

<b>Executive summary:</b>	For safety reasons, the continued use on the basis of open-ended transitional provisions of fixed tanks (tank-vehicles), demountable tanks and battery-vehicles for gases of Class 2 built before 1 October 1978 should be limited.
<b>Action to be taken:</b>	Delete/amend the transitional provisions in ADR 1.6.3.1, 1.6.3.2 and 1.6.3.3.
<b>Related documents:</b>	Document OTIF/RID/CE/GTP/2012-A, final report of the 1 <sup>st</sup> session of the RID Committee of Experts' standing working group (see paragraphs 16 to 20) and the associated informal document INF.10 (Germany).

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<sup>1</sup> In accordance with the programme of work of the Inland Transport Committee for 2012–2016 (ECE/TRANS/224, para. 94, ECE/TRANS/2012/12, programme activity 02.7 (A1c)).

<sup>2</sup> Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2014/1.

## Introduction

1. At the 1<sup>st</sup> session of the RID Committee of Experts' standing working group (Riga, 12 – 15 November 2012), Germany submitted a proposal in informal document INF.10 dealing with the possibilities for the continued use of gas tank-wagons in accordance with the transitional provisions of RID 1.6.3.1, 1.6.3.2 and 1.6.3.3.
2. The intention of the proposal submitted was to prohibit or time limit the continued use of gas tank-wagons built before 1 October 1978. The background to the proposal was the underlying safety concerns surrounding the open-ended use of these gas tank-wagons, as they were built before 1 October 1978 in accordance with national provisions and in Germany, for example, they do not and need not satisfy current safety levels in terms of the minimum wall thicknesses and the quality and workmanship of the materials used.
3. The RID Committee of Experts' standing working group accepted Germany's proposal in principle and put a time limit on the continued use of tank-wagons for pressurised gases built before 1 October 1978. It was agreed that for the time being, the texts should remain in square brackets so that the issue could perhaps be returned to at the next session. Germany also said it would submit a corresponding proposal for fixed tanks (tank-vehicles), demountable tanks and battery-vehicles to the Joint Meeting's working group on tanks (see document OTIF/RID/CE/GTP/2012-A).

## Current legal situation

4. According to ADR 1.6.3.1, fixed tanks (tank-vehicles), demountable tanks and battery-vehicles built before the entry into force of the requirements applicable as from 1 October 1978 may be kept in service under the following conditions:
  - The equipment of the shell must meet the requirements of Chapter 6.8.
  - The thickness of the shell wall, except in the case of shells intended for the carriage of refrigerated liquefied gases of Class 2, shall be appropriate to a calculation pressure of not less than 0.4 MPa (4 bar) (gauge pressure) in the case of mild steel or of not less than 200 kPa (2 bar) (gauge pressure) in the case of aluminium and aluminium alloys.
  - For other than circular cross-sections of tanks, the diameter to be used for the basis of calculation shall be that of a circle whose area is equal to that of the actual cross-section of the tank.
5. According to ADR 1.6.3.2, fixed tanks (tank-vehicles), demountable tanks and battery-vehicles may only be kept in service in accordance with the transitional provisions if the periodic tests are conducted in accordance with the requirements of ADR 6.8.2.4 and 6.8.3.4 and with the pertinent special requirements for the various classes.
6. In ADR 1.6.3.3, the continued use of fixed tanks (tank-vehicles), demountable tanks and battery-vehicles under the conditions of ADR 1.6.3.1 (see paragraph 4) is limited by the conditions of ADR 1.6.3.2 (paragraph 5) and up to 30 September 1993. However, fixed tanks (tank-vehicles), demountable tanks and battery-vehicles for substances of Class 2 may be kept in service under the same conditions beyond this date.
7. It follows from paragraphs 4 to 6 that fixed tanks (tank-vehicles), demountable tanks and battery-vehicles for gases of Class 2 may be kept in service without limit provided their equipment meets the requirements of Chapter 6.8. With regard to the wall thicknesses, ADR 1.6.3.1 only prescribes a requirement for shells for compressed, liquefied gases, which does not however correspond to the wall thickness requirements of Chapter 6.8. No requirements concerning the shell wall thicknesses are prescribed for refrigerated liquefied

gases. Overall then, the wall thickness of these shells of fixed tanks (tank-vehicles), demountable tanks and battery-vehicles need not meet the requirements of the current ADR.

8. Before 1 October 1978, fixed tanks (tank-vehicles), demountable tanks and battery-vehicles were built in accordance with different national regulations and therefore deviate more or less from the state of safety technology required in ADR.

9. This harmonised higher standard of safety is mainly the result of the ADR-wide introduction of a minimum wall thickness requirement, which applies to the entire shell, and to the permissible stresses in accordance with 6.8.2.1.10 and 6.8.2.1.16 of ADR (see also Germany's proposal OTIF/RID/CE/GT/2013/3 from the 13<sup>th</sup> session of the working group on tank and vehicle technology (Rome, 11 and 12 April 2012).

## Conclusion

10. Investigations in Germany on the safety level in the design/calculation of gas tank-wagons built before 1 October 1978 show that the tanks of these wagons deviate from the current state of safety technology and may at present continue to be used without time limit. This likewise concerns fixed tanks (tank-vehicles), demountable tanks and battery-vehicles built before 1 October 1978. For safety reasons, the continued use of these fixed tanks (tank-vehicles), demountable tanks and battery-vehicles for the carriage of gases of Class 2 should also be time limited.

## Proposal

11. In order to give economic operators sufficient time to replace fixed tanks (tank-vehicles), demountable tanks and battery-vehicles built before 1 October 1978, a transitional period up to 31 December 2021 is proposed:

### 1.6.3.1 –

**1.6.3.3 ADR** Amend to read as follows:

"**1.6.3.1** (deleted)

**1.6.3.2**(deleted)

**1.6.3.3**Fixed tanks (tank-vehicles), demountable tanks and battery-vehicles whose shells were built before the entry into force of the requirements applicable as from 1 October 1978 may still be used if their wall thickness and items of equipment meet the requirements of Chapter 6.8.

**1.6.3.3.1** Fixed tanks (tank-vehicles), demountable tanks and battery-vehicles which are intended for the carriage of gases of Class 2 and whose shells were built before the entry into force of the requirements applicable from 1 October 1978 may still be used until [31 December 2021] if their items of equipment but not their wall thickness meet the requirements of Chapter 6.8."