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Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods

Bern, 14 - 18 March 2016

Item 2 of the provisional agenda

Tanks

Proposal for amendment for MEGCs and tank containers in Chapter 6.8

Transmitted by the government of Norway^{1, 2}

Introduction

1. At the last RID/ADR/ADN Joint Meeting in September 2015 Norway posed some questions to the Tank Working Group related to MEGCs transported on vehicles equipped with hook arm lifts (ECE/TRANS/WP.15/AC.1/2015/39). The requirements for fastenings for the MEGCs (Chapter 6.8) and the requirements for fastenings on the vehicle (Section 9.7.3) were discussed. MEGCs did not seem to be covered adequately neither in ADR/RID Chapter 6.8 nor in ADR Chapter 9.7. Norway volunteered with assistance from EIGA to come back with a proposal to address these issues (see paragraph 18-24 of ECE/TRANS/WP.15/AC.1/140/Add.2).

Discussion

2. Section 6.8.2 in ADR and RID sets out the general requirements applicable to fixed tanks (tank vehicles)/tank-wagons, tank-containers, tank swap bodies intended for the carriage of all classes and battery-vehicles/battery-wagons and MEGCs for gases of class 2.

¹ In accordance with the draft programme of work of the Inland Transport Committee for 2016-2017, (ECE/TRANS/WP.15/2015/19 (9.2)).

² Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2016/11.

3. Sections 6.8.2 to 6.8.5 contain special requirements supplementing or modifying the requirements of section 6.8.2. For battery-vehicles/battery-wagons and MEGCs these are mainly covered in 6.8.3.

4. In paragraph 6.8.3.1, concerning construction of battery-vehicles/battery-wagons and MEGCs, there is a requirement that the elements and their fastenings shall be capable of adsorbing, under the maximum permissible load, the forces defined in 6.8.2.1.2.

Neither 6.8.3.1 nor 6.8.2.1.2 cover the framework and fastenings of the MEGCs or battery-vehicle/battery-wagon.

5. For UN multiple-element gas containers the following requirements for MEGCs and their fastenings are found in ADR/RID 6.7.5.2.8:

«MEGCs and their fastenings shall, under the maximum permissible load, be capable of withstanding the following separately applied static forces:

(a) in the direction of travel: twice the MPGM multiplied by the acceleration due to gravity (g)¹;

(b) horizontally at right angles to the direction of travel: the MPGM (when the direction of travel is not clearly determined, the forces shall be equal to twice the MPGM) multiplied by the acceleration due to gravity (g)¹;

(c) vertically upwards: the MPGM multiplied by the acceleration due to gravity (g)¹; and

(d) vertically downwards: twice the MPGM (total loading including the effect of gravity) multiplied by the acceleration due to gravity (g)¹.».

6. Based on this, we suggest aligning the provisions in ADR/RID with UN model regulation for MEGCs and their fastenings. In addition, we ask the joint meeting to consider the option including requirements for battery-vehicles/battery-wagons in the same paragraph.

7. We propose to do the amendments in 6.8.3.1.5. Amending 6.8.2.1.2 was discussed as an option in the Tank Working Group (see paragraph 22 of ECE/TRANS/WP.15/AC.1/140/Add.2), but looking at the structure of 6.8.2 both in ADR/RID it is more in line with the existing text to amend 6.8.3.1.5.

8. As agreed Norway has also, with assistance from EIGA, looked at paragraph 9.7.3 in ADR (see paragraph 23 of ECE/TRANS/WP.15/AC.1/140/Add.2). MEGCs, portable tanks and tank-containers should only be allowed on vehicles whose fastenings are capable of adsorbing, under the maximum permissible load, the forces exerted by:

- - in the direction of travel: twice the total mass;
- - at right angles to the direction of travel: the total mass;
- - vertically upwards: the total mass;
- - vertically downwards: twice the total mass.

9. Based on this we propose to amend ADR 9.7.3 to include MEGCs, UN-MEGCs, portable tanks and tank-containers (Proposal 2).

UN Model Regulation, paragraph 7.2.2 only allows portable tanks to be transported on vehicles whose fastenings are capable of adsorbing the forces specified in 6.7.2.2.12, 6.7.3.2.9 or 6.7.4.2.12, with maximum permissible load. It is a mistake that MEGCs are not included in this paragraph and EIGA will propose the revision of 7.2.2 to the United Nations Sub-Committee of Experts on the Transport of Dangerous Goods.

10. As noted in the report from the last RID/ADR/ADN Joint Meeting (see paragraph 18-24 of ECE/TRANS/WP.15/AC.1/140/Add.2) the definition of MEGCs in ADR/RID Chapter 1.2 does not include the wording "meeting the definition of a container". Looking into chapter 6.7, this is in line with the definition of UN MEGC. However, a MEGC which meet the definition of a "container" within the terms of the International Convention for Safe Containers (CSC) 1972, as amended, has to fulfill the applicable requirements of that convention in addition to ADR/RID chapter 6.7. We believes that MEGCs which meet the definition of "container" given in the CSC (1972), as amended, should be included in ADR/RID 7.1.3 (Proposal 3).

11. In the following proposals tank swap bodies are left in brackets. This is because tank swap bodies by definition (Chapter 1.2) is a tank-container.

Proposal 1

ADR:

Amend 6.8.3.1.5 as following (new text underlined):

Elements and their fastenings of battery-vehicles and MEGCs, and the framework and fastenings of [battery-vehicles and] MEGCs shall be capable of absorbing under the maximum permissible load the forces defined in 6.8.2.1.2. Under each force the stress at the most severely stressed point of the element and its fastenings shall not exceed the value defined in 6.2.5.3 for cylinders, tubes, pressure drums and bundles of cylinders and for tanks the value of σ defined in 6.8.2.1.16.

RID:

Amend 6.8.3.1.5 as following (new text in underlined):

Elements and their fastenings of battery-wagons and MEGCs, and the framework and fastenings of [battery-wagons and] MEGCs shall be capable of absorbing under the maximum permissible load the forces defined in 6.8.2.1.2. Under each force the stress at the most severely stressed point of the element and its fastenings shall not exceed the value defined in 6.2.5.3 for cylinders, tubes, pressure drums and bundles of cylinders and for tanks the value of σ defined in 6.8.2.1.16.

Proposal 2

ADR:

Amend 9.7.3 as following (old text ~~stricken through~~, new text underlined):

Fastenings shall be designed to withstand static and dynamic stresses in normal conditions of carriage, ~~and minimum stresses as defined in 6.8.2.1.2, 6.8.2.1.11 to 6.8.2.1.13, 6.8.2.1.15 and 6.8.2.1.16 in the case of tank vehicles, battery vehicles, and vehicles carrying demountable tanks.~~

In the cases listed below these stresses are defined as follows:

- a) for tank-vehicles and vehicles carrying demountable tanks see 6.8.2.1.2 6.8.2.1.11 to 6.8.2.1.13, 6.8.2.1.15 and 6.8.2.1.16;
- b) for [tank swap bodies] and] tank containers see 6.8.2.1.2 6.8.2.1.11 to 6.8.2.1.13;
- c) for battery-vehicles and vehicles carrying MEGCs see 6.8.3.1.5;

- d) for vehicles carrying portable tanks see 6.7.2.2.12, 6.7.3.2.9 or 6.7.4.2.12 as applicable; and
- e) for vehicles carrying UN-MEGCs see 6.7.5.2.8.

Proposal 3

ADR/RID:

Amend 7.1.3 as following (new text underlined):

Large containers, portable tanks, MEGCs and tank-containers which meet the definition of "container" given in the CSC (1972), as amended, or in UIC leaflets 591 (status at 01.10.2007, 3rd edition), 592-2 (status at 01.10.2004, 6th edition), 592-3 (status at 01.01.1998, 2nd edition) and 592-4 (status at 01.05.2007, 3rd edition) may not be used to carry dangerous goods unless the large container or the frame of the portable tank, MEGCs or tank-container satisfies the provisions of the CSC or of UIC leaflets 591 and 592-2 to 592-4."
