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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

Geneva 15-19 September 2014

Item 5 (a) of the provisional agenda

**Proposals for amendments to RID/ADR/ADN:
pending issues**

Modification of RID/ADR 5.5.3

Transmitted by the Governments of Austria and Spain^{1,2}

Summary

Executive summary:	Taking into account the danger of transporting dry ice
Action to be taken:	Modification of RID/ADR 5.5.3.
Related documents:	ECE/TRANS/WP.15/AC.1/2013/INF.39 ECE/TRANS/ WP.15/AC.1/132, paragraphs 88-89 ECE/TRANS/WP.15/AC.1/2014/25 ECE/TRANS/WP.15/AC.1/2014/INF.50

Introduction

1. During the last Joint Meeting, document ECE/TRANS/WP.15/AC.1/2014/25 as modified by ECE/TRANS/WP.15/AC.1/2014/INF.50 was only briefly discussed in the last minutes of the meeting, and proposal 1 of these documents was supported to be included

¹ In accordance with the programme of work of the Inland Transport Committee for 2014–2015 (ECE/TRANS/240, para. 100, ECE/TRANS/2014/23, cluster 9, para.9.2).

² Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2014/43.

into RID/ADR 2015. The rest of the proposals presented were not discussed in depth, and Spain and Austria were asked to present these proposals anew for the next meeting.

Therefore, Spain and Austria present again the rest of their proposals, as modified in ECE/TRANS/WP.15/AC.1/2014/INF.50.

2. In road transport, to ensure the safety of the driver during the transport process, it would be advisable to separate the driver from the load in such a way that the asphyxiating gases cannot reach her/him, by having a load compartment isolated from the cabin. If the driver's cabin is not separated, it is useless to have a warning affixed at each access point in a location where it will be easily seen by persons opening or entering the vehicle (5.5.3.6.1). Therefore it is advised to ensure that the vehicles are well ventilated, or to use gas detection systems during transport.

Very often commercial vehicles, where the cabin is not completely separated from the load compartment, are used to deliver packages with dry ice as coolant.

There is safety information from EIGA that shows clearly that carbon dioxide, differently from other substances, like nitrogen, used also for cooling purposes, is not just an asphyxiant, but is dangerous even when sufficient oxygen is present. (https://www.eiga.eu/fileadmin/docs_pubs/Doc_150_08_E.pdf).

Therefore, a separation of the driver's cab from the load compartment is an effective measure to increase the driver's safety (proposal 2, ADR only).

3. Into these provisions it should also be included the possibility, that was not taken into account in the text approved for ADR 2015, that the insulated, refrigerated or mechanically refrigerated equipment used for transporting the dangerous goods may not be destined for transport of perishable foodstuffs, but also for other purposes, for example pharmaceutical transports. Therefore, into the text the reference to ATP should be defined as a non-exclusive possibility (proposal 2, ADR only).

4. To be able to include this last point mentioned in paragraph 3 also into RID, the words "for example" should be also included into RID text (proposal 3, RID only).

5. Into the marking provisions it should also be clearly stated that these are only necessary in case the vehicle or container is not well ventilated (proposal 4).

The values for well ventilated in the proposed note are required by the rules for the protection of workers.

Therefore the content of carbon dioxide shall be below 0.5% (e.g.: Directive 2006/15/EC, or OSHA-PEL). This requirement for dry ice is more stringent than the general requirement for the minimum content of oxygen in the atmosphere of 19.5% from the ISO 11625 in its current version. The 19.5% oxygen content is only relevant for the other coolants like nitrogen, refrigerated liquid.

To ensure that a vehicle is well ventilated can be achieved by adequate instructions. The evaluation can be done by calculation (e.g. like: Technical Assessment of Dry Ice Limits on Aircraft) or by measurement. Usually this evaluation will be done only once and on the basis of a worst case. The instructions can limit the number of packages and require a certain setting for the ventilation.

6. Finally, we see a contradiction in not applying any restrictions to the transport of UN 1845 when it is not transported as a coolant. For the other materials used for cooling or conditioning purposes, when they are carried as a consignment, the full ADR regulation applies.

For UN 1845 no restrictions are applied when transported as a consignment. At least, the same conditions should apply when transporting dry ice as a consignment than when it is transported as a coolant or conditioner.

Therefore, it may be necessary to regulate not only dry ice as a coolant or conditioner, but also as dangerous goods transported by themselves, applying the conditions of transport stated in 5.5.3. for all kinds of carriage of UN 1845 (proposal 5).

Proposals

7. The proposed new text is included in *italics*.

2. Proposal (ADR only)

Amend 5.5.3.3.3 to read as follows:

“5.5.3.3.3

a) Packages containing a coolant or conditioner shall be carried in well ventilated vehicles and containers. Marking according to 5.5.3.6 is not required in this case.

Note: in this context “well ventilated” means to ensure that carbon dioxide is below 0.5% and that oxygen content is above 19.5%.”

b) Ventilations is not required if:

- *gas exchange between the load compartment and the drivers cabin is prevented*
- *the load compartment is insulated, refrigerated or mechanically refrigerated equipment, for example as defined in the Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for such Carriage (ATP) where this requirement is fulfilled.*

In this case, the vehicles, in regard to 5.5.3.6.1, shall be considered as not well ventilated.

3. Proposal (RID only)

Amend 5.5.3.3.3 to read as follows:

“5.5.3.3.3 Packages containing a coolant or conditioner shall be carried in well ventilated wagons and containers. This provision does not apply when such packages are carried in insulated, refrigerated or mechanically refrigerated equipment, *for example* as defined in the Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for such Carriage (ATP).

Note: in this context “well ventilated” means to ensure that carbon dioxide is below 0.5% and that oxygen content is above 19.5%.”

4. Proposal (ADR and RID)

Amend 5.5.3.6.1 to read as follows:

5.5.3.6.1 *Not well ventilated vehicles/wagons and containers* containing dangerous goods used for cooling or conditioning shall be marked with a warning mark, as specified in 5.5.3.6.2, affixed at each access point in a location where it will be easily seen by persons opening or entering the vehicle/wagon or container. This mark shall remain on the vehicle/wagon or container until the following provisions are met:

- (a) The vehicle/wagon or container has been ventilated to remove harmful concentrations of coolant or conditioner; and
- (b) The cooled or conditioned goods have been unloaded.

5. Proposal (ADR and RID)

In Table A for UN 1845 replace “NOT SUBJECT TO ADR - When used as a coolant, see 5.5.3” by “*Only subject to the provisions of 5.5.3*”

Amend 5.5.3.1.1 to read as follows:

“5.5.3.1.1 This section is not applicable to substances which may be used for cooling or conditioning purposes when carried as a consignment of dangerous goods, *except for the transport of dry ice (UN 1845)*. When they are carried as a consignment, these substances shall be carried under the relevant entry of Table A Chapter 3.2 in accordance with the associated conditions of carriage.

For UN 1845, the conditions of transport specified in this section, except 5.5.3.3.1, do apply for all kinds of transport, as a coolant, conditioner, or as a consignment. For the carriage of UN 1845, no other provisions of RID/ADR apply.
