

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

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Item 6 of the provisional agenda

Interpretation of ADR

6 November 2018

Comment on INF.10: Interpretation of the requirements for thermal insulation in 7.1.7.4.5 of ADR 2019

Transmitted by the Government of the United Kingdom

Introduction

1. At the 103rd session of WP.15 the adoption of new text from the UN led to an examination of the ADR text regarding the transport of substances requiring temperature control. The meeting decided that certain sections of text should also appear in the UN Model Regulations and the expert for The Netherlands submitted paper ST/SG/AC.10/C.3/2018/39 to this effect. The expert from the United Kingdom expressed some concerns about the proposed changes at the UN meeting but the text of 2018/39 with some changes as reflected in ST/SG/AC.10/C.3/2018/65 was adopted in square brackets.

2. The primary concern of the expert from the United Kingdom was that in transferring the ADR text to the UN, the context of some of the ADR provisions in relation to vehicles was lost because the UN has no matching references. This meant that the new text in the UN could easily be misinterpreted and could result in serious accidents occurring during transport. Following discussions with the expert from the Netherlands, they have requested the withdrawal of their UN paper 2018/39 pending further discussions at WP.15.

3. This information paper has been prepared by the expert from the United Kingdom to provide a basis for an informed discussion at the 104th session of WP.15 and to explain why this expert does not believe that it is appropriate for the ADR text to be offered for inclusion at the UN level.

Historical Perspective of the UN and ADR Text

4. The text on temperature control first appears in the UN Recommendations 6th Edition (1990). At that time the text, under the heading “Transport under temperature control”, started in 11.3.10.1 ‘Since the circumstances to be taken into account differ for the various modes of transport, only general guidance is given in the following paragraphs’. Today this same text is the Note under the heading 7.1.5.4. “Transport under temperature control”. The current text 7.1.5.4.1 to 7.1.5.4.5 is almost verbatim from the 6th Edition, with the only major text change being 7.1.5.4.5 (c) and (e) iii where a defined break point has been introduced and a change from flame proof to explosion proof. The basic concept is a list of methods of increasing effectiveness set out in (a) to (e).

5. The UN text from the 6th Edition appears in the 1995 edition of ADR at marginal 52 105 but has a significant difference in that the (c), (d) and (e) methods of meeting temperature

control all have “thermal insulation and” added at the beginning of each description. However, ADR also added context to these additions firstly in marginal 52 204, where it required the vehicle to meet certain requirements (given in 52 248) when an insulated, refrigerated or mechanically-refrigerated vehicle is required. This does not state that this equates to methods (c), (d) and (e) but also in the same marginal it allowed protective packagings filled with a coolant to be transported in closed or sheeted vehicles. This equated to method (b) and does not require the vehicle to meet the thermal insulation factor.

6. Both UN and ADR refer to the provisions of (b) and (c) in method (d). The intent here is to make sure the vehicle is to the same standard as in (c), and that the coolant warnings given in method (b) are observed.

7. When ADR was reformatted in 2001 the text moved to 7.2.4 V8 with (a), (b), (c) etc. becoming R1, R2, and R3 etc. with one significant change. In V8 (5) “or containers” was added after “vehicles” and both then had to comply with the provisions of Chapter 9.6 which was the text of marginal 52 248. However, no amendments were made to Chapter 9.6 which still refers exclusively to vehicles. The moving of the ADR text from V8 to 7.1.7 makes some small changes to the text for clarity but is essentially the same.

8. In summary, the basic system as described in the UN recommendations was adopted by ADR nearly 25 years ago and from the outset ADR added its own operational and vehicle requirements. Both sets are substantially the same as they were from the start and are aligned except for the operational provisions in ADR.

ADR SPECIFIC COMMENTS/ INTERPRETATIONS FOR DISCUSSION

9. It should be held in mind throughout that the text is primarily related to the transport of packaged dangerous goods as with the exception of Type F and polymerising substances no tank codes are provided. And that this refers to the text that has been adopted to ADR 2019.

- i. Method (a) is primarily concerned with packaging rather than vehicles. A thermos flask would be a good example of thermal insulation, similarly a fully lined polystyrene box. Unless specifically directed there are many instances where no particular vehicle is described and this type of packaging can be used.
- ii. Following on from (a), 7.1.7.4.8 effectively describes a method (b) package and allows the vehicle to be either a closed vehicle or a sheeted vehicle. There is no reference that the vehicles should be insulated. Since method (b) gives a higher level of control capability it follows that the vehicle used in method (a) would not need to equal or exceed that required for method (b). Therefore the thermal insulation given here could be either packaging or vehicle related. Examples would be taking the polystyrene box in method (a) and surrounding the inner packaging with dry ice, or dry ice in an insulated cargo compartment.
- iii. This leads to the conclusion that ADR in adding “Thermal insulation and” to methods (c), (d) and (e) was and is directly linked to the vehicle which is supported by 7.1.7.4.7 which directs users to 9.6 (vehicle and container requirements), only when “substances **are required to be carried in** insulated, refrigerated or mechanically-refrigerated vehicles or containers shall satisfy the requirements of Chapter 9.6”. Vehicles for substances not required to be carried in such vehicles are dealt with in 7.1.7.4.8.

- iv. The amendment to add “containers” to the ADR text was basically sound, since prior to the insertion the only legal way to move these packages would have been in a compliant vehicle. However, in attaching it to the vehicle provisions it has been swept into 9.6 which is exclusively concerned with vehicles. This should be rectified because there is a requirement with no provisions.
- v. The references in (d) to the provisions in (b) and (c) we believe only relate to the sub clauses (i) to (iv) in (b) and the fittings etc. in (c). If the expectation that a package in a thermally insulated with a mechanical refrigeration system vehicle had to itself to be thermally insulated with a coolant system as well, this could produce a serious safety issue. The product in the insulated package would be able to warm up because it would be protected from the cooling of the fridge by its insulation.
- vi. Although 7.1.7.4.7 appears to impose the requirements of Chapter 9.6, the actual text is currently deficient in a number of ways. Firstly the allocation of the methods which is done in 7.1.7.4.6 is permissive using the word may. There are no substances that must be moved using insulated refrigerated vehicles as such. Secondly, the text in 7.1.7.4.6 only refers to the methods and the methods themselves do not indicate that the provisions relate to vehicles or containers in methods (c), (d) and (e).

Proposals

- 10. In paragraph 7.1.7.4.5 subsections (c), (d) and (e) “Vehicle or container with” at the beginning of the sentence.
- 11. In paragraph 7.1.7.4.7, amend the text so that it reads “Vehicles carrying substances in accordance with methods (c), (d) or (e) of 7.1.7.4.5 shall meet the requirements of 9.6”.

Justification

- 12. The first amendment removes any doubt as to the items requiring thermal insulation in road transport in methods (c), (d) and (e). The second amendment acknowledges that the construction of refrigerated containers is outside the remit of ADR.
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