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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**

Geneva, 19-29 September 2023

Item 2 of the provisional agenda

**Tanks****Clarification of the provisions on the holding time for the  
carriage of tanks with refrigerated liquefied gases****Transmitted by the International Union of Railways (UIC) \*,\*\*****Introduction**

1. In document ECE/TRANS/WP.15/AC.1/2021/29 for the RID/ADR/ADN Joint Meeting (Geneva, 21 September to 1 October 2021) UIC again posed the question of whether the provisions for determining the holding time for refrigerated liquefied gases also apply to empty tank-wagons and tank-containers.
2. Unfortunately, due to time constraints the document was not dealt with at that meeting and was therefore postponed to the RID/ADR/ADN Joint Meeting in March 2022.
3. The report from the Joint Meeting's working group on tanks in spring 2022 (ECE/TRANS/WP.15/AC.1/164/Add.1) noted the following:  
*"12. It was questioned by UIC if the holding time would also be applicable to empty uncleaned tanks. Initial discussions revealed that holding time is only determined for full tanks. It was said that it is very difficult to determine a holding time if only a limited amount of refrigerated liquefied gas remains in an empty uncleaned tank.*  
*13. It was mentioned that currently work is ongoing on the guidance document by EIGA that is referenced in footnote 4 to 4.3.3.5 (e). It was said that UIC and EIGA will work together on this topic that will be revisited in a future session. UIC will set up a meeting with EIGA and other concerned organizations."*
4. The above-mentioned meeting of UIC and European Industrial Gases Association (EIGA) took place on 5 December 2022.
5. UIC and EIGA agreed that there is a problem, especially with the carriage of refrigerated liquefied gas residues and that this is mostly due to residual pressure in tanks not

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\* A/77/6 (Sect. 20), table 20.6.

\*\* Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2023/26.



being sufficiently lowered for empty runs. When such incidents occur, railway operations are usually severely affected due to track closures and fire brigade deployments.

6. In road transport, this problem does not occur, as the driver can take the necessary measures to reduce the pressure.

7. In railway transport, the following refrigerated liquefied gases are the most affected by the problem: UN 1951 Argon, refrigerated, liquid, UN 1977 Nitrogen, refrigerated, liquid and UN 2187 Carbon dioxide, refrigerated, liquid.

8. To reduce these occurrences, additional provisions have been included in the EIGA guidance document "Methods to prevent the premature activation of relief devices on transport tanks". For example, Appendix A "Example of a Tank Wagon/Portable Tank/Tank Container inspection sheet" was introduced, which, among other items, lists product-related residual pressures for the carriage of empty tanks.

9. In line with this, further explanations should now be included in RID/ADR/ADN, to clarify who is the original party responsible for preventing the premature activation of the safety valves and which measures should be implemented for uncleaned empty tanks.

## Proposal

10. Amend 4.3.3.6 (RID: both columns/ADR: right-hand column) to read as follows (new text is in bold):

“4.3.3.6 Tanks shall not be offered for carriage **by the consignor**:

- (a) In an ullage condition liable to produce an unacceptable hydraulic force due to surge within the shell;
- (b) When leaking;
- (c) When damaged to such an extent that the integrity of the tank or its lifting or securing arrangements may be affected;
- (d) Unless the service equipment has been examined and found to be in good working order;
- (e) Unless the actual holding time for the refrigerated liquefied gas being carried has been determined;
- (f) Unless the duration of carriage, after taking into consideration any delays which might be encountered, does not exceed the actual holding time;
- (g) Unless the pressure is steady and has been lowered to a level such that the actual holding time may be achieved<sup>4</sup>;
- (h) When they are uncleaned and empty, and the residual pressure in the tank has not been reduced to a level at which the lowest set pressure of the pressure-relief devices is not exceeded during the entire carriage period.\*”**

New footnote \* reads:

“\* *Guidance is provided in the European Industrial Gases Association (EIGA) document "Methods to prevent the premature activation of relief devices on tanks", which can be found at: [www.eiga.eu](http://www.eiga.eu).*”

11. Amend 5.4.1.2.2 (d) to read as follows (new text appears in bold):

“(d) In the case of **loaded** (RID:) tank-wagons, (RID/ADR:) tank-containers or portable tanks carrying refrigerated liquefied gases the consignor shall enter in the transport document the date at which the actual holding time ends, in the following format:

"END OF HOLDING TIME: ..... (DD/MM/YYYY)".”

12. If the RID/ADR/ADN Joint Meeting adopts the above-mentioned proposals, UIC would be prepared to submit a corresponding proposal to the Sub-Committee of Experts to

amend 4.2.3.8 of the Model Regulations as follows (new text appears in bold, deleted text in strikethrough):

- “4.2.3.8 Portable tanks shall not be offered for carriage **by the consignor:**
- (a) In an ullage condition liable to produce an unacceptable hydraulic force due to surge within the shell;
  - (b) When leaking;
  - (c) When damaged to such an extent that the integrity of the portable tank or its lifting or securing arrangements may be affected;
  - (d) Unless the service equipment has been examined and found to be in good working order;
  - (e) Unless the actual holding time for the refrigerated liquefied gas being carried has been determined in accordance with 4.2.3.7 and the portable tank is marked in accordance with 6.7.4.15.2; ~~and~~
  - (f) Unless the duration of carriage, after taking into consideration any delays which might be encountered, does not exceed the actual holding time; **and**
  - (g) **When they are uncleaned and empty, and the residual pressure in the tank has not been reduced to a level at which the lowest set pressure of the pressure-relief devices is not exceeded during entire carriage period.\* ”**

Footnote \* reads again:

“ \* *Guidance is provided in the European Industrial Gases Association (EIGA) document "Methods to prevent the premature activation of relief devices on tanks", which can be found at: [www.eiga.eu](http://www.eiga.eu).*”

## Justification

13. According to UIC and EIGA and in view of the modifications made to the EIGA guidance document, it seemed appropriate to keep the scope of the necessary legal amendments to a minimum, but to make them as precise and effective as possible.

14. By amending 4.3.3.6, it should be clear that in all cases, the consignor bears the primary responsibility for avoiding the premature activation of safety valves during carriage, not only for loaded but also for uncleaned, empty consignments.

15. As the holding time is only determined for loaded tanks (see also paragraph 12 of the report of the working group on tanks (ECE/TRANS/WP.15/AC.1/164/Add.1)), it was further specified in 5.4.1.2.2 (d) that the consignor only has to state the end of the holding time in the transport document for loaded tanks.

16. In UIC and EIGA’s opinion, the modifications to the EIGA guidance document and the requested amendments to the regulations will minimise the risk of the undesirable opening of safety valves during carriage, particularly for uncleaned, empty tanks in rail transport.

## Post scriptum from the Joint Meeting of 20-24 March 2023

17. An excerpt from the report of the working group on tanks (ECE/TRANS/WP.15/AC.1/168/Add.1, paras. 12, 13 and 16) is reproduced below:

*"Item 7: Actual holding time of tanks for refrigerated liquefied gases*

*Informal document: INF.21 (Netherlands)*

*12. In informal document INF.21, the Netherlands raised issues concerning the actual and reference holding times based on the findings after incidents with premature activation of safety valves and a survey by the inspectorate on aspects concerning holding time of tanks for refrigerated liquefied gases.*

13. UIC mentioned that it would forward an official document on this topic for tanks that were empty uncleaned to the September 2023 session of the Joint Meeting. However, this would only deal with some of the issues raised in informal document INF.21.

(...)

16. It was suggested that the Netherlands continue developing ways to improve the situation with the industries involved and continue the discussion in the autumn 2023 session of the Joint Meeting in combination with the document from UIC."

18. UIC wishes to stress that the issue UIC addresses in this document are different from the issues reported by the Netherlands. UIC addresses problems caused by empty, uncleaned tank-wagons and tank-containers, while the Netherlands addresses issues with filled tank-wagons and tank-containers.

19. The first can be solved relatively easily through the measures above proposed, and independently of the issues reported by the Netherlands.

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