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Economic Commission for Europe**Inland Transport Committee****Working Party on the Transport of Dangerous Goods****115th session**

Geneva, 2-5 April 2024

Item 5 (a) of the provisional agenda

**Proposals for amendments to annexes A and B of ADR:
Construction and approval of vehicles****Section 9.7.6 – Rear protection of vehicles****Transmitted by the Government of the United Kingdom****Summary*

Executive summary:	Proposals to clarify the requirements of ADR 9.7.6. in respect to the rear protection of vehicles and the minimum distance required between the rear of a tank and the rear of the bumper to ensure a uniform interpretation.
Action to be taken:	Amend ADR 9.7.6.
Related documents:	ECE/TRANS/WP.15/2020/5 and informal document INF.16 (108 th session) ECE/TRANS/WP.15/2021/7 and informal document INF.5 (109 th session) ECE/TRANS/WP.15/253 paragraphs 19-22 ECE/TRANS/WP.15/AC.1/158/Add.1 (item 9) ECE/TRANS/WP.15/2023/1 and informal document INF.9 (113 th session) ECE/TRANS/WP.15/262 ECE/TRANS/WP.15/2023/13 and informal document INF.22 (114 th session) ECE/TRANS/WP.15/264

I. Background

1. Proposals submitted to the 108th, 109th, 113th and 114th sessions of the Working Party sought to clarify the reference points for measurement of the distance between the rear of a

* A/78/6 (Sect. 20), table 20.5.



tank and the rear of the bumper which is set out in ADR 9.7.6. It should be noted that previous attempts have been made to clarify this distance over many years.

2. The report of the 114th session (document ECE/TRANS/WP.15/264) of November 2023 includes the following regarding the most recent (document ECE/TRANS/WP.15/2023/13) proposal from the United Kingdom:

“Several delegations were of the view that the alternative proposal in informal document INF.22 clarified certain outstanding issues, but that further work was needed to finalize the proposed texts. Being a late informal document, several delegations indicated that they would need more time to consult their experts and stakeholders.

The Working Party noted that the United Kingdom was prepared to continue to work on the topic.

Opinions were divided between the option of having the same minimum distance required between the tank and the bumper bar for all tanks or having different provisions for certain types of tanks depending on materials and construction criteria. The Working Party invited the representative of the United Kingdom to consider these two options in a revised proposal and invited delegations wishing to do so to send him their comments.”

3. The proposals contained in this document have been developed with input from other delegations including Netherlands, Germany and the International Association of the Body and Trailer Building Industry (CLCCR).

II. Justification

4. Previous proposals to amend ADR 9.7.6 have offered a standard approach for all tanks, but the most recent proposals have offered requirements that are based on the type of tank. Some delegates taking the floor at the November 2023 session believed the most recent proposal was overly complex and might cause interpretation issues. Others thought that having technical requirements based on the type of tank was a positive addition.

5. The Working Party asked the United Kingdom to work with those delegations expressing an opinion and return to the April 2024 session with proposals offering delegates a choice between either complex or more straightforward changes to 9.7.6.

6. To set a clear requirement for resistance to impact it is proposed that the provisions of Rev.3 to UN Regulation No. 58 (Rear Underrun Protection Device) are applied by ADR 9.7.6. This is consistent across both proposals below and sets a harmonised strength requirement for the protection afforded to the rear of the tank.

7. It would seem a strong case exists for all tanks, irrespective of their construction to have a bumper positioned at least [100/150] mm from the rearmost face of the bumper to the rearmost point of the tank (see figures 1 and 1 (a) below). This proposal would offer a consistent measurement across all types of tanks and give a clear interpretation regarding standards and approvals.

8. Alternatively, an equally strong case exists for the bumper position to be based on type of tank. The bumper should be positioned at least [100/150] mm from the rearmost part of the tank, but for tanks with additional protection by their design the distance may be reduced to at least [50] mm, provided the distance to the shell respects the minimum values given above (see figures 2 and 2 (a) below).

9. In both proposals the relevant distance is shown in square brackets, to enable a final decision to be taken during the 115th session of the Working Party. As the definition is now described as “from the rearmost face of the bumper to the rearmost point of the tank” this would cause a reduction in clear space to the tank from the bumper for some contracting parties.

10. It should be noted that the proposed amendments use the term “tank” in describing the reference point. The intention of this is to ensure that the shell and any service equipment

are afforded protection by the rear bumper. We believe the use of this term gives a clear understanding of the requirements.

11. It should also be noted that 9.8.5 (Rear protection of MEMUs) includes a requirement for a bumper sufficiently resistant to rear impact as per requirements in 9.7.6 and therefore consideration should also be given to amending 9.8.5 at this time.

III. Proposals

Proposal 1

12. Amend ADR 9.7.6 to read as follows:

“9.7.6 Rear protection of vehicles

9.7.6.1 A bumper shall be fitted to the rear of the vehicle. The bumper shall meet the technical requirements of UN Regulation No. 58 (Rear Underrun Protection Device) [as amended at least by revision 3 or most recent revision at the time of registration, or when entering service if registration is not mandatory].

The rearmost face of the bumper shall be positioned at least [100/150mm] from the rearmost part of the tank (or of its projecting fittings in contact with the substance being carried). This shall be measured as specified in figures 1 and 1 (a).

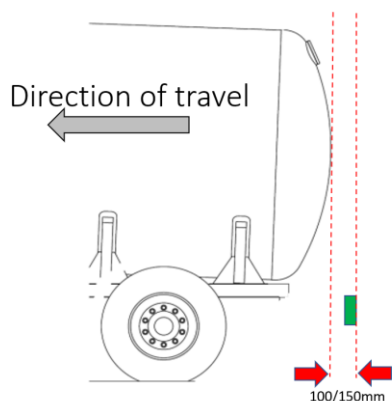


Figure 1

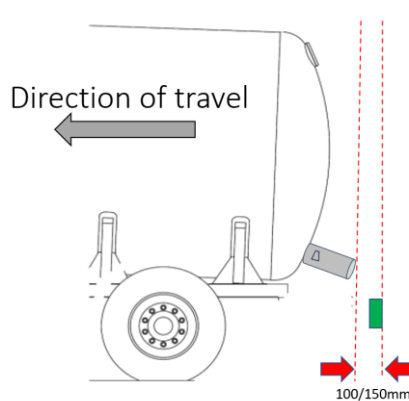


Figure 1 (a)

9.7.6.2 Tanks with a filling or discharge opening at the rear of the tank, such as vacuum operated waste tanks or tilting tanks intended for powdery or granular substances may as an alternative to the position requirements for the bumper as specified in 9.7.6.1, have additional protection for any rear fittings of the tank. The additional protection shall be provided by a metal profile which [has a section modulus of at least 20cm³ in the weakest section].

NOTE 1: This provision does not apply to vehicles used for the carriage of dangerous goods in tank-containers, MEGCs or portable tanks.

NOTE 2: For the protection of tanks against damage by lateral impact or overturning, see 6.8.2.1.20 and 6.8.2.1.21 or, for portable tanks, 6.7.2.4.3 and 6.7.2.4.5.

NOTE 3: For double wall tanks the rear of the tank shall be taken to be the rear of the outermost wall of the tank.”

Proposal 2

13. Amend ADR 9.7.6 to read as follows:

“9.7.6 Rear protection of vehicles

9.7.6.1 General

The rear of the tank and the elements of battery vehicle shall be protected against an impact to the rear by a bumper.

9.7.6.2 *Bumper*

9.7.6.2.1 The bumper shall meet the technical requirements of UN Regulation No. 58 (Rear Underrun Protection Device) as amended at least by at least revision 3 [or most recent revision at the time of registration, or when entered service if registration is not mandatory].

9.7.6.2.2 The bumper shall be so positioned on the vehicle that the distance from the rearmost face of the device (the rear most part of the vehicle) to the rear most part of the tank be at least [100/150mm] (see figure 2).

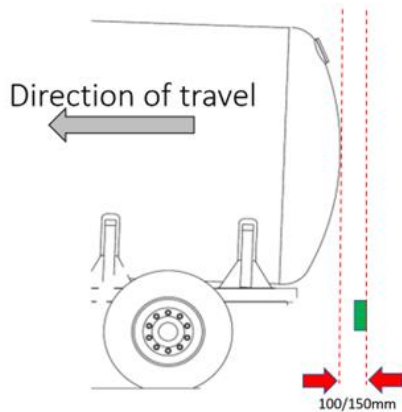


Figure 2

9.7.6.2.3 In case of tanks with double ends and tanks with thermal insulation [excluding tanks with vacuum insulation] the distance from the rear of the tank to the rearmost part of the bumper may be reduced to at least [50 mm] (see figure 2 (a)), provided the distance to the shell respects the value given in 9.7.6.2.2.

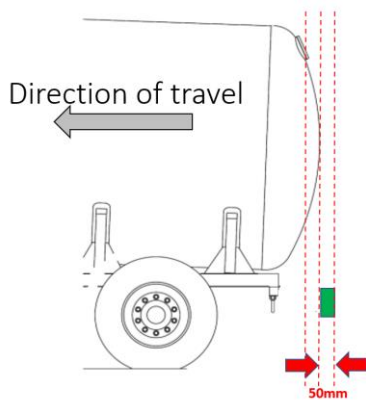


Figure 2 (a)

9.7.6.3 *Vacuum operated waste tanks and tanks for the carriage of granular or powdery substances*

9.7.6.3.1 For tanks with a filling or discharge opening at the rear of the tank, such as vacuum operated waste tanks or tilting tanks intended for powdery or granular substances the tank may alternatively be protected by a metal profile with [a section modulus of at least 20 cm³ in the weakest section].

9.7.6.3.2 The metal profile shall be so positioned on the vehicle that a free space is provided of at least [100/150 mm]. in the horizontal plane between the metal profile and the most rearward part of the closing device to allow for deformation on impact. In the vertical plane the protective device shall be positioned as close as possible above the last closing device but allow for a distance for handling the connection to the closure.

9.7.6.4 *Rear protection provided by vehicles bodywork*

9.7.6.4.1 Tanks that are protected by bodywork, such rear mounted cabinets, compartments used for (service) equipment or tanks fitted inside closed vehicles may be exempt from the requirement to install a protective device, provided the bodywork presents equivalent protection as the RUPD technical specifications.

9.7.6.5 Rear protection of battery vehicles

9.7.6.5.1 Battery vehicles shall be protected against rear impact by a bumper that meets the requirements of UN Regulation No. 58 (Rear Underrun Protection Device) as amended at least by at least revision 3 or most recent revision at the time of registration, or when entering service if registration is not mandatory.

9.7.6.5.2 The bumper shall be so positioned on the vehicle that the distance of the rearmost face of the device (the rear most part of the vehicle) to the rear most part of an element of the battery, cylinder valve or its operating mechanism is at least [100/150mm].

9.7.6.6 Protection of tank against rupture by attachments

9.7.6.6.1 Attachments of structures, such as ladders or camera systems to the rear of the tank shall be protected against rupturing the tank in the event of a rear impact, for example by mounting on doubler plates. Full, unreduced thickness shells (e.g., see 6.8.2.1.18) or equivalent thickness in a material other than mild steel, need no additional protection.

NOTE 1: This provision does not apply to vehicles used for the carriage of dangerous goods in tank-containers, MEGCs or portable tanks.

NOTE 2: For the protection of tanks against damage by lateral impact or overturning, see 6.8.2.1.20 and 6.8.2.1.21 or, for portable tanks, 6.7.2.4.3 and 6.7.2.4.5.”

Proposal 3

14. Provide the following transitional measure in section 1.6.5: “Vehicles registered (or entering service if registration is not mandatory) [before 1 July 2027] which do not meet the rear protection requirements of 9.7.6 applicable from [1 January 2025] may continue to be used.”.

IV. Conclusion

15. These amendments will ensure a uniform interpretation of the measurement that is required between the rear of the tank and the rear bumper. It will also apply the technical requirements of Rev.3 to UN Regulation No. 58 (Rear Underrun Protection Device) and therefore ensure that the rear bumper meets specific requirements. As new technical specifications are being applied, and likely to have been previous misinterpretations, a transitional measure is proposed to enable existing vehicles to continue to be used.

16. As discussions have been ongoing for several years on this subject, and differing interpretations in the construction of vehicles is creating a lack of harmonisation, we believe an agreed interpretation should be reached as soon as possible.