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Working Party on the Transport of Dangerous Goods

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Item 5 (b) of the provisional agenda

Proposals for amendments to RID/ADR/ADN:

New proposals

Exemptions for lithium batteries of UN No. 3536

Transmitted by the Government of Switzerland* **

Summary

Executive summary: Apply the provisions for exemptions related to quantities in 1.1.3.6 to lithium batteries of UN No. 3536.

Action to be taken: For the entry for UN No. 3536, replace “-” with “2” in the first row of column (15) of Table A of Chapter 3.2 and insert UN No. 3536 in the table in 1.1.3.6.1. Amend the first and last sentences of SP 389.

Introduction

1. The entry for UN No. 3536 was introduced to take account of the existence of closed cargo transport units containing a very large lithium-ion storage battery. Such battery systems are used in a variety of power grids and similar applications, such as storage of energy generated by farms of large wind turbines, and also as a source for emergency power. However, the applicable provisions do not distinguish between these large units, which are most often containers, and other types of cargo transport units containing smaller batteries installed on trailers or in vehicles that also supply power external to the vehicle.

2. During the harmonization work by the Ad Hoc Working Group on the Harmonization of RID/ADR/ADN, it seems that the omission of a transport category in column (15) of Table A of Chapter 3.2 was probably chosen because the intention was to consider this entry as a cargo transport unit similar to a fumigated cargo transport unit or a

* Subprogramme 2 of the programme budget for 2020 (A/74/6 (Sect. 20) and additional information).

** Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2020/66.



vehicle, which also have no transport category in column (15). However, this way of interpreting this entry leads in practice to provisions that are much more restrictive and not justified from a safety point of view than those applicable to the same batteries that are not used to supply power external to the cargo transport unit.

3. The term “cargo transport unit” in the description of UN No. 3536 and in the special provision 389 applicable to it implies that they may be containers or even vehicles according to the definition of “transport unit” in 1.2.1. This issue was discussed in a working group at the December 2019 meeting of the Sub-Committee of Experts and the conclusion appears in paragraph 111 of the report in the following terms:

- “(a) The group confirmed that the term “cargo transport unit” was appropriate in the context of UN No. 3536 and was meant to cover containers, wagons and vehicles, in accordance with the definition in 1.2.1. Therefore, there is no need to consider other terms.”

A vehicle can be a towing vehicle or a trailer. It is not necessary to load the “cargo transport unit” in another vehicle to use the entry for UN No. 3536. If this were the case, it would have to be stated in special provision 389, as is done in special provision 666, for example. This involves therefore the transport of lithium batteries and not the transport of a cargo transport unit.

4. In the document that created the new entry UN No. 3536, the purpose of the industry concerned was not to create a specific entry for a “particular cargo transport unit”. Document ST/SG/AC.10/C.3/2015/56, which introduced this subject for the first time, points out in paragraph 1 that lithium batteries should be mounted in racks, cabinets or similar structures securely attached to the interior structure of closed cargo transport units, in particular freight containers and freight vehicles. Thus, in effect, the closed cargo transport unit is the casing for a very large lithium battery. Paragraph 3 of this document states: “In terms of packing, the manner in which the lithium batteries are carried within the closed cargo transport unit conforms generally to the requirements of P903 (2), with the transport unit itself affording additional protection during transport.” The concern of the industry was not the transport of lithium batteries, which is already regulated by packing instruction P903 (2), but determining how to mark and take into account other dangerous goods in addition to those present in these containers, such as fire extinguishers and air-conditioning gases.

5. In conclusion, what we wanted to define is indeed the transport of batteries regulated by the P903 (2) in a vehicle equipped with other safety features such as fire extinguishers and refrigerant gas.

6. With regard to the question of whether this concerns the transport of batteries or that of cargo transport units, there is a difference between the text of special provision 389 of RID/ADR/ADN and the text of the UN Model Regulations that causes confusion and that should be clarified. This concerns the first sentence of special provision 389.

RID/ADR/ADN: “This entry only applies to cargo transport units in which lithium ion batteries or lithium metal batteries are installed and which are designed only to provide power external to the unit.

UN Model Regulations: “This entry only applies to lithium ion batteries or lithium metal batteries installed in a cargo transport unit and designed only to provide power external to the cargo transport unit.”

Unlike the text of the Model Regulations, the text of RID/ADR/ADN does not concern an entry for lithium batteries carried in cargo transport units meeting the provisions of packing instruction P903 (2), but an entry for cargo transport units. This is a significant difference that has consequences when applying exemptions such as those in 1.1.3.6 for transport in packages in RID/ADR/ADN. It should also be noted that the use in French of the term “designed” refers to the cargo transport unit and supports the idea that the entry UN No. 3536 would refer only to cargo transport units, whereas in English and German it is lithium batteries that are designed to provide power external to the unit and not the unit itself. In order to eliminate some of this confusion, Switzerland proposes to include the same sentence in RID/ADR/ADN as in the UN Recommendations (proposal 1).

7. The case at hand is that of trailers that contain permanently installed batteries that are only used at destination and whose quantities of lithium batteries are much smaller than those for which the entry UN No. 3536 was designed.

8. In addition to the text of special provision 389 of the Model Regulations, if reference is made to the name included in column (2) of Table A of Chapter 3.2, “Lithium batteries installed in cargo transport unit”, it also seems clear that the entry for UN No. 3536 should be considered as a type of lithium battery in addition to the entries for UN Nos. 3090, 3480, 3091 and 3481, which, unlike these entries, is not transported in packagings alone or in equipment, but is installed in cargo transport units that have the function of a strong, impact-resistant outer casing, as described in P903 (2).

9. In view of the above, the texts applicable to this entry should therefore be interpreted as applying to the dangerous goods being carried (lithium batteries) and not to the transport of a loaded cargo transport unit. As these batteries of UN No. 3536 are indistinguishable from the batteries of the other four entries for lithium batteries, the same provisions and possible exemptions should apply to them.

10. In land transport, in order to allow the same exemptions based on quantities as for other entries for lithium battery, it would be sufficient to assign them to transport category 2 in the first row in column (15) of Table A of Chapter 3.2. An indication of the transport category would allow transport in cargo transport units containing less than 333 kg of lithium batteries to benefit from the same exemptions as lithium batteries that are not installed in such transport units or that are not intended to generate power external to the vehicle. In other words, for such transport of small quantities there is no need for a safety adviser, ADR driver training, orange-coloured plate marking of the vehicle, placarding, instructions in writing, etc. (Proposal 2).

11. In order to clarify the issue of signs and markings, this difference should also be added to special provision 389 itself, depending on the quantities. Otherwise, we would be obliged to provide orange-coloured marking and placarding of the cargo transport unit for quantities of lithium batteries that, according to 1.1.3.6, normally do not require marking of the transport unit according to Chapter 5.3. This would seem paradoxical. Since the requirement for an orange-coloured plate is also not a provision of the Model Regulations and since the provisions of RID/ADR 5.3.1.1 concerning placards are not identical to those of 5.3.1.1.2 of the Model Regulations, it seems acceptable to continue to legislate on these markings in order to make these provisions more consistent and applicable to land transport (Proposal 3).

Proposal 1

12. In special provision 389, replace the first sentence with the following text:

“This entry only applies to lithium ion batteries or lithium metal batteries installed in a cargo transport unit and designed only to provide power external to the cargo transport unit.”

Proposal 2

13. For the entry for UN No. 3536, replace “-” with “2” in the first row of column (15) of Table A of Chapter 3.2 and insert UN No. 3536 in the table in 1.1.3.6.1. In the table in 1.1.3.6.3, for transport category 2, Class 9, replace “and 3481” with “, 3481 and 3536”.

Proposal 3

14. In special provision 389 of Chapter 3.3, amend the last sentence to read as follows (added text underlined in bold):

Except as provided in 1.1.3.6, cargo transport unit shall bear orange-coloured plates in accordance with 5.3.2.2 and placards in accordance with 5.3.1.1 on two opposing sides.”