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## Economic Commission for Europe

Inland Transport Committee

### Working Party on the Transport of Dangerous Goods

#### 108th session

Geneva, 11–15 May 2020

Item 5 (b) of the provisional agenda

**Proposals for amendments to annexes A and B of ADR:  
miscellaneous proposals**

### **Clarification on the rules for the transport of Battery-Electric-Vehicles and Hybrids as load, special provision 667**

**Submitted by the Government of Austria\***

#### *Summary*

**Executive summary:** Sub-paragraph (ii) of special provision 667 (b) uses vague terms that are open to interpretation. It is not clear when:

- “it is not possible to safely remove the cell or battery”; and
- “it is not possible to verify the status of the cell or battery”.

As an accident covered by the media shows, these terms caused (indirectly) a lot of delay in a transport of a damaged Battery-Electric-Vehicle. These terms should be clarified.

**Actions to be taken:** Amend special provision 667 with an additional note for clarification.

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\* 2020 (A/74/6 (Sect.20) and Supplementary, Subprogramme 2).

## Introduction

1. During the coffee-breaks of the last meeting of the Working Party, several delegates spoke about the coverage of the media after a crash of a Battery-Electric-Vehicle. After the first transport away from the scene of the accident to a safe location, there seemed to be a misunderstanding about the applicable rules for further transportation. It took the owner a lot of time to finally transport the damaged vehicle as load to its final destination, as the media reported.
2. Special provision 667 deals with the conditions of the transport of damaged Battery-Electric-Vehicles as load.
3. However, special provision 667 uses some vague terms for the conditions of the transport. Special problems occur regarding sub-paragraph (ii) of special provision 667 (b).
4. At first, the question arose, when “it is not possible to safely remove the cell or battery” from a damaged or defective vehicle? To remove anything from the car is not a problem in itself, because everything can be removed from a car with special “cutting” tools and much time. Sometimes heavy machinery and specially trained experts are needed. However, the question is what is meant by “safely” in the phrase “safely remove the cell or battery” in ADR?
5. For example, in the case of a damaged Battery-Electric-Vehicle, that has been stationary for days, even after fire of the vehicle: When cutting through permanently installed parts to remove the battery, a high risk occurs. Therefore, labour laws often foresee special conditions that have to be met, like special “cutting” tools and training or protection because of the high voltage system.
6. So, in conclusion, removal of the battery may not be safer than the carriage of the vehicle without removing the battery, as specified in sub-paragraph (i) of special provision 667 (b).
7. Proposal 1 aims to clarify these scenarios.
8. When reading the mentioned ADR requirements, another question arises with the phrase “it is not possible to verify the status of the cell or battery”. If the battery was opened (with heavy tools...), then the status could be checked, even if the aluminium framework of the vehicle melted over the battery pack.
9. Since the requirements are meant to safely transport vehicles as load, there should be a reasonable clarification.
10. For a defect of the system where the vehicle is undamaged, it should be adequate to read and evaluate the data of the cells or the battery through the integrated sensors. Some vehicles offer data through their On-Board-Diagnose system (OBD I or II) or similar systems.
11. For damaged vehicles, an external measurement should also be reasonable.
12. Thus, clarification is needed: when these methods do not give any data or reliable data, then “it is not possible to verify the status of the cell or battery”. Consequently, the vehicle as load should be carried under the conditions of sub-paragraph (i) of special provision 667 (b).

## Justification

13. As an accident covered by the media shows that these terms caused (indirectly) a lot of delay in a transport of a damaged Battery-Electric-Vehicle. These terms should be clarified

## Proposal 1

14. Amend special provision 667 for clarification with the following note added under (b) (ii):

“(a) The provisions of 2.2.9.1.7 (a) do not apply when pre-production prototype lithium cells or batteries or lithium cells or batteries of a small production run, consisting of not more than 100 cells or batteries, are installed in the vehicle, engine, machinery or article;

(b) The provisions of 2.2.9.1.7 do not apply to lithium cells or batteries in damaged or defective vehicles, engine, machinery or article. In such cases the following conditions shall be met:

(i) If the damage or defect has no significant impact on the safety of the cell or battery, damaged and defective vehicles, engines, machinery or article, may be carried under the conditions defined in special provisions 363 or 666, as appropriate;

(ii) If the damage or defect has a significant impact on the safety of the cell or battery, the lithium cell or battery shall be removed and carried according to special provision 376; However if it is not possible to safely remove the cell or battery or it is not possible to verify the status of the cell or battery, the vehicle, engine, machinery or article may be towed or carried as specified in (i).

**NOTE: For example, it is not possible to safely remove the cell or battery, if an accident deforms the vehicle, the cell or the battery and the transport of the battery within the vehicle, as specified in (i), is safer than the removal of the cell or battery, especially if the removal would additionally require:**

- a different extraction method than the method used for undamaged vehicles, like cutting through permanently installed parts; or**
- a special training or protection because of the high voltage system**

(c) The procedures described in (b) also apply to damaged lithium cells or batteries in vehicles, engines, machinery or articles.”.

## Proposal 2

15. As in proposal 1, amend special provision 667 with the following **note under (b) (ii)**:

**“NOTE: For example, it is not possible to verify the status of the cell or battery, if:**

- a defect of the integrated measurement system of a non-damaged vehicle prevents reading or evaluating the data of the cells or the battery, like through the On-Board-Diagnosis-System; or**
- a damage to the vehicle, the battery or the cells prevents the access to internal or for external measurement systems.”.**