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**Economic Commission for Europe****Inland Transport Committee****Working Party on the Transport of Dangerous Goods****102nd session**

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Item 5 (b) of the provisional agenda

**Proposals for amendments to annexes A and B of ADR:****Miscellaneous proposals****Application of UN Nos. 3166 and 3171 to vehicles carried as a load and fuel quantity limits for gas-liquid hybrid engines carried on trailers****Transmitted by the Government of Switzerland\****Summary*

**Executive summary:** Fuel for gas-liquid hybrid engines and quantities permitted on trailers must be taken into account. Indicate in 1.1.3.2 (a), 1.1.3.3 (a) and 1.1.3.7 that vehicles carried as a load must be carried under UN Nos. 3166 and 3171.

**Action to be taken:** Indicate in 1.1.3.2 (a), 1.1.3.3 (a) and 1.1.3.7 that vehicles exempted in line with these provisions must be carried as a load under UN Nos. 3166 or 3171.

In 1.1.3.2 (a), NOTE 2 to 1.1.3.3 (a) and special provision 669, specify the quantity of liquid-gas fuel for hybrid engines on trailers.

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\* In accordance with the programme of work of the Inland Transport Committee for 2016-2017 (ECE/TRANS/2016/28/Add.1 (9.2)).



## Introduction

### Application of UN Nos. 3166 and 3171 to vehicles and their equipment

1. It should be specified in 1.1.3.2 (a), 1.1.3.3 (a) and 1.1.3.7 that these vehicles are assigned to UN Nos. 3166 and 3171 when carried as a load. Without this clarification, persons using vehicles cannot know that additional provisions are applicable when the vehicles are transported as a load.
2. For the vehicles, their equipment and also for containers, it should be indicated in the NOTES to 1.1.3.2, 1.1.3.3 and 1.1.3.7 at the appropriate place that, when carried as a load on another means of transport or vehicle, they must be classified under either UN No. 3166 or UN No. 3171 and transported in the conditions set forth in the relevant entry (Proposal 1).

### Quantity of gas permitted per transport unit in line with 1.1.3.2 (a) and special provision 669

3. The quantity of fuel gas for trailers with equipment powered by hybrid engines running on gas and/or liquid fuels is not made clear in the regulation.
4. In 1.1.3.3 (a), the quantity of liquid fuel on a trailer is set at 500 litres. In NOTE 2 to 1.1.3.3 (a), the existence of gas-liquid fuel hybrid engines is taken into consideration, and 54 000 MJ energy-equivalent, corresponding to 1500 litres of liquid fuel, is set as the maximum for the transport unit. This quantity must also be taken into account when dealing with trailers.
5. SP669 was introduced to make it possible to apply the provisions for vehicles carried as a load (UN No. 3166) to trailers, which do not fall under the definition of a vehicle in special provision 385 (self-propelled apparatus). SP669 also mentions the capacity of 500 litres, the same as is given in 1.1.3.3 (a).
6. In neither case was a corresponding limit set for the maximum energy-equivalent of fuel on a trailer in the case of hybrid (gas/liquid) engines. The Working Party should consider whether to set limits for trailers containing tanks, containers and cylinders for hybrid engines powered by both gas and liquid.
7. The absence of such a limit in 1.1.3.2 (a) and 1.1.3.3 (a) may mean either that trailers containing such fuels together are not exempt under 1.1.3.2 (a) and 1.1.3.3 (a), or that the quantity of 54 000 MJ may be located almost entirely on the trailer and therefore significantly exceed the energy value of 500 litres for liquid fuel receptacles on a trailer, or that a trailer containing hybrid engines is not exempt under these provisions.
8. In SP669, the fact that these fuels for hybrid engines are not mentioned means that trailers that contain such mixed loads of gas-liquid fuels cannot be carried under UN No. 3166 and that the trailers are either subject to all the provisions of ADR or are prohibited as a load.
9. Given that none of these options is desirable, specific energy-equivalent limits should be set for trailers.
10. The energy-equivalent that corresponds to 500 litres of liquid fuel is 18 000 MJ. That value should be included in 1.1.3.2 (a), NOTE 2 to 1.1.3.3 (a) and SP669 (Proposal 2).

## Proposal 1

11. Add a NOTE 3 to 1.1.3.2 (a) and 1.1.3.3 (a) as follows:

“NOTE 3: When carried as a load, vehicles and equipment shall be classified under UN No. 3166 and the transport conditions applicable to that entry shall be met.”

Add the following text to 1.1.3.2 (a) at the end of NOTE 2 and to 1.1.3.3 (a) at the end of NOTE 1:

“When carried as a load, containers shall be classified under UN No. 3166 and the transport conditions applicable to that entry shall be met.”

Add a NOTE to 1.1.3.7 with the following text:

“NOTE: When carried as a load, vehicles and equipment shall be classified under UN No. 3171 and the transport conditions applicable to that entry shall be met.”

## Proposal 2

12. After “54 000 MJ” in the third paragraph of 1.1.3.2 (a), in NOTE 2 to 1.1.3.3 (a) and at the end of SP669, add:

“... and the capacity of the tanks or cylinders fitted to a trailer or on a container that contain both gas and liquid fuels shall not exceed 18 000 MJ energy-equivalent.”

In NOTE 1 to 1.1.3.2 (a), insert the following after the first sentence:

*“The value of 18 000 MJ energy-equivalent corresponds to the fuel limit in 1.1.3.3 (a) for trailers (500 litres).”*

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