

## **Economic Commission for Europe**

### **Inland Transport Committee**

#### **Working Party on the Transport of Dangerous Goods**

##### **110<sup>th</sup> session**

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Item 5 (a) of the provisional agenda

25 October 2021

##### **Proposals for amendments to annexes A and B of ADR: construction and approval of vehicles**

### **Engine fire suppression systems and tire fire protection systems to reduce the likelihood of a boiling liquid expanding vapor explosion (BLEVE) or other catastrophic failure of the tank due to a fire**

#### **Transmitted by International Organization of Motor Vehicle Manufacturers (OICA)**

#### **Introduction**

1. Please find hereinafter OICA's comments with justifications toward the Working Document ECE/TRANS/WP.15/2021/11 regarding "Proposals to include into ADR provisions for an engine fire suppression system and a thermal shield to prevent risk of BLEVE or other catastrophic failure of the tank due to a fire".
2. The BLEVE informal working group, working according to terms of reference from the Joint Meeting, has in Working Document ECE/TRANS/WP.15/2021/11 proposed changes to ADR 9.7.9 with reference to "measures that will prevent a BLEVE or other catastrophic failure of the tank occurring in the event of a fire when flammable liquids and flammable gases are transported".
3. OICA (International Organization of Motor Vehicles Manufacturers) has reviewed the proposed modification of ADR paragraph 9.7.9 and evaluated the possible consequences and risks from safety and design perspectives.
4. Based on the result of that evaluation, OICA proposes changes to the proposal presented in Working Document ECE/TRANS/WP.15/2021/11.
5. OICA highlighted in Informal Document INF.19 of the WP.15 109<sup>th</sup> session miscellaneous technical factors impacting the installation of engine fire suppression system and tires fire protection.
6. To investigate the reasons of these fire risks, OICA commits to scrutinize the accidentology data collected by the BLEVE informal working group to adequately contribute to the discussions on the modification of ADR paragraph 9.7.9.
7. The proposed changes to the document ECE/TRANS/WP.15/2021/11 are marked in strikethrough characters for deleted text and in bold characters for added text.

#### **Proposals**

##### **Proposal 1**

8. Proposed improvements to the modification of ADR paragraph 9.7.9 from the BLEVE informal working group's Working document ECE/TRANS/WP.15/2021/11:

**“9.7.9 Additional safety requirements concerning FL and EX/III vehicles**

9.7.9.1 The following vehicles shall be equipped with an automatic fire suppression system for the compartment where the internal combustion engine propelling the vehicle is located:

~~- FL vehicles carrying liquefied [and compressed] flammable gases with a classification code including an F;~~

~~- FL vehicles carrying packing group I or packing group II liquids; and~~

- EX/III vehicles.

9.7.9.2 ~~The following vehicles shall be fitted with thermal protection on all wheels capable of mitigating the propagation of a fire from the wheels:~~

**Fire propagation from wheels to the load shall be mitigated for the following vehicles:**

~~- FL vehicles carrying liquefied [and compressed] flammable gases with a classification code including an F;~~

~~- FL vehicles carrying packing group I or packing group II liquids; and~~

- EX/III vehicles.

*NOTE: The aim is to avoid the propagation of the fire to the load, for example with thermal shields or other equivalent systems, either:*

*- by direct spread from the wheel to the load; or*

*- by indirect spread from the wheel to the cabin and further to the load; ~~or~~*

*~~- by indirect spread from the wheel to the fuel tank and further to the load.”~~*

**Proposal 2**

9. Proposed amendments to the transitional provisions from the BLEVE informal working group’s Working document ECE/TRANS/WP.15/2021/11:

“1.6.5.xx EX III vehicles first registered or entering into service before 1 January ~~2027~~**2029**, in compliance with the requirements of 9.7.9.2 applicable until 31. December 2022, but not in compliance with the requirements of 9.7.9.2 applicable as from 1 January 2023, may continue to be used.”

“1.6.5.xx FL vehicles first registered or entering into service before 1 January ~~2027~~**2029**, not in compliance with the requirements of 9.7.9.1 applicable as from 1 January 2023, may continue to be used.”

“1.6.5.xx FL vehicles first registered or entering into service before 1 January ~~2027~~**2029**, not in compliance with the requirements of 9.7.9.2 applicable as from 1 January 2023, may continue to be used.”

**Justification**

10. The vehicle manufacturers do not have the means and possibility to handle the proposed sub-designations of the ADR FL vehicle designation. Splitting ADR FL designation into sub-designations (either packing groups or classification code or others) makes it very hard to control the compliance for the first stage manufacturers and potentially the second stage manufacturers, the aftermarket, as well as the end users. The vehicles for transportation of goods are sold multiple times over their lifetime and creating ADR FL sub-designations increases the risks of “non-reliable” and “non-traceable” engine fire suppressions systems and thermal protection systems being installed on the vehicles. OICA points out that it is not possible for first stage manufacturers to secure the compliance to the proposed ADR paragraph 9.7.9.

11. OICA recommends changing the BLEVE group's introduction sentence of ADR paragraph 9.7.9.2 by the following sentence: "*Fire propagation from wheels to the load shall be mitigated for the following vehicles:*". This introduction secures the technological neutrality of the different technical solutions that could be used to mitigate fire propagation from wheels to the load and is well completed by the bullet points listed in the Note.

12. OICA asks the removal of the following text referring to the fuel tank in the Note: "*; or - by indirect spread from the wheel to the fuel tank and further to the load*". OICA asks the BLEVE informal working group to confirm the scope of the group is on the direct spread of fire from the wheel to the load or by indirect spread from the wheel to the cabin and further to the load. The introduction of the fuel tank is a new item which is currently not in the BLEVE IWG scope. OICA highlights that fuel tank connected fire risks and safety issues with regard to the load are already addressed in chapter 9.2.4.3.

13. With regard to the transitional provisions, in any case where technical redesigns of the trucks are necessary, OICA asks to consider the development time, the feasibility of the needed changes and the economic impact to develop a dedicated ADR vehicle. Complementary discussions will be needed to set the adequate lead time.

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