



# Economic and Social Council

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## Economic Commission for Europe

### Inland Transport Committee

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

##### Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods

Berne, 25-28 March 2024

Item 4 of the provisional agenda

##### Interpretation of RID/ADR/ADN

### Carriage under temperature control – requirements according to ADR/ADN 7.1.7.4.2

Transmitted by the Government of Germany\*,\*\*

#### *Summary*

**Explanatory summary:** For carriage under temperature control, the second sentence of ADR/ADN 7.1.7.4.2 stipulates that the temperature must be measured by two independent sensors. Whether the “two independent” requirement relates to the power supply or the temperature measurement is open to interpretation.

**Decision to be taken:** Exchange of opinion and discussion of the interpretation of the second sentence of ADR/ADN 7.1.7.4.2.

**Related documents:**

#### Introduction

1. During an inspection of a semi-trailer loaded with UN 3116 ORGANIC PEROXIDE, TYPE D, SOLID, TEMPERATURE CONTROLLED, (DIMYRISTYL PEROXYDICARBONATE), 5.2, control temperature 20°C, emergency temperature 25°C, compliance with the temperature control provisions in accordance with ADR/ADN 7.1.7.4 was also checked. A thermally insulated semi-trailer with a refrigeration system (in accordance with ADR/ADN 7.1.7.4.5) was used. The semi-trailer was equipped with two sensors. One was connected to the refrigeration unit, the other to an additionally installed temperature monitoring system. The power supply for both systems, including the sensors,

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

\*\* Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2024/21.



was provided exclusively via the refrigeration system. There was no secondary power supply, so if the refrigeration system failed, the temperature could no longer be monitored.

2. If the temperature had been exceeded, the data from the sensor in the temperature monitoring system would have been transmitted to the system operator by mobile radio. From there, these data would automatically have been transmitted to the carrier. The optical alarm on the navigation device would also be triggered by the carrier via mobile radio, which would then start flashing. The acoustic alarm would have sounded by means of a telephone call to the vehicle driver's mobile radio device. The temperature was checked using mobile radio via the navigation device. The driver was able to trigger a temperature query by entering the trailer's registration number into the device.

3. The assessment of this system showed that the main requirements of ADR/ADN 7.1.7.4 were met, but there were different views with regard to the sensors. According to the second sentence of ADR/ADN 7.1.7.4.2, the temperature of air space inside must be measured by two independent sensors. The requirement for independent sensors could be interpreted to mean that the sensors must have independent power supplies to ensure redundancy in the event of a sensor failure. On the other hand, this could also mean that the sensors must be fitted at different points in the transport unit so that the temperature measurement is taken at different places within the transport unit. What would support the latter is the fact that the air temperature is measured and different temperature zones can occur within the transport unit. In addition, the last sentence of ADR/ADN 7.1.7.4.2 requires a power supply for the alarm system powered independently of the refrigeration system, which would suggest that the independence required in the second sentence does not refer to the power supply.

## **Discussion**

4. Germany requests clarification as to whether the second sentence of ADR/ADN 7.1.7.4.2 requires sensors with independent power supplies or whether two independent temperature measurements at different points within the transport unit are required.

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