

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

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Item 5 (a) of the provisional agenda

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

Tyre Pressure Monitoring System

Transmitted by the Government of the Netherlands

Introduction

1. In the March 2021 session of the WP.29 additional regulation was adopted for tyre pressure monitoring systems for heavy duty vehicles. Tyre pressure monitoring systems are seen as an effective tool to prevent tyre fires that can present a serious risk to dangerous goods carried.

2. In the European Union mandatory application will be regulated by the so called “General Safety Regulation” but outside the EU and EEA mandatory application is not automatic. It should therefore be considered if in due time a new subsection should be introduced to regulate mandatory fitment of these systems. Date of entry into force could be the 6th of July 2024 as this would match the transitional measure in Regulation No. 141 Rev1 for heavy duty vehicles.

Suggestions for amendment:

3. Introduce a new provision to read:

“9.2.4.7.7. Tyre Pressure Monitoring System

Motor vehicles and trailers shall comply with the technical requirements of UN Regulation No. 141 Rev 1 as amended, in accordance with the dates of application specified therein.”

4. Enter a new line in the table of 9.2.2 to read:

Technical specifications		Vehicles				Comments
		EX/II	EX/III	AT	FL	
9.2.4.7.7	<i>Tyre pressure monitoring system</i>	<i>X^{k,l}</i>	<i>X^{k,l}</i>		<i>X^{k,l}</i>	<i>^k Applicable to vehicles first registered (or which entered into service if registration is not mandatory) after [6th of July 2024]. ^l Applicable to trailers with a maximum mass exceeding 3.5 tonnes after 1 July 2025</i>

Background information

5. Tyre fires are a re-occurring type of incident that can cause a serious risk to the dangerous goods carried. Tyre fires may start by underinflated tyres, binding brakes or worn or damaged wheel bearings. All these items have in common that heat develops that will eventually ignite the tyre.

6. In the past it was agreed by WP.15 that a tyre pressure monitoring system would be an effective system to prevent tyre fires as before the tyre ignites the pressure would rise due to the increased temperature. The wish for such a system was expressed to WP.29.
 7. The development of an effective tyre pressure monitoring system that resulted in original UN Regulation No. 141 proved to be complex as tyre pressure increases from the start of a journey with cold tyres to a normal running temperature and the question when the pressure indicates a fire hazard. Simple systems were developed based on the wheel speed sensors already present for the ABS system, that registered increased drag of a wheel that is under pressurized. Besides systems were developed measuring the actual pressure and other data in the tyre itself. The original UN Regulation No. 141 applied only to light vehicles.
 8. The new Revision 1 of UN Regulation No. 141 applies as well to light as heavy duty vehicles. For Heavy Duty Vehicles the system is not so different but the interchangeability with trailers required a common protocol for communication.
 9. The new Rev1 addresses only vehicles, and no separated system approvals. However, the communication protocol will stimulate system manufacturers to develop systems suitable for retrofit so that existing trailers, that have a longer average service life than motor vehicles, may communicate correctly with the systems in the new motor vehicles.
 10. It will take some time before the new Rev1 will be officially adopted by the UN and for Contracting Parties to the 1958 Agreement to refuse type approvals of vehicles (and consequently new vehicles) that do not include the new Rev1. The date given for this in the new Rev1 is 6th of July 2024. For the text of the new Rev1 of UN Regulation No. 141 see https://unece.org/sites/default/files/2021-01/ECE-TRANS-WP29-2021-010e_0.pdf.
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