

## Economic Commission for Europe

### Inland Transport Committee

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

106<sup>th</sup> session

Geneva, 13-17 May 2019

Item 6 (a) of the provisional agenda:

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

295 April 2019

### 9.2.1 Braking system for EX/II vehicles of categories O<sub>1</sub> and O<sub>2</sub>

Transmitted by the Government of Sweden

#### Introduction

The Government of Sweden would like to raise a question concerning EX/II-approval of category O<sub>1</sub> trailers (maximum mass of 750 kg) and category O<sub>2</sub> trailers (maximum mass between 750 kg and 3.5 tonnes) and whether a braking system should be required that automatically brakes the trailer to a stop if the coupling device separates while the trailer is in motion.

Currently, ADR does not include any specific requirements concerning braking for either EX/II or EX/III vehicles of categories O<sub>1</sub> and O<sub>2</sub>, but refer to UN Regulation No.13, Annex 5. However, UN Regulation No.13, Annex 5, only states that EX/III vehicles of categories O<sub>1</sub> and O<sub>2</sub> must be equipped with a braking system that automatically brakes the trailer to a stop if the coupling device separates while the trailer is in motion. EX/II vehicles are not mentioned. *See extracts from ADR and R13 under "Background information" below.*

Compared to EX/II vehicles, the maximum permissible net mass of explosives is larger on EX/III vehicles according to sub-section 7.5.5.2.1 in ADR. However, what concerns an O<sub>1</sub> trailer, it is not possible to legally carry any larger amounts on an O<sub>1</sub> trailer than what is also allowed on an EX/II vehicle (except for explosives with classification code 1.1A). Since these trailers might be practical to use in connection to e.g. demolition work, we believe these kind of transport units might be quite common. For the aforementioned reasons, we would like to ask for the view of the WP.15-meeting on the following:

- Would it be appropriate to introduce the same braking requirement for EX/II vehicles of categories O<sub>1</sub> and O<sub>2</sub> as applicable to EX/III vehicles in paragraph 2.4 of UN Regulation No.13, Annex 5?

## Background information

### Extract from ADR

9.2.3	BRAKING EQUIPMENT	EX/II	EX/III	AT	FL	
9.2.3.1	General provisions	X	X	X	X	
	Anti-lock braking system	X <sup>c</sup>	X <sup>d,e</sup>	X <sup>d,e</sup>	X <sup>d,e</sup>	<p><sup>d</sup> Applicable to motor vehicles (tractors and rigid vehicles) with a maximum mass exceeding 16 tonnes and motor vehicles authorized to tow trailers (i.e. full-trailers, semi-trailers and centre axle-trailers) with a maximum mass exceeding 10 tonnes. Motor vehicles shall be equipped with a category 1 anti-lock braking system.</p> <p>Applicable to trailers (i.e. full-trailers, semi-trailers and centre axle-trailers) with a maximum mass exceeding 10 tonnes. Trailers shall be equipped with a category A anti-lock braking system.</p> <p><sup>e</sup> Applicable to all motor vehicles and applicable to trailers with a maximum mass exceeding 3.5 tonnes, first registered (or which entered into service if registration is not mandatory) after 31 March 2018.</p>
	Endurance braking system	X <sup>f</sup>	X <sup>g</sup>	X <sup>g</sup>	X <sup>g</sup>	<p><sup>f</sup> Applicable to motor vehicles with a maximum mass exceeding 16 tonnes or authorized to tow a trailer with a maximum mass exceeding 10 tonnes first registered after 31 March 2018. The endurance braking system shall be of type IIA.</p> <p><sup>g</sup> Applicable to motor vehicles with a maximum mass exceeding 16 tonnes or authorized to tow a trailer with a maximum mass exceeding 10 tonnes. The endurance braking system shall be of type IIA.</p>

### 9.2.3 Braking equipment

#### 9.2.3.1 General provisions

9.2.3.1.1 Motor vehicles and trailers intended for use as transport units for dangerous goods shall fulfil all relevant technical requirements of UN Regulation No.13<sup>4</sup>, as amended, in accordance with the dates of application specified therein.

9.2.3.1.2 EX/II, EX/III, FL and AT vehicles shall fulfil the requirements of UN Regulation No.13<sup>4</sup>, Annex 5.

9.2.3.2 *(Deleted)*

*Comment:* Consequently, neither an anti-lock braking system nor an endurance braking system seem to be required for an EX/II vehicle of category O<sub>1</sub> or O<sub>2</sub> since these vehicles have a maximum mass of 750 kg and 3,5 tonnes respectively.

<sup>4</sup> UN Regulation No. 13 (Uniform provisions concerning the approval of vehicles of categories M, N and O with regard to braking).

## Extract from UN Regulation No.13

### ANNEX 5

#### ADDITIONAL PROVISIONS APPLICABLE TO CERTAIN VEHICLES AS SPECIFIED IN THE ADR

##### 1. SCOPE

This annex applies to certain vehicles which are subject to section 9.2.3 of Annex B to the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).

##### 2. REQUIREMENTS

##### 2.1. General provisions

Power-driven vehicles and trailers intended for use as transport units for dangerous goods shall fulfil all relevant technical requirements of this Regulation. In addition, the following technical provisions shall apply as appropriate.

##### 2.2. Anti-lock braking system of trailers

##### 2.2.1. Trailers of category O<sub>4</sub> shall be equipped with category A anti-lock systems as defined in Annex 13 to this Regulation.

##### 2.3. Endurance braking system

##### 2.3.1. Power-driven vehicles having a maximum mass exceeding 16 tonnes, or authorised to tow a trailer of category O<sub>4</sub> shall be fitted with an endurance braking system according to paragraph 2.15 of this Regulation which complies with the following requirements:

##### 2.3.1.1. The endurance braking control configurations shall be from a type described in paragraphs 2.15.2.1 to 2.15.2.3 of this Regulation.

##### 2.3.1.2. In the case of an electrical failure of the anti-lock system, integrated or combined endurance braking systems shall be switched off automatically.

##### 2.3.1.3. The effectiveness of the endurance braking system shall be controlled by the anti-lock braking system such that the axle(s) braked by the endurance braking system cannot be locked by that system at speeds above 15 km/h. However, this requirement shall not apply to that part of the braking system constituted by the natural engine braking.

##### 2.3.1.4. The endurance braking system shall comprise several stages of effectiveness, including a low stage appropriate for the unladen condition. Where the endurance braking system of a power-driven vehicle is constituted by its engine, the different gear ratios shall be considered to provide the different stages of effectiveness.

##### 2.3.1.5. The performance of the endurance braking system shall be such that it fulfils the requirements of paragraph 1.8 of Annex 4 to this Regulation (Type-IIA test), with a laden vehicle mass comprising the laden mass of the motor vehicle and its authorised maximum towed mass but not exceeding a total of 44 tonnes.

##### 2.3.2. If a trailer is equipped with an endurance braking system it shall fulfil the requirements of paragraphs 2.3.1.1 to 2.3.1.4 above as appropriate.

##### 2.4. Braking requirements for EX/III vehicles of categories O<sub>1</sub> and O<sub>2</sub>

##### 2.4.1. Notwithstanding the provisions of paragraph 5.2.2.9 of this Regulation, EX/III vehicles, as defined in Regulation No 105, of categories O<sub>1</sub> and O<sub>2</sub>, irrespective of their mass, shall be equipped with a braking system which automatically brakes the trailer to a stop if the coupling device separates while the trailer is in motion.

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*Comment: Annex 5 specifically states that category O<sub>1</sub> and O<sub>2</sub> EX/III vehicles must be equipped with a braking system that automatically brakes the trailer to a stop if the coupling device separates while the trailer is in motion. EX/II vehicles are not mentioned.*

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