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**ECONOMIC COMMISSION FOR EUROPE**

INLAND TRANSPORT COMMITTEE

Working Party on the Transport of Dangerous Goods

Seventy-fifth session  
Geneva, 19-23 January 2004  
Agenda item 5 (b)

**PROPOSAL FOR AMENDMENTS TO ANNEXES A AND B OF ADR**

**Retroreflective contour or strip markings for side and rear of vehicles and their trailers**

**Transmitted by the Liaison Committee for the Manufacture of Automobile Equipment  
and Spare Parts (CLEPA)**

**A. Proposal to amend Annex A, Part 5**

Insert a new paragraph 5.3.3. to read :

5.3.3. Side and rear marking of vehicles

5.3.3.1. Presence

Category N vehicles (tractors and rigid vehicles), category O trailers (full trailers, semi-trailers and centre-axle trailers) and coupling units comprising a motor vehicle and a trailer, which belong to or are constituted by at least one of the following types of transport units:

- tank-vehicles
- battery-vehicles with a capacity of more than 1,000 litres

- vehicles carrying demountable tanks
- vehicles carrying tank-containers with a capacity of more than 3,000 litres
- EX/III transport units

first registered on or after 1 January 2004 shall be fitted with retro-reflective strip or contour markings complying with ECE Regulation No. 104 annexed to the 1958 Agreement 1/, and its series of amendments in force at the time of registration, and installed according to the provisions of paragraph 5.3.3.2. below.

5.3.3.2. Installation of strip and contour markings

5.3.3.2.1. Colours

Retro-reflective strip and contour markings shall be white or yellow to the side and red to the rear 2/.

5.3.3.2.2. Arrangement

5.3.3.2.2.1. Retro-reflective strip and contour markings may be made up of one or several elements and shall be mounted as close as possible to the horizontal or vertical, compatible to the design and operation requirements of the vehicle.

5.3.3.2.2.2. The lower edge of the retro-reflective marking shall be located at least 250 mm above the ground, with the vehicle unladen and placed on a flat, horizontal surface and its movable components in the normal position of use.

5.3.3.2.3. Position

5.3.3.2.3.1. The mounting of the retro-reflective markings shall identify as closely as possible the entire length and width (in the case of strips) or the shape (in the case of contour markings) of the vehicle. "Entire" means at least 80 per cent of the length and/or width of the vehicle as indicated in the relevant vehicle documents.

5.3.3.2.3.2. In the case of non-continuous retro-reflective strips the distance between single elements shall be as small as possible; it shall not exceed 50 per cent of the length of the shortest element.

5.3.3.2.4. Advertising

If additional retro-reflective advertising is located on the side walls of vehicles and transport units indicated in paragraph 5.3.3.1. above, it shall comply with the applicable provisions of ECE Regulation No. 104 annexed to the 1958 Agreement 1/ and its series of amendments in force at the time of registration of the vehicle.

5.3.3.3. Transitional provisions

Vehicles and transport units in service after 1 January 2005 shall be fitted with retro-reflective strip or contour markings as indicated in paragraph 5.3.3.2. above.

Re-number former paragraph 5.3.3. as paragraph 5.3.4.

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1/ Agreement concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions

2/ Nothing in this part shall preclude the Contracting Parties to this Agreement from allowing the use of yellow strip or contour markings to the rear of vehicles in their territories.

**B. Explanatory Notes**

1. Increasing the visibility of ADR transport units in low light and adverse weather conditions reduces the risk of side- and rear-end collisions, as oncoming drivers are being alerted sooner to break or manoeuvre to avoid a collision.

2. In accidents involving ADR vehicles, a reduction in the risk of accident rate also means an increased safety for the environment. Such accidents tend to be more adverse than accidents involving standard heavy or long vehicles as chemical, petrochemical, explosive or radioactive substances are involved.

3. Substantial reduction of 37% in the accident rate of heavy and long vehicles using retro-reflective markings according to ECE Regulation No.104 has been noted in Germany and published by the University of Darmstadt field study in 2000. 3/

4. Even more dramatic reduction in the accident rate has been noted in the United States, where usage of similar ECE Regulation 104 retro-reflective markings has been mandatory since 1993. A recently published paper by the US NHTSA indicates a 41% reduction in the accident rate. 4/

5. The effectiveness of retro-reflective contour and strip markings has proven itself in a number of studies and, over time, in field trials, resulting in its acceptance as one of the least expensive and most cost-efficient ways to further reduce the economic and social pain of accidents involving dangerous goods vehicles.

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3/ "Retroreflective Markings of Vehicles" Volume 7, 2000 - ISBN 2002/26-3-89675-924-8, Darmstadt University of Technology.

4/ "The Effectiveness of Retroreflective Tape on Heavy Trailers" - NHTSA Technical Report DOT HS 809 222, May 2001.