UNITED NATIONS **E**

Economic and Social Council

Distr.
GENERAL

TRANS/WP.15/AC.1/2003/11
2 December 2002

Original: ENGLISH

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on the Transport of Dangerous Goods

Joint Meeting of the RID Safety Committee and the Working Party on the Transport of Dangerous Goods
(Bern, 24-28 March 2003)

CARRIAGE OF RECEPTACLES FOR HOT AIR BALLOONS

Transmitted by the Government of the United Kingdom */

Executive Summary

To amend RID and ADR to permit specified types of lightweight gas receptacles to be transported for the purposes of hot air ballooning.

Action to be taken

Amend column 6 of Table A of Chapter 3.2 and add new Special Provision in Chapter 3.3.

Background and Justification

Hot air balloons are fuelled by hydrocarbon gases, principally UN 1978 Propane but also UN 1011 Butane and UN 1965 Hydrocarbon Gas Mixture, liquefied, n.o.s. The fuel is transported, generally by road, to launch sites in the receptacles that will be used on the balloon in flight for its propulsion. After flights, part-filled receptacles will be returned to the balloon's home base. The receptacles are rarely completely emptied. While they are removable for filling, balloon fuel receptacles are never refilled on an exchange basis: each owner retains his own receptacles and has responsibility for ensuring their maintenance and periodic inspections.

The receptacles concerned are engineered to exacting standards and are supplied as part of the aircraft (i.e the balloon). They are tested and inspected to high standards in accordance with the requirements of local airworthiness authorities to a schedule prescribed by the manufacturer. They are

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*/ Circulated by the Central Office for International Carriage by Rail (OCTI) under the symbol OCTI/RID/GT/III/2003/11.

designed especially to be lighter than other receptacles. A consequence of this is that they cannot comply with the requirement in 6.2.3.1 that at test pressure the stress in the metal should not exceed 77% of the guaranteed minimum yield stress. As a result of this, they do not fully meet the requirements of RID/ADR.

There are currently some 2000-3000 active hot air balloons in Europe, and more than 9,500 lightweight receptacles in use. Hot air balloons are used for commercial purposes including passenger flights. International transport of receptacles in connection with these commercial purposes is frequent.

To permit the carriage of such receptacles by road, a number of ADR Contracting Parties have entered into a multilateral special agreement (M90), which expires on 1 July 2004.

A proposal with a similar purpose was presented to the twentieth meeting of UNSCOE but it was rejected primarily because experts considered that land transport of hot-air ballooning receptacles was too narrow an issue to justify inclusion in multimodal model regulations. The United Kingdom therefore seeks the agreement of the RID/ADR Joint Meeting to the following amendment, that will permit the carriage of these lightweight receptacles by rail and road.

Proposal

In Chapter 3.2, Table A, column 6, insert a new Special Provision number xxx*/ opposite the entries for UN 1011, UN 1965 and UN 1978.

In 3.3.1, insert new Special Provision to read as follows:

"xxx* When this gas is carried for the operation of hot air balloons, it may also be carried in gas pressure receptacles with a wall thickness calculated for a maximum operating pressure at +40°C which meet the following requirements:

- the receptacles are made from rolled and annealed pure titanium with the minimum requirements of (R_m>450MPa, ε_A>20%) or made from austenitic steel;

- the main body of the receptacles are provided with an outer, water resistant protective layer at least 25mm thick made from foam or similar material;

- the receptacles are marked with a clearly visible label stating that the receptacles are only for the operation of hot air balloons.

(ε_A = elongation after fracture)".

*/ Appropriate number to be allocated by Secretariats.