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**ECONOMIC COMMISSION FOR EUROPE**

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**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**  
(Geneva, 10-14 September 2001)

PROPOSAL FOR THE USE OF VACUUM VALVES ON CERTAIN TANKS  
WITH TANK CODE L4BH or SGAH:

Transmitted by the Government of the Netherlands \*/

<i>Executive summary:</i>	This proposal seeks to allow the use of vacuum valves on tanks of ADR tank vehicles and RID/ADR tank containers for the carriage of certain substances assigned to tank codes L4BH and SGAH.
<i>Action to be taken:</i>	Amend 3.2.1 (Table A), 6.8.2.1.7, 6.8.2.5.1, 6.8.4 of ADR and RID
<i>Relevant documents:</i>	TRANS/WP.15/138, TRANS/WP.15/AC.1/74 (OCTI/RID/GT-III/1998-B), --/1998/23, --/1998/23/Add. 1, --/2001/14

**Introduction:**

During the Joint Meeting RID/ADR of September 1994 the decision was taken that the use of vacuum relief valves was not deemed to be compatible with the definition of "hermetically closed". Whereas the most preferred method of protecting shells of (ADR) road tank vehicles against the effects of excessive negative internal pressure is to equip these shells with vacuum valves, this decision would have serious consequences for the design of these shells. WP. 15 therefore decided not to follow that decision for a specific category of road tank vehicles.

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\*/ Circulated by the Central Office for International Carriage by Rail (OCTI) under the symbol OCTI/RID/GT/III/2001/51.

At the Joint Meeting RID/ADR of September 1996 the decision was taken that, in principle, certain dangerous substances which currently must be transported in hermetically closed tanks, can also be transported in certain other types of tanks, for instance equipped with vacuum-relief valves. The informal Working Group on "hermetically closed tanks / vacuum relief valves" was invited to specify these "certain substances" and "certain types of tanks".

These substances and types were identified as substances which are admitted for transport in tanks with a calculation pressure of not more than 400 kPa (4 bar) and equipped for bottom discharge.

The tank properties indicate that the said substances represent a moderate risk, compared with the substances which have to be transported in tanks with higher calculation pressures and equipped for top discharge.

At the Joint Meeting RID/ADR of September 1998 it was decided that a decision on the proposal TRANS/WP.15/AC.1/1998/23/Add. 1 (OCTI/RID/GT-III/1998/23/Add.1) of Germany should be postponed until a further reaching proposal of the United Kingdom would have been dealt with.

Whereas at the last Joint Meeting RID/ADR of May 2001 the -proposal of the United Kingdom (document INF. 12) was not supported, the need for a formal permission of the use of vacuum valves on the above mentioned tanks in ADR became relevant again.

This proposal is aimed at road tank vehicles and RID/ADR tank containers.

**Proposal:**

1. For ADR tank vehicles and tank containers and for RID tank containers only (right column) add a new provision to 6.8.4 Special provisions (b) Items of equipment (TE):  
  
"TE15 Tanks fitted with vacuum valves which open at a negative pressure of not less than 20 kPa (0,2 bar) shall be considered as being hermetically closed."
2. For ADR, amend Table A in 3.2.1: add "TE15" in column (13) to all substances assigned to the tank codes L4BH and SGAH in column (12).
3. For ADR tank vehicles and tank containers and for RID tank containers only (right column), add the following new text after the existing text of 6.8.2.1.7, similar to that in 6.7.2.2.10 of Chapter 6.7 (portable tanks):  
  
"Shells, other than shells according to 6.8.2.2.6, designed to be equipped with vacuum valves shall be able to withstand, without permanent deformation, an external pressure of not less than 20 kPa (0,2 bar) above the internal pressure. The vacuum valves shall be set to relieve at a vacuum setting not greater than the tank's design vacuum pressure. Shells, which are not designed to be equipped with a vacuum valve shall be able to withstand, without permanent deformation an external pressure of not less than 30 kPa (0.3 bar) above the internal pressure."
4. The relevance of retaining 6.8.2.2.3 should be discussed.
5. In 6.8.2.5.1 add: - "external design pressure ----- bar/kPa \*(gauge pressure)".  
  
\* Add the units of measurement after the numerical values.
6. In due course, amend 1.6.3 and 1.6.4 to allow for the further use of existing tanks which do not comply with the requirements of this proposal.

**Justification:**

ad 1.

and 3: As the reliability of the tightness of a vacuum-relief valve is to some extent dependent on the set pressure, there is a need to fix a minimum acceptable value. The informal Working Group on tank issues advised to align with the UN model regulations and the IMDG Code and fix the value at 20 kPa (0.2 bar).

ad 2.: For RID, special provision TE 15 has already been assigned to tank codes LABH and SGAH in column (12).

ad 3.: Another missing detail is a fixed minimum pressure at which a shell must be designed to resist the effects of a negative internal pressure without the use of vacuum valves. Alignment with the UN Model Regulations is proposed in this case too, to that extent, that for road tank vehicles and RID/ADR tank containers a value of minus 30 kPa (0.3 bar) has been proven to be sufficient.

ad 5.: Up to now the information about the maximum allowable negative internal pressure inside the shell is not available when the tank vehicle is in use. Therefore it is not possible to verify if a vacuum valve with the right setting is mounted or even if a vacuum valve is needed. Again, in the UN -Model Regulations, this issue is covered: the value is mentioned on the tank plate. This proposal is to seek alignment in this case too.

*Safety:* the formal permission to use vacuum valves on tanks for this particular group of substances has no influence on safety, because in practice the use of these devices is common for more than thirty years, based on the wording in previous versions of ADR. On the other hand, safety will be increased by the definition of minimum requirements for tank and valve.

*Feasibility:* no problems.

*Enforceability:* enhanced, due to the clarification of criteria for the use of vacuum valves.

*Economical aspects:* depending on national requirements for the design characteristics of shells and vacuum valves until today, the effects will be little to nil.

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