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
(Geneva, 13-23 September 2005)

Comments on document OCTI/RID/GT-III/2005/43 – TRANS/WP.15/AC.1/2005/43

Transmitted by the Secretariat of OTIF

A working group was held in Brussels between 12 and 14 May 1980 to discuss safety valves. The working group's report was considered by the Joint Meeting (Berne, 29 September – 10 October 1980).

Reproduced below for the discussion of Norway's document OCTI/RID/GT-III/2005/43 – TRANS/WP.15/AC.1/2005/43 are the working group's report (document OCTI/RID/GT-III/403 – TRANS/GE.15/AC.1/R.79) and an extract from the report of the Joint Meeting (document OCTI/RID/GT-III/411 – TRANS/GE.15/AC.1/6).

OCTI/RID/GT-III/43
(TRANS/GE.15/AC.1/R.79)
25.7.1980

CENTRAL OFFICE FOR INTERNATIONAL CARRIAGE BY RAIL, BERNE

In accordance with paragraph 18 of document TRANS/GE.15/AC .1/2 (OCTI/RID/GT-III/378) the secretariat has received the report of the working group submitted by the Government of Belgium.

Report of the Working Group on safety valves

The Working Group on safety valves, which the October 1979 Joint Meeting at Berne decided to establish, met at Brussels from 12-14 May 1980.

The representatives of the following countries participated: Austria; Belgium; France; Germany, Federal Republic of; Hungary; Italy; Netherlands; Poland; Switzerland; United Kingdom.

The following international organizations were also represented: European Council of Chemical Manufacturers' Federations (ECCMF), International Union of Private Railway Truck Owners' Associations.

The Working Group considered the following documents:

The Belgian proposal (TRANS/GE.15/AC.1/R.21 (OCTI/RID/GT-III/343));

Comments by Italy;

Comments and proposals by the United Kingdom.

I. The arguments for and against making the use of safety valves compulsory in land traffic were put forward and considered.

A number of delegations (Belgium, Netherlands, Poland, United Kingdom) thought that the use of safety valves helped to increase the protection of tank wagons used for the transport of non-toxic liquefied gas against risks of fire or overfilling.

Other delegations agreed that such valves might contribute to safety.

However, the majority of delegations thought that the real or supposed advantages offered by the use of safety valves did not outweigh the disadvantages and risks which such valves entailed (risk of opening in tunnels or if the tank wagon overturns, etc.).

The main arguments for and against advanced at the meeting are displayed in tabular form in the annex. This table was not submitted to the Group for approval and is attached merely for reference.

The Netherlands delegation, while agreeing in principle with the use of safety valves, considered that more thorough scientific studies should be made so that a decision could be taken in full knowledge of the facts. Other delegations agreed with that point of view.

Lastly, a majority of delegations present were opposed to any amendment of the ADR and RID regulations which would make the use of such valves compulsory.

However, the Working Group unanimously recommended that the ADR and RID regulations be supplemented by more detailed and stringent regulations governing filling procedures and equipment.

The Working Group considered that it should recommend tighter controls during filling.

II. With regard to the technical aspects, delegations agreed in principle to propose to the Joint Meeting that the present ADR and RID regulations regarding the discharge capacity (section of discharge orifice) of safety valves should be replaced by the formula for the calculation of discharge capacity proposed by the United Kingdom.[1]

Agreement could not, however, be reached on the escape pressure of the valves. It was noted that the escape pressures at present in force, which were from 0.9 to 1.0 times the test pressure, were at variance with current practice in a number of countries (Belgium, Netherlands, United Kingdom) where the escape pressure required for national transport vehicles was closer to the service pressure.

For lack of time, the problems of the use of frangible discs could not be considered. There seemed to be little practical experience with such discs in land traffic.

III. On the question of changing the formula for calculating the capacity of valves, the Working Group considered that provision should be made for transitional measures with a reasonable transition period.

[1] The Italian delegation expressed reservations regarding the application of the formula in the case of multiple-use gas tankers.

Arguments for and against safety valves put forward
by delegations during the meeting of the Working Group

The following table is provided for reference and was not submitted to the group for approval:

For	Against
In case of accidental overfilling the operation of the valves will prevent bursting of the tank through increased pressure due to higher ambient temperature (expansion in liquid phase). Valves will prevent overpressures likely to damage the tank and will increase the time available to safety crews. Safety valves are already compulsory in RID and ADR practice for the transport of cryogenic gases. Safety valves have proved satisfactory and reliable in several countries in which they are regularly used or required by law. In these countries there have been no accidents due to their untimely functioning or failure, and the valves have performed satisfactorily in fires.	The reliability of the valves in liquid phase operation is in doubt (possible freezing of the valve). The presence of the valve gives a sense of false security because it may actually encourage overfilling. The operation of the valve involves a risk of fire, particularly in road and rail tunnels. When transport is by goods train, the valve may cause a chain of fires because of the blowtorch effect of gases escaping under pressure from the tank car. In rail transport, gas escaping from the safety valve may be ignited by overhead lines. A valve is another opening in the shell and thus adds to the risks. There is not enough scientific information to justify taking a final decision. Overfilling could be more effectively dealt with by tighter controls on filling procedures (two independent checks one after the other).

Extract from the report of the Joint Meeting (Berne, 29 September – 10 October 1980) (document OCTI/RID/GT-III/411 – TRANS/GE.15/AC.1/6)

CONSIDERATION OF THE REPORT OF THE WORKING GROUP ON "SAFETY VALVES"

73. For the consideration of this item, the Joint Meeting had before it document TRANS/GE.15/AC.1/R.79-OCTI/RID/GT-III/403. The Joint Meeting confirmed, by a vote, the conclusion reached by the majority of delegations in the working group, namely, that it was opposed to any amendment of the requirements of ADR and RID which would make the use of the valves mandatory.

74. The problem of overfilling and means of avoiding it were then considered. The discussion showed that the problem differs for road and rail, since in rail traffic, under CIM the responsibility is the sender's, whereas in road traffic, the carrier is also involved. More detailed and stricter requirements concerning filling, as proposed by the working group, affected only road transport. The Joint Meeting did not take a final decision on this question and representatives were requested to inform the secretariats of their experience in the matter.

75. The question of valve capacity was also discussed, in particular the calculation formula, which for RID/ADR is different from that of IMCO and the United Nations. The Joint Meeting was in favour of harmonization with IMCO and the United Nations. In view of the complexity of the problem and the lack of scientific data, the Meeting requested the representative of the United Kingdom to provide it with further information for the next session. If necessary, the Joint Meeting might entrust the study of the problem to the Working Group.

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