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**COMMITTEE OF EXPERTS ON THE TRANSPORT
OF DANGEROUS GOODS**

(Twenty-first session,
4-13 December 2000,
agenda item 2(b))

**WORK OF THE SUB-COMMITTEE OF EXPERTS
ON THE TRANSPORT OF DANGEROUS GOODS**

**Draft amendments to the Recommendations
on the Transport of Dangerous Goods**

Model Regulations on the Transport of Dangerous Goods

**Report of the informal working group on new provisions for the transport
of solid substances in bulk containers (Bonn, 5-7 April 2000)**

Transmitted by the Expert from Germany

1. General

An informal working group on new provisions for the transport of solid substances in bulk in freight containers met in Bonn from 5 – 7 April 2000. A list of participants is attached as Annex 1 to this report.

2. Principles and results for transport in bulk

2.1 Substances

- a) The working group came to the conclusion that as a first approach transport in bulk of solid substances including waste should be considered and that articles and empty uncleaned packagings should be treated at a later time.

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- b) The working group took note of the fact that transport in bulk of some solid substances is possible according to the provisions of RID/ADR, the IMDG Code and CFR 49 and considered that the proposal should initially be limited to those substances common to these regulations.

The representative of Germany stated that he would prepare a list of all substances which may be transported according to the above-mentioned provisions *. In addition Germany will prepare a list of the substances that at present are allowed to be transported in bulk under all the provisions, i.e. the provisions of RID/ADR, the IMDG Code and CFR 49**.

- c) Provisions for the transport in bulk of other substances, articles and empty uncleaned packagings will be dealt with at a later time.

2.2 Types of bulk containers

The working group came to the conclusion that three types of bulk container should be considered. A detailed description is contained in Annex 2. The letter B is in square brackets because it is already used in column 9 of the Dangerous Goods List.

2.3 Definitions reflected in sections 1.2.1 and 6.8.2.1 of the German document ***

The working group came to the conclusion that the definitions in the German document *** should be amended. The amended version can be found in Annex 2.

Numbers a) to e) of the German document ST/SG/AC.10/C.3/1999/92 in paragraph 1.2.1 are covered by the definitions (see Annex 2) and number f) has been taken into account in the definition of "bulk containers".

2.4 Requirements for the construction and testing of bulk containers

It was agreed that the provisions of ISO 1496-4 represented the appropriate safety level for bulk containers. However, in view of the fact that ISO 1496-4 containers are not readily available, an upgrading system for ISO 1496-1 or other containers should be established to obtain an equivalent safety level. This upgrading system should avoid additional testing and be based on design requirements for additional equipment.

A means of identifying suitably qualified containers was considered necessary. In view of the test equivalences between the International Convention on Safe Containers, 1972, as amended (CSC) and ISO 1496-1 and the lack of an ISO marking on many containers a CSC approval plate was considered appropriate.

The UIC representative expressed concerns about the possibility of the equivalence of this upgrading system.

* See also ST/SG/AC.10/C.3/2000/29.
** Circulated as informal document INF.3 at the eighteen session of the Sub-Committee.
*** ST/SG/AC.10/C.3/1999/92.

Bulk containers which are specifically designed for bulk transport purposes and which do not meet the definitions of container according to ISO 1496-4, 1496-1 or the CSC should be regulated at a later stage in order to facilitate the discussion at UN level. In the meantime these containment systems should continue to be dealt with by the regulatory bodies through the IMDG Code, RID/ADR, CFR 49 etc. The amended text can be found in Annex 2.

Initial views were expressed on the principles and proposed text for the general design and test requirements to assist Germany on the redrafting of its proposal.

2.5 Overlap with other containment systems (IBCs, LPs etc.)

The group could not agree on the lower volume limit for bulk containers. This is why the minimum volume is put in square brackets. Arguments for a limit of 1 m³ were the existing limit in the freight container definitions (ISO 830) and most of all because such small bulk containers are in use. Arguments for a 3 m³ limit were the necessity of a clear distinction from IBCs and the avoidance of an overlap of requirements.

Agreement could also not be reached on the need for a drop test to address the mechanical impacts of transport and handling.

2.6 Provisions for radioactive material

The representative from the United Kingdom expressed the opinion that the provisions contained in the German proposal could be deleted and instead reference could be made to paragraph 4.1.9.2.3 in the UN Model Regulations. This issue needs to be discussed with class 7 experts.

3. Further procedure

Germany will revise Document ST/SG/AC.10/C.3/1999/92 by including the proposed texts and taking into account the outcome of the discussion in the working group (see ST/SG/AC.10/C.3/2000/29).

The working group recommends to the Committee that proposals concerning bulk containment systems other than those addressed in the revised German document ST/SG/AC.10/C.3/2000/29 be considered for inclusion in the Model Regulations during the next biennium.

4. Consequential amendments

Depending on the actual text developed, consequential amendments will need to be made in particular to paragraphs 5.3.2.1.1 and 5.4.1.1.10 of the Model Regulations.

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Annex 1

List of Participants

Belgium P. Van Lancker

Germany K.-H. Bell
D. Rennoch
K. Wieser
A. Hübner

Netherlands P. Huurdeman

United Kingdom J.M. Hart
A. Bale

Austria W. Stolz

**European Chemical
Industry Council (CEFIC)** R. Neureiter
G. Hummel

**International Union of
Railways (UIC)** W.J. Visser

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Annex 2

1. Types of Bulk Containers:

1. Open top bulk containers including sheeted containers ([B]1).
There are two additional requirements:
SP XXX: These containers are not permitted in sea transport.
SP XXY: These containers are subject to the approval of the regulatory body.
2. Closed bulk containers including ventilated bulk containers ([B]2).
3. Closed bulk containers (hermetically closed) ([B]3).
Note: This container should be subject to an airtightness test.

Bulk containers of [B]1, [B]2 and [B]3 could be referenced to ISO/UIC-standards or to the CSC convention.

Bulk containers which could not be referenced to ISO/UIC-standards or to the CSC convention.

Note: Bulk containment systems which do not meet the definition of a „container“ given in the International Convention for Safe Containers (CSC) or the referenced UIC leaflets or ISO Standards should continue to be dealt with the regulatory bodies.

2. Amended definitions in paras 1.2.1 and 6.8.2.1:

Amended definitions in para 1.2.1

1. **Transport in bulk**
No definition of „transport in bulk“ is needed because this terminology would not be used in the proposal.
2. **Transport in bulk containers**
The term „bulk containers“ is needed because it is used throughout the proposal.
3. **Definition of „Bulk containers“**

Bulk containers are containment systems (including any liner or coating) intended for the transport of solid dangerous substances which are in direct contact with the containment system, other than packagings, intermediate bulk containers (IBC's), large packagings and portable tanks.

Containment systems are:

- of a permanent character and accordingly strong enough to be suitable for repeated use
- specially designed to facilitate the carriage of goods by one or more means of transport without intermediate reloading

- fitted with devices permitting its ready handling, particularly when being transshipped from one means of transport to another
- so designed as to be easy to fill and empty, and
- having a capacity of not less than [X m³].

Examples of bulk containers are freight containers, bulk bins, swap bodies, trough-shaped containers, roller containers, vehicles.

Amended definitions in para 6.8.2.1

1. Definition for “Closed bulk container”

Closed bulk container means a totally enclosed bulk container having a rigid roof, rigid side walls, rigid end walls and a floor. The term includes bulk containers with an opening roof where the roof can be closed for transport;

2. Definition for “Hermetically closed bulk container”

Hermetically closed bulk container means a closed bulk container which is airtight;

3. Definition for “Maximum gross mass”

Maximum gross mass means the mass of the bulk container including its service, structural and operational equipment and the maximum permissible load;

4. Definition for “Open top bulk container”

Open top bulk container means a bulk container with rigid side and end walls and a non-rigid covering;

5. Definition for “Operational equipment”

Operational equipment means items such as bulkheads, liners and sealing members provided to facilitate the functioning of the bulk container;

6. Definition for “Service equipment”

Service equipment means items such as filling and discharge devices, ventilating devices, safety devices and measuring instruments;

7. Definition for “Structural equipment”

Structural equipment means reinforcing, handling, fastening, protective and stabilising members attached to the bulk container;

8. Definition for “Ventilated bulk container”

Ventilated bulk container means a closed bulk container equipped with openings to allow for the exchange of vapours and gases with air and which prevent under normal conditions of transport the release of solid contents as well as the penetration of rain and splash water.
