



Secretariat

Distr.
GENERAL

ST/SG/AC.10/2000/21
18 September 2000

ORIGINAL: ENGLISH

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

(Twenty-first session,
4-13 December 2000,
agenda item 5 (a))

PROGRAMME OF WORK

Programme of work for the 2001/2002 biennium and related proposals

**Evolution of the Model Regulations on the Transport of Dangerous Goods
(Rationalised development of the Regulations)**

Transmitted by the expert from Germany

Introduction

Based upon ST/SC.AC.10/1998/55, submitted by Germany, the Committee of Expert decided at its meeting in December 1998 to add the item "Evolution of the Model Regulations on the Transport of Dangerous Goods" to its work programme for the 1999/2000 biennium (para. 141 of the report ST/SG/AC.10/25).

With this paper, the expert from Germany submits additional and detailed ideas and proposals on this matter for further consideration by the Committee.

Background

With its new structure, the UN Model Regulations have made a big step forward to universally applicable regulations for the transport of dangerous goods by all modes of transport with an effectively increased legal status, which may even be strengthened after its implementation by the modal, regional and national rulesetting bodies.

GE.00-

With this achievement, the responsibility of the Committee of Experts on the Transport of Dangerous Goods has been significantly increased. Any new amendment has now become a direct impact on modal,

regional and national legislation. Regulators will rely more on the Committee than in the past to consider all implications of new amendments in order to restrict the differences between UN Model Regulations and the modal, regional and national regulations to a minimum, which may be required from a restricted viewpoint. Modal regulators are now put under pressure to justify any difference to the UN Model Regulations in order to avoid obstacles for intermodal and international shipments.

To discharge this responsibility, the Committee can rely on the expertise of its members and the organisational capabilities of the secretariat.

However, the needs for a higher quality of the regulatory work by the Committee may require agreed and traceable working perspectives and tools. Already during the reformatting effort it had become obvious, that consistency of some part of the restructured UN Model Regulations could only be achieved by a "rationalised approach". Coding of requirements and a computer-friendly set-up of the regulations are additional tools to facilitate the establishment of consistent amendments.

Nevertheless, the experiences in context with the reformatting effort revealed the lack of sound and clearly identified safety levels to be achieved by the UN Model Regulations. This statement shall not be misunderstood as a lack of the UN Model Regulations to cover public needs for the protection of life, property and nature; the lack is to be seen with conditions and goals in technical terms to be achieved or to be considered for the development and improvement of the regulations.

As an example, the temperature range (or ranges for the different modes of transport) as part of the related transport environment to be considered for the classification of dangerous goods and the design and filling of containment systems can be found in different paragraphs of the regulations, far from being consistent.

The establishment of safety levels in technical terms together with the conditions and impacts may be accomplished by extracting relevant provisions out of the present text, its comparison and abstraction; the establishment of new or more precise terms and definitions may also be needed.

This approach, certainly will, because of the unknown relationship with the potential risk, give no indication, whether an identified safety item is justified.

Similarly, the previously applied method of comparative judgements ("If we allow 200l of a PG II substance in some packaging type, we shall only allow 60l of a PG I substance in the same packaging ...") may also fail to give adequate guidance. In this example, both, 60 and 200l of hazardous material released in an accident may not be acceptable.

Relating safety items with potential risks, therefore, should be considered as a general rule. Some issues such as the classification toxic-by-inhalation issue, may only be dealt with, adequately, in context with the consideration of potential risks. However, agreed methods for the consideration of the potential risk and the safety level to be achieved are missing.

Taking the intermodal aspect of the UN Model Regulations into account, such safety levels should consider typical intermodal and international shipments (transport chains), covering all relevant climatic zones and transport means. (Modal or national regulations may, therefore, claim restricted conditions).

The consideration of potential risks for the establishment of safety regulations has become usual in other technical fields in different forms and extent. In its consequence, quantitative risk analyses are applied.

Proposal

It is proposed to have this item on the work programme for the 2001/2002 biennium and to encourage an investigation programme with the following elements for the evolution of the UN Model Regulations:

- (1) Identification and establishment of the transport conditions and related safety levels as determined by the UN-Model Regulations by:
 - extraction of relevant provisions out of the present text, such as the state of the art for essential parameters for safety related aspects (examples: leakage rates of closures and valves, systematic effects and capabilities of training, typical failure rates of testers...),
 - its comparison and abstraction in technical terms;
- (2) Correlation of determined conditions and levels with real transport environments, considering typical intermodal, international transport chains;
- (3) Determination of risk-based assessment tools for the judgement of dangers and for measures to mitigate or avoid them;
- (4) Valuation of the identified current safety levels with the risk-based assessment tools including:
 - formulation of optimised safety levels to be achieved together with additional or more precise terms and definitions, as necessary;
 - risk-based review of classification rules for all classes (Impact-models, example: Type A quantities in class 7);
 - risk-based review of regulations for possible simplification and removal of unnecessary provisions;
 - specification of conditions for the transport environment for normal conditions and accident conditions of transport of the different modes of transport.
- (5) Preparation of a proposal for adequate amendments to the UN Model Regulations.

Justification

The aim of dangerous goods rules is to separate the permitted risk from the inadmissible one and to design this field of technology in a preventative manner by completely defining and fixing the essential requirements in such a way that all following rules can be derived from free of doubts. Therefore the development of clearly defined and comprehensive safety objectives is necessary, that is that the Model Regulations should be of a conservative nature for their provisions including the related performance level. This would lead to a world-wide application, e.g. as already installed for the UN portable tanks and allow mode-related rules to relieve their provisions if this would be appropriate for that mode.

The role of the Model Regulations has to be strengthened to promote a leaning process with the effect of a sustainable set of universal, modal and regional provisions for the transport of dangerous goods.

Being now formatted user-friendly and as a pattern for the modal regulations, the United Nations may now take actions to rationalise its Model Regulations and to implement tools for its sustainability.

These actions would be justified by possibilities of simplification and removal of provisions with no or very limited impact on safety. For any new proposed amendment, the tools to developed would facilitate its judgement.

The interested and concerned public could be provided with sound reasoning and justification.
