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**COMMITTEE OF EXPERTS ON THE
TRANSPORT OF DANGEROUS GOODS**
Sub-Committee of Experts on the
Transport of Dangerous Goods
(Seventeenth session,
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agenda item 5 (d))

**MISCELLANEOUS DRAFT AMENDMENTS TO THE MODEL REGULATIONS
ON THE TRANSPORT OF DANGEROUS GOODS**

Proposal to amend Chapter 3.4 – Limited quantities

Transmitted by the expert from Australia

Introduction

1. The expert from Australia welcomes the reopening of debate on the subject of limited quantities and listened with interest to the proposals from the expert from the United Kingdom (ST/SG/AC.10/C.3/1999/41), and the observer from AISE (ST/SG/AC.10/C.3/1999/16), seeking to address problems associated with marking of outer packaging of limited quantities. The INF paper from the expert from the United States of America (UN/CETDG/16/INF 8) was also appreciated for clearly showing the different national and intermodal approaches to maximum capacities for inner packagings and the maximum gross masses for outer packagings applicable to limited quantities.
2. The Sub-Committee may be aware that Australia so far has not adopted the provisions of Chapter 3.4 of the UN Model Regulations, and applies the same strict documentation, labelling, package testing and placarding requirements to consignments of small sized packages as for all dangerous goods. It is, however, Australia's intention to adopt Chapter 3.4 once the issues raised in the current debate have been resolved. This strict regulation in Australia of 'limited quantity' package sizes has resulted in strong recognition in the transport chain, emergency services, manufacturing sector and community of the dangerous goods class labels and UN numbering system. The value of the UN hazard communication system is fully recognised in Australia, in all sectors.

3. The expert from Australia is concerned that the original intent of the provisions on limited quantities, being to reduce package testing, labelling documentation and vehicle placarding requirements for very small consignments of dangerous goods such as samples and deliveries from retail establishments to consumers, has been lost. Under the current provisions of Chapter 3.4, large quantities of dangerous goods packaged in relatively small packages can be transported with little or no controls, and with little or no information for the emergency services, the community and the end of the transport chain ie. at the workplace, storage facility, retail outlet or consumer.
4. It has been successfully argued that consignments of 'limited quantities' pose a low level of risk during transport. But insufficient account is being taken of the potentially large quantity of material that may be transported on the one vehicle under limited quantity provisions, and the consequent increase in risk. In addition, it is the view of the expert from Australia, that current data collection methods for the transport sector do not reflect the real extent of leakage of packages which ultimately affect workers in the emergency services, retail and manufacturing sectors on delivery of limited quantity shipments. There is also a risk of mis-consignment of packages to the air mode under existing limited quantity provisions.
5. The expert from Australia believes that it is time to look at the transport of limited quantities from a fresh perspective, placing new emphasis on the importance of hazard communication for the safe transport of dangerous goods. In developing the proposals in this paper, we have considered the lower level of risk associated with the transport of dangerous goods in sizes defined in Chapter 3.2 as limited quantities; the different levels of risk associated with transport at different stages of the transport chain; the right of the community and workers to know what is being transported; the information requirements of people throughout the transport chain and the paramount requirement of the emergency services for quick and ready access to information in the event of an incident involving packaged dangerous goods.

Reviewing the transport chain

6. There is a high probability that large quantities of limited quantity sizes will be transported between the manufacturer and the wholesaler or in some cases the retail warehouse. In this instance, the risk associated with an incident (although relatively low) is real, and in the event of an incident the emergency services need to have complete information about the goods on the transport vehicle. In the view of the expert from Australia, there is a strong argument for vehicle placarding, documentation and outer package marking in this part of the transport chain.
7. In the second major link of the transport chain, between the wholesale or retail warehouse and the retail outlet, the quantity of dangerous goods being transported on a single vehicle is likely to be significantly less, but could still pose some level of risk. The level of risk is dependent on the quantities being transported. If the quantity on a vehicle is high then the risk is similar to the manufacturer to wholesale link described above, with similar requirements for information for the emergency services. If the quantity is low then the risk reduces accordingly, and the associated requirement for information is reduced. In the case where the quantity of dangerous goods being transported is low, the need for availability of information may be restricted to package marking. The criteria for information would therefore appear to be quantity-related.

8. It is assumed that the relative risk between different classes and packing groups for different materials has been considered in the size restrictions imposed in Chapter 3.2, ie. that the risk associated with 500g of PGII material is essentially equivalent to 5 litres of PGIII material.

Issues

9. The issues addressed in this paper are:
 - The need for placarding of vehicles (or transport units) transporting dangerous goods in limited quantities.
 - The need for documentation for dangerous goods being transported as limited quantities.
 - The need for marking of outer packaging of dangerous goods in limited quantities.

Placarding of vehicles

10. During the 16th meeting of the Sub-Committee it was noted that some experts and observers suggested that placarding of vehicles carrying limited quantities should be required.
11. Australian regulations currently require all vehicles carrying 1000L/kg of dangerous goods to be placarded to provide emergency services with sufficient information to respond to incidents. The major exception to this regulation is for the transport of 'consumer commodities' being transported as part of a load between a wholesale storage facility and a retail outlet. In this instance placarding is not required unless the dangerous goods exceed 2000L/kg. 'Consumer Commodities' in the Australian context equate closely with the UN Model Regulations concept of 'limited quantities'. In the last four years there has been little evidence of any increased hazard or risk to the emergency services or the community during transport of 'Consumer Commodities'.
12. Therefore it is recommended that all transport units transporting dangerous goods in limited quantities be placarded when the total quantity of the dangerous goods on the vehicle is equal to or exceeds 2000L/kg. It is recommended that the Class diamond be used as the placard. No special indicator of limited quantities is recommended.

Documentation

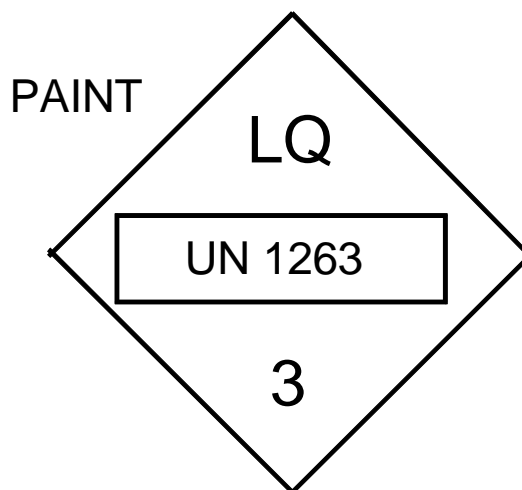
13. Documentation provides emergency services with information for identifying hazards when dealing with traffic accidents involving dangerous goods or other incidents. However, when the quantity of dangerous goods in limited quantities is such that little or no risk exists, ie below the proposed placard level, there should be no requirement for a dangerous goods transport document. (Australia has been moving goods in this way for some considerable time and has a satisfactory safety record to justify continuing.)
14. It is therefore recommended that for land surface modes of transport, a dangerous goods transport document is only required for the transport of limited quantities when a vehicle placard is required ie. when the load is 2000L/kg or more. The transport document should include a statement that the materials being transported are in limited quantities. For other modes, ICAO and IMO specify documentation requirements.

Marking of outer packaging

15. Marking of outer packagings of limited quantities is considered essential for the emergency services, particularly when loads of limited quantities are being transported in amounts less than those requiring vehicle placarding or documentation. In the case of air transport, the package marking may be the only indication that the material contained in the packaging consists of dangerous goods. For example, where a consignment of dangerous goods in limited quantities is less than 2000L/kg and is transferred from a surface mode to the air mode, package marking would be the only indicator to the air mode that dangerous goods are included in the consignment.
16. The expert from Australia wishes to propose a marking for the outer packaging of limited quantities. There are a number of elements that have been considered as essential and have been included in the recommended design of the 'LQ' symbol' for the marking of outer packaging for limited quantities (see below). These include:
- the UN Number(s),
 - the proper shipping name(s),
 - the diamond, and
 - the limited quantities indicator 'LQ'.

The recommended design incorporates most of the features currently included in various national requirements and the universally recognised diamond for dangerous goods. The recommended symbol also recognises industry's need to minimise cost and therefore has no requirement for multiple colours in the marking. An example of the symbol known as the 'LQ' Symbol is as follows:

Example of 'LQ' Symbol



The proper shipping name may be located anywhere near the diamond and need not be located as shown in the example.

Accumulation of loads of limited quantities

17. The expert from Australia recognises that accumulation of loads of limited quantities of dangerous goods each less than 2000L/kg will occur. The expert from Australia believes that there is no significant risk to public safety from not providing special dangerous goods transport documentation in this case. In this case, some form of consignment documentation would be provided but this would not be a special dangerous goods transport document. All the packages would be marked with the limited quantities symbol. It would appear self-evident that a driver would be aware that the load was then in excess of the 'LQ' threshold, and would be aware of the Class(s) of dangerous goods on the vehicle. Therefore, whilst vehicle placarding is recommended, dangerous goods transport documentation is not required for accumulated loads of limited quantities.
18. Vehicle placarding. In the case of accumulated loads of Limited Quantities, as the vehicle driver is the only person with the knowledge of the accumulated load, the responsibility for placarding the vehicle would rest with the driver, as is the case for normal loads of dangerous goods that are not in limited quantities.
19. Transport document. In the case of accumulated loads of Limited Quantities, no single dangerous goods transport document will exist, and although the driver will be aware of the classes of dangerous goods on board the vehicle, it would be unreasonable to expect the driver to create a dangerous goods transport document. The expert from Australia believes that, since the provision of a single dangerous goods transport document is not practical in this case, the vehicle placarding and labelling of the packagings would provide sufficient information for hazard communication.

Discrepancies between national and intermodal levels for limited quantities.

20. It is also suggested that in the interests of international harmonisation a working party be established to review the differences between UN and IMDG as highlighted by the expert from the United States of America in UN/CETDG/16/INF 8 (United States of America), taking account of the provisions in ADR/RID and national provisions.

Proposals

Chapter 3.4

Amend 3.4.6 to read:

- "3.4.6. Inner packagings of dangerous goods transported according to this chapter need not be labelled. Outer packagings must be labelled with the 'LQ' symbol, and include the proper shipping name, Class and any subsidiary risk if any, the UN Number and the letters 'LQ'. The label must be in a contrasting colour to the outer packaging material. If more than one dangerous good is contained in the single outer packaging, the label may represent the material with the largest volume / mass."

Amend 3.4.7 to read:

"3.4.7. For land transport documentation is not required for any load of dangerous goods of limited quantities of less than 2000L / kg gross, or for any accumulation of loads of dangerous goods in limited quantities each of which is less than 2000L/kg gross. In addition to the provisions of 5.4.1.1, the words "limited quantities"; "LTD QTY" or "LQ" shall be included with the description of the consignment (see 5.4.1.1.8)."

Delete current 3.4.8.

Add a new 3.4.8:

"3.4.8 Transport units must be placarded for any load of dangerous goods of limited quantities of 2000L/kg gross or more, including accumulations of loads, each of which is less than 2000L/kg gross."

Consequential changes

Transport unit placarding

Amend 5.3.1.1.2 (a):

"5.3.1.1.2 (a) Placards are not required on transport units carrying any quantity of explosives of Division 1.4, Compatibility Group S, Dangerous goods packed in limited quantities not exceeding 2000L/kg gross, or excepted packages of radioactive material (Class 7); and"

Package labelling

Amend 5.1.4:

"5.1.4 Mixed packing

When two or more dangerous goods are packed in the same outer packaging, the package shall be labelled and marked as required for each substance, except as provided for by 3.4.6 for Limited Quantities."

Amend 5.2.2.2.2 Specimen Labels to include the 'LQ' Symbol.

Shipping Documentation

Amend 5.4.1.1.8:

"5.4.1.1.8 When dangerous goods are transported according to the exceptions for dangerous goods packed in limited quantities provided for in Column 7 of the Dangerous Goods List and Chapter 3.4, the words "limited quantities"; "LTD QTY" or "LQ" shall be included with the description of the consignment."
