United Nations ST/SG/AC.10/C.3/2011/37

Secretariat

Distr.: General
6 September 2011

Original: English

**Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals**

**Sub-Committee of Experts on the Transport of Dangerous Goods**

**Fortieth session**
Geneva, 28 November – 7 December 2011
Item 4 (b) of the provisional agenda
**Miscellaneous proposals of amendments to the Model Regulations on the Transport of Dangerous Goods: portable tanks**

# Transitional periods for UN portable tanks intended for the transport of liquids

**Transmitted by the expert from the United Kingdom**[1]

## Introduction

1. At the thirty-eighth session of the Sub-Committee in December 2010, the expert from the United Kingdom presented Informal document INF.28. That information paper drew attention to the substantial cost implications potentially amounting to the equivalent of tens of millions of US Dollars for industry when the portable tank provision (T-code) is reassigned frequently. A case study was presented showing the effects on one particular manufacturer of the substance Dimethyl Sulphate, UN 1595 where the T-code for this substance was changed three times in three biennia. The paper pointed out that there are more than 30 entries in the Dangerous Goods List where this has happened.

2. The Sub-Committee agreed that this issue and the transitional arrangements for UN portable tanks could be discussed during the new biennium. Whilst much of the United Kingdom paper pointed out the cost implications to industry of numerous changes, the United Kingdom was asked that consequences for safety should be taken into account. The expert from the United Kingdom considers that the consequences for the protection of the environment should also be taken into account. At the thirty-ninth session the expert from

[1] In accordance with the programme of work of the Sub-Committee for 2011-2012 approved by the Committee at its fifth session (refer to ST/SG/AC.10/C.3/76, para. 116 and ST/SG/AC.10/38, para. 16).

the United Kingdom produced informal document INF 15 which informed the Sub-Committee that the United Kingdom fully intended to pursue this area of work during the current biennium but would not be able to produce a working paper until December. This working paper now seeks to set out the issues involved and proposes possible ways forward.

## The issues

3. Essentially the expert from the United Kingdom wishes to make four points:

- Unless there is an essential safety need, changes should not be made to the current assignment of tank codes to particular liquid substances;
- Guiding principles should be established to determine what circumstances and consideration should be given such that tank code assignments might be changed;
- A rationalized approach should be adopted in assigning any transitional period when tank code assignment changes are made;
- The transitional periods recently assigned to UN numbers shown in the Annex to this paper should be reviewed in the light of the adoption of a rationalized approach.

4. The United Kingdom has already noted in its previous papers that of all the containment systems for which recommendations are included in the Model Regulations for their design, construction, inspection, testing and use, the containment systems covered by Chapters 4.2 and 6.7 are likely to be the most costly. They also have a long service life expectancy, typically 25 years or more. The initial capital cost of a portable tank is high and the economic costs to operators of changing from one portable tank code to another have been set out in the previous papers. The impact of changing T-codes on many sectors of industry is particularly high if a change from bottom outlet tanks to top outlet tanks or a change in the minimum shell thickness calculation is required, particularly if the dangerous goods have a high liquid density (i.e. more than 1.0.). This is because the tank inevitably becomes a dedicated tank whereby the return journey is empty of product. This also increases the number of journeys necessary, increasing CO2 emissions.

5. By way of example, the requirement for portable tanks for UN 1595 to have a minimum test pressure of 4 bar has been the norm in international transport for at least 35 years and possibly for 45 years. The requirement to change to a 6 bar minimum test pressure portable tank only came about when the transitional period established by the IMO (see INF 28) expired on 31.12.09. The expert from the United Kingdom considers that there are no records to show that portable tanks with a test pressure of 4 bar have caused any problems with regard to safety or release into the environment due to this lower test pressure requirement.

6. It is difficult to establish any accident data related to the construction of a portable tank that would suggest the need for a higher specification tank design over the last few decades for other substances. Indeed, many of the changes to tank code assignments have resulted from the adoption of a rationalized approach for tank code allocation rather than as a response to an identifiable safety need. In addition to the commercial costs to operators, the environmental costs of scrapping and replacing portable tanks as a result of a change in T-code allocation must also be taken into consideration as should the increased potential for environmental pollution associated with the need to discharge and clean portable tanks to suit the product to be carried. By utilizing easily the most ubiquitous tank - the T11 portable tank – rather than a dedicated tank for most substances, such environmental issues can be minimized.

7. It follows, therefore, that if a real need to amend the assignment of a tank code can be demonstrated, a realistic transitional period should be permitted for the change to be brought into effect unless there is an over-riding safety issue to be addressed. The expert from the United Kingdom therefore proposes below, guidelines to be included in the Guiding Principles document to aid consideration of future tank code re-assignments.

## Proposed text for the Guiding Principles at Part 4.3 C

8. Insert the following text after section B and renumber existing sections C and D accordingly:

## "C. Guidance on changing the assignment of one tank code to another for particular substances

9. It should not be necessary to change an existing portable tank code assignment to a particular substance or group of substances unless:

- A proven catastrophic failure of a portable tank has occurred related to the construction of the tank thus requiring an upgrading of the portable tank code assignment;
- A demonstrable positive cost benefit case indicates an improvement for safety, environmental protection or operational reasons;
- Amendment is made to the guidance on tank code assignment in section 4.3 B of these Guiding Principles.

10. Where a change of tank code is considered necessary having regard to the principles set out above, consideration should be given to the following points:

- Whether the increase means a change of portable tank from bottom outlets to no openings below the level of the liquid (top discharge portable tanks);
- Whether the liquid density of the liquid(s) concerned at $15^{o}$C is higher than 1.0;
- The impact on consignors and consignees in having to modify filling plant to accept top discharge portable tanks in terms of the required capital expenditure and the time needed to modify the filling plant;
- The reduced possibility for owners and operators to fill the portable tanks on both the outbound and return journey when the T-code is changed from bottom outlet to top discharge portable tanks including the complications which ensue for cleaning the portable tanks. (Such portable tanks may, de facto, have to become dedicated to the transport of just one substance).
- The availability of suitable metallic materials of the correct equivalent shell thickness where a change in minimum shell thickness is required by an increase in the T-code.

11. Where it is deemed necessary to re-assign a substance to a higher specification portable tank code, a transitional period of [15 years] [10 years] for continued use of the existing portable tanks shall be specified.

## Review of TP35, TP37, TP38 and TP39

12. Depending on the outcome of the discussions, the expert from the United Kingdom requests the Subcommittee to consider extending the recently adopted portable tank special provisions TP35, TP37, TP38 *(Note: not properly indented in 17th revised edition)* and TP39 from the currently recommended transitional periods of 7 years to a period of [15 years] [10 years] from adoption. In the view of the expert from the United Kingdom an increase of this magnitude from the existing transitional provisions allows industry to manage the change of tank code in a safe, environmentally sustainable and economically viable way.

13. Proposal:

- Amend TP35 by replacing '31 December 2014' with '31 December 20xx';
- Amend TP37 by replacing '31 December 2016' with '31 December 20yy' and by replacing '31 December 2018' with '31 December 20zz';
- Amend TP38 by replacing '31 December 2018' with '31 December 20xx';
- Amend TP39 by replacing '31 December 2018' with '31 December 20zz'.

# Annex

## List of UN Numbers assigned Tank Provisions TP35, TP37, TP38 or TP39 (All entries are PGI)

**TP 35:** UN Nos. 1092, 1098, 1143, 1163, 1238, 1239, 1244, 1595, 1695, 1752, 1809, 2334, 2337, 2646, and 3023.

**TP37:** UN Nos. 1135, 1182, 1251, 1541, 1580, 1605, 1670, 1810, 1834, 1838, 1892, 2232, 2382, 2474, 2477, 2481, 2482 to 2488, 2521, 2605, 2606, 2644, 2668, 3079, and 3246.

**TP38:** UN No. 3148.

**TP39:** UN No. 2381.