

**Secretariat**

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**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****Fifty-seventh session**

Geneva, 29 June-8 July 2020

Item 3 of the provisional agenda

Listing, classification and packing**Proposal to amend Special Provision XXX as adopted at the
fifty-sixth session based on informal document INF.53****Transmitted by the expert from the United Kingdom of Great Britain
and Northern Ireland*****Introduction**

1. At the fifty-sixth meeting of the Sub-Committee, the expert from Germany introduced paper ST/SG/AC.10/2019/42 on the transport of transformers with gas cylinders. Since this involved articles containing dangerous goods of class 2, an entry that had been developed by the experts from the United Kingdom, in a way that was not fully in line with our intentions presented in informal document INF.42. One of the arguments made by the expert from Germany during the debate was for flexibility in the interpretation of 'articles containing' as the articles in this instance did not contain the gas. Despite intervention by the United Kingdom INF.53 was adopted. However, the Chair of the Sub-Committee, possibly recognising that delegates had not had time to consult their industries, reminded the session that any delegation may bring further proposals or amendments to future sessions.

Summary of findings from our research

2. On return home the United Kingdom undertook some research into the transport of transformers with attached gas bottles. The summary of findings was as follows:

- (a) Some transformers have higher gas pressures than the 35 kPa in the adopted text;
- (b) Most transformers are shipped with dry air as the gas (possibly 95 %);
- (c) There is the potential to use other gases not listed in the special provision;

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- (d) The purpose of the gas is to ensure that no moisture can penetrate into the transformer;
- (e) By design transformers are liquid tight but not gas tight, so the gas will leak away over time;
- (f) Some transformers will be transported full of oil with a gas blanket, others will be transported without oil. In both cases the gas performs the same function;
- (g) The gas bottles are used to top up the gas in the transformer so there is no continuous flow from the bottle to the transformer;
- (h) Transformers can vary in size from around 2 tonnes to 30 to 40 tonnes and occasionally up much larger (biggest that we have found is 192 tonnes);
- (i) Transformers are designed to operate in the open so are not normally packed;
- (j) Transformers have been transported like this for well over 30 years;
- (k) There are no recorded instances of issues in transport from venting nitrogen;
- (l) One manufacturer is shipping a transformer every 2 to 3 days.

Analysis of new Special Provision XXX adopted

3. As noted above, the expert from Germany was looking for flexibility of interpretation to allow the new special provision to be adopted. However, the special provision does not display the same flexibility. Clause (a) of new special provision XXX lists three specific gases but, as noted above, other gases may be used. Clause (b) sets the pressure at an arbitrary 35 kPa, because that was the pressure in the example that was used in the proposal. Clause (c) is unnecessary, as the cost to the manufacturer to fix a transformer due to an errant gas bottle or hose damage would be so high, that they already ensure that it will not occur. Clause (d) does not consider the size of many of the afore mentioned concerns or current industry practice. Clause (f) is contradictory because if the cargo transport unit is well ventilated then there cannot be a risk of asphyxiation. Such a risk is only present where there is no ventilation. Even with no ventilation, two fully discharged nitrogen cylinders in a 20 feet container will not produce an asphyxiant atmosphere.

4. Finally, there is the potential for this requirement to increase shipping costs substantially and restrict availability of service. A 20 tonne transformer that was previously shipped as general cargo is now going to be 20 tonnes of dangerous goods. Not all carriers are prepared to handle dangerous goods and those that do usually have a premium.

Proposals

5. It is the view of the United Kingdom that new special provision XXX introduced unnecessary interference into an area that has successfully operated without incident for many years. However, the United Kingdom recognises that the expert from Germany had identified a potential issue.

Proposal 1

In new special provision XXX delete the adopted text and replace with:

“Large and robust articles with attached gas cylinders supplying the gas during transport for conditioning purposes are not subject to these provisions unless they are transported in closed containers.

Closed transport units without ventilation shall be marked in accordance with 5.5.3.6.”

6. If the Sub-Committee are not prepared to accept this proposal, an alternative text is proposed as follows:

Proposal 2

In new special provision XXX replace the adopted text by:

“Large and robust articles up to 3 tonnes with attached gas cylinders supplying the gas during transport for conditioning purposes may be transported subject to the following conditions:

- (a) Only gases of division 2.2 are used;
- (b) The contained pressure in the article does not exceed 0.2 bar (200 kPa);
- (c) Where carriage is in unventilated closed containers and asphyxiant gas is used the container shall be marked in accordance with 5.5.3.6.”

7. An information document will be provided with some pictures of transformers to help delegates appreciate what we are dealing with.
