



**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****Forty-first session**

Geneva, 25 June – 4 July 2012

Item 5 (c) of the provisional agenda

Miscellaneous proposals of amendments to the**Model Regulations on the Transport of Dangerous goods: marking and labelling****Proposals for amendments to the descriptions of labels,
placards, symbols, markings and marks****Transmitted by the expert from the United Kingdom¹****Background and discussion**

1. The expert from the United Kingdom presents revised proposals for the standardisation of marks/labels/placards based on the discussions of ST/SG/AC.10/C.3/2011/5 and ST/SG/AC.10/C.3/2011/32 at the 39th and 40th sessions of the Sub-Committee. A number of the comments received have been incorporated into this paper.

2. In addition, this paper incorporates proposals to editorially amend the fumigation warning mark and coolant/conditioning unit warning mark previously presented in paper ST/SG/AC.10/C.3/2011/31. The minimum overall dimensions will remain too small to allow the necessary lettering. As discussed at the meeting, this should not cause practical problems because users can make the marks larger than the minimum size. However, once it is known what minimum size is used by industry, the minimum overall sizes should be enlarged for the sake of having logically consistent provisions.

3. During the 40th session, there was a discussion about specifying a reduction in the size of certain labels to allow for print bleeds. The expert from Belgium noted that certain

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).

labels such as Division 4.1 labels already had printing to the edge of a label without complaint. The label industry was invited to submit further information on the printing requirements for labels. In the absence of such comments at the time of writing, the reduction in size of certain markings is not included in this paper.

4. Some experts expressed the wish to have specified design tolerances for labels. The expert from the United Kingdom is reluctant to do so as this would blur what is meant by a minimum size. As argued before, stating minimum dimensions allows an unlimited tolerance for larger than required markings. Allowing a tolerance on the minimum size is merely stating a minimum size in a more complex way. To illustrate this point, allowing a minimum size of 100 mm with a 1% tolerance is simply a more complex way of stating an absolute minimum size of 99 mm. Adding tolerances defeats the objective of clarifying what is required from industry. Given that the most widely used markings are produced by professional graphic designers and that a long transitional period is envisaged, this ought not to be an onerous requirement.

5. The concern has also been expressed that adding text “all features shall be in proportion to those shown” might attract inappropriate enforcement action relating to the exact proportions of certain features of markings (such as flames, trees or fish). Amending this to include the term “approximate” might introduce vagueness to exactly specified features such as overall size. The United Kingdom therefore proposes to avoid this problem by stating “where dimensions are not specified, all features shall be in approximate proportion to those shown”. The word “approximate” should be translatable without a loss of meaning or nuance. Please note that this does not apply to proposal 4 (orientation arrows) where no dimensions are specified; this proposed text remains unchanged. In proposal 7 for placards, this text is contained in the referenced paragraph 5.2.2.2.1.1 for labels.

6. A proposal to add specifications for the mark in P904 is included. This follows the same model as proposed for P650.

7. Where diagrams are referred to in the body of the proposed text, they are referred to by figure numbers in all cases rather than stating “below”.

8. In this paper, the text is shown as proposed without strikethroughs or underlining to show where the existing text is amended. This is to aid clarity where many small editorial changes have been made. Full explanations of all the editorial amendments can be found in the previous papers on this subject.

Proposal 1: Limited quantity marking

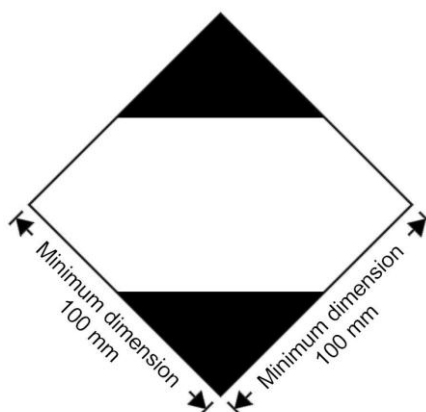
9. The United Kingdom proposes a revised version of the amended description for the Limited Quantity marking. The size is now defined as a minimum of 100 mm x 100 mm (50 mm x 50 mm for reduced size markings) and the figure number is referenced in the text.

10. Amend sections 3.4.7 and 3.4.8 and insert new paragraphs 3.4.7.1, 3.4.7.2, 3.4.8.1 and 3.4.8.2 as follows:

“3.4.7 Marking for packages containing limited quantities

3.4.7.1 Except for air transport, packages containing dangerous goods in limited quantities shall bear the marking shown in Figure 3.4.1:

Figure 3.4.1



Marking for packages containing limited quantities

The marking shall be readily visible, legible and able to withstand open weather exposure without a substantial reduction in effectiveness.

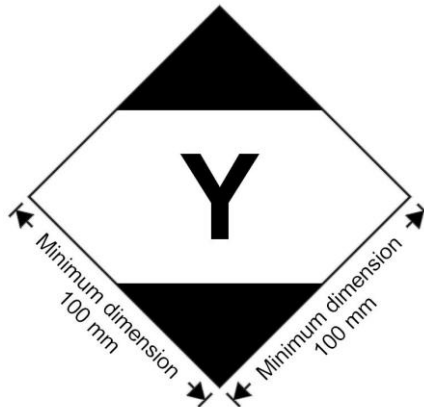
The marking shall be in the form of a square set at an angle of 45 degrees (diamond-shaped). The top and bottom portions and the surrounding line shall be black. The centre area shall be white or a suitable contrasting background. The minimum dimensions shall be 100 mm x 100 mm and the minimum width of line forming the diamond shall be 2 mm. Where dimensions are not specified, all features shall be in approximate proportion to those shown.

3.4.7.2 If the size of the package so requires, the minimum outer dimensions shown in Figure 3.4.1 may be reduced to be not less than 50 mm x 50 mm provided the marking remains clearly visible. The minimum width of the line forming the diamond may be reduced to a minimum of 1 mm.

3.4.8 Marking for packages containing limited quantities conforming to Part 3, Chapter 4 of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air.

3.4.8.1 Packages containing dangerous goods packed in conformity with the provisions of Part 3, Chapter 4 of the ICAO Technical Instructions for the Transport of Dangerous Goods may bear the marking shown in Figure 3.4.2 to certify conformity with these provisions:

Figure 3.4.2



Marking for packages containing limited quantities conforming to Part 3, Chapter 4 of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air

The marking shall be readily visible, legible and able to withstand open weather exposure without a substantial reduction in effectiveness.

The marking shall be in the form of a square set at an angle of 45 degrees (diamond-shaped). The top and bottom portions and the surrounding line shall be black. The centre area shall be white or a suitable contrasting background. The minimum dimensions shall be 100 mm x 100 mm and the minimum width of line forming the diamond shall be 2 mm. The symbol "Y" shall be placed in the centre of the mark and shall be clearly visible. Where dimensions are not specified, all features shall be in approximate proportion to those shown.

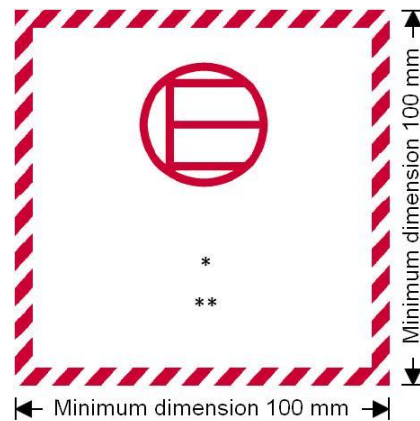
3.4.8.2 If the size of the package so requires, the minimum outer dimensions shown in Figure 3.4.2 may be reduced to be not less than 50 mm x 50 mm provided the marking remains clearly visible. The minimum width of the line forming the diamond may be reduced to a minimum of 1 mm. The symbol "Y" shall remain in approximate proportion to that shown in Figure 3.4.2."

Proposal 2: Excepted quantity mark

11. No changes to the text of 3.5.4.3 are proposed, but the paragraph is repositioned below Figure 3.5.1. Please note that the text in 3.5.4.1 is retained without amendment.

12. Amend 3.5.4.2 and 3.5.4.3 to read as follows:

"3.5.4.2

Figure 3.5.1**Excepted quantities mark**

- * The Class or, when assigned, the Division number(s) shall be shown in this location.
- ** The name of the consignor or of the consignee shall be shown in this location if not shown elsewhere on the package.

The marking shall be in the form of a square. The hatching and symbol shall be of the same colour, black or red, on white or suitable contrasting background. The minimum dimensions shall be 100 mm x 100 mm. Where dimensions are not specified, all features shall be in approximate proportion to those shown.

3.5.4.3 An overpack containing dangerous goods in excepted quantities shall display the markings required by 3.5.4.1, unless such markings on packages within the overpack are clearly visible.”

Proposal 3: Environmentally hazardous substance mark

13. Delete the existing paragraph 5.2.1.6.3 and Figure 5.2.2 and replace with a new paragraph 5.2.1.6.3 and Figure 5.2.2 as follows:

“5.2.1.6.3 The environmentally hazardous substance mark shall be as shown in Figure 5.2.2.

Figure 5.2.2



Environmentally hazardous substance mark

The marking shall be in the form of a square set at an angle of 45 degrees (diamond-shaped). The symbol (fish and tree) shall be black on white or suitable contrasting background. The minimum dimensions shall be 100 mm x 100 mm and the minimum width of line forming the diamond shall be 2 mm. If the size of the package so requires, the dimensions/line thickness may be reduced, provided the marking remains clearly visible. Where dimensions are not specified, all features shall be in approximate proportion to those shown.

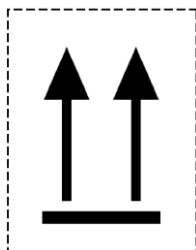
NOTE: *The labelling provisions of 5.2.2 apply in addition to any requirement for packages to bear the environmentally hazardous substance mark.*

14. Add a new paragraph 5.3.2.3.2 as follows:

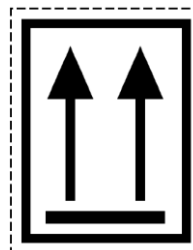
“5.3.2.3.2 The environmentally hazardous substance mark for cargo transport units shall be as described in 5.2.1.6.3 and Figure 5.2.2, except that the minimum dimensions shall be 250 mm x 250 mm. The minimum width of line forming the diamond shall be 5 mm.”

Proposal 4: Orientation arrows

15. The orientation arrows in paragraph 5.2.1.7.1 have no specified dimensions. This proposal does not intend to add any, other than to ensure that the arrows remain in proportion. Also, it is proposed to add a figure number to the diagrams for editorial neatness, with a view to Proposal 5 which proposes to add a new Figure 5.2.5.

“Figure 5.2.3

or

Figure 5.2.4

Two black or red arrows on white or suitable contrasting background.

The rectangular border is optional

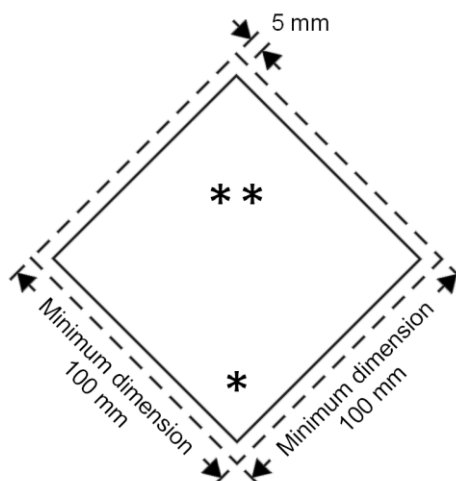
All features shall be in proportion to those shown.”

Proposal 5: Class/division labels

16. This proposal specifies that the measurement from the edge of the label to the line inside the edge be measured to the outside of that line. The expert from the United Kingdom notes that is the current measurement used on label samples that have been examined, but is open to altering this part of the proposal if preferred. Please note that 5.2.2.2.1, 5.2.2.2.1.2 to 5.2.2.2.1.7 and 5.2.2.2.2 remains unaltered.

17. Delete the existing 5.2.2.2.1.1 and replace with a new sub-paragraph 5.2.2.2.1.1, Figure 5.2.5 and insert a new paragraph 5.2.2.2.1.8 as follows:

“5.2.2.2.1.1 Labels shall be configured as shown in Figure 5.2.5. Labels shall be displayed on a background of contrasting colour, or shall have either a dotted or solid outer boundary line.

Figure 5.2.5

Class/division label

* Class or division number shall be shown in this location in the bottom corner.

** The class or division symbol/numeral/text shall be shown in this location.

5.2.2.2.1.8 If the size of the package so requires the dimensions may be reduced, provided the marking remains clearly visible. The line inside the edge shall remain

5 mm to the edge of the label. The minimum width of the line inside the edge shall remain 2 mm. Dimensions for cylinders shall comply with 5.2.2.2.1.2.

The label shall be in the form of a square set at an angle of 45 degrees (diamond-shaped). The minimum dimensions shall be 100 mm x 100 mm and the minimum width of the line inside the edge forming the diamond shall be 2 mm. The line inside the edge shall be parallel and 5 mm from the outside of that line to the edge of the label. The line inside the edge on the upper half of the label shall be the same colour as the symbol and the line inside the edge on the lower half of the label shall be the same colour as the class or division number in the bottom corner. Where dimensions are not specified, all features shall be in approximate proportion to those shown.”

Class/division placards (not Class 7)

18. Both these alternative proposals have been revised in a similar way to proposal 5 to make the outer edge of the inner line the point of measurement. Likewise, the UK is open to amending this part of the proposal if this is the will of the UN Sub-Committee.

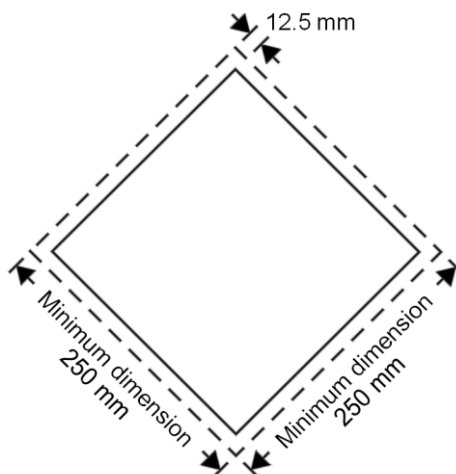
Proposal 6

19. The description follows that proposed for class/division labels as closely as possible. To avoid altering the logical structure of the provisions, some references to labels remain in the descriptive text. The diagram is marked “Figure 5.3.0” to avoid complex consequential amendments.

20. Delete the existing paragraph 5.3.1.2.1 and replace with a new paragraph 5.3.1.2.1 as follows:

“5.3.1.2.1 Except as provided in 5.3.1.2.2 for the Class 7 placard, a placard shall be configured as shown in Figure 5.3.0.

Figure 5.3.0



Placard (except for class 7)

The placard shall be in the form of a square set at an angle of 45 degrees (diamond-shaped). The minimum dimensions shall be 250 mm x 250 mm (to the edge of the placard) and the minimum width of the line inside the edge forming the diamond

shall be 5 mm. The line inside the edge shall be parallel and 12.5 mm from the outside of that line to the edge of the placard. The symbol and line inside the edge shall correspond in colour to the label for the class or division of the dangerous goods in question. The class or division symbol/numeral shall be positioned and sized in proportion to those prescribed in 5.2.2.2 for the corresponding class or division of the dangerous goods in question. The placard shall display the number of the class or division (and for goods in Class 1, the compatibility group letter) of the dangerous goods in question in the manner prescribed in 5.2.2.2 for the corresponding label, in digits not less than 25 mm high. Where dimensions are not specified, all features shall be in approximate proportion to those shown."

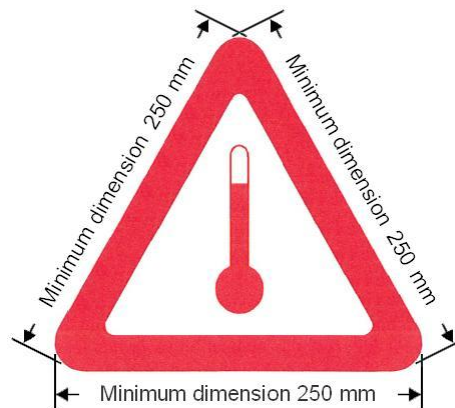
Proposal 7

21. Delete paragraph 5.3.1.2.1 and replace with a new paragraph 5.3.1.2.1 as follows:
 "5.3.1.2.1 Except as provided in 5.3.1.2.2 for the Class 7 placard, a placard shall follow the provisions of paragraphs 5.2.2.2.1 and 5.2.2.2.2 for the label of the class or division of the dangerous goods in question except:
 - (a) The minimum dimensions shall be 250 mm x 250 mm (to the edge of the placard) and the minimum width of the line inside the edge forming the diamond shall be 5 mm. The line inside the edge shall be parallel and 12.5 mm from the outside of that line to the edge of the placard.
 - (b) The class or division number (and for goods in Class 1, the compatibility group letter) of the dangerous goods in question shall have digits not less than 25 mm high."
22. As a consequential amendment, the final sentence of 5.3.1.1.2 could be deleted as this duplicates text for labels in 5.2.2.2.1 which is referenced for placards in 5.3.1.2.1.

Proposal 8: Elevated temperature substance mark

23. In 5.3.2.2, amend the text and to read as follows:
"5.3.2.2 *Elevated temperature substances*
 Cargo transport units containing a substance that is transported or offered for transport in a liquid state at a temperature equal to or exceeding 100 °C, in a solid state at a temperature equal to or exceeding 240 °C shall bear on each side and on each end the mark shown in Figure 5.3.4.

Figure 5.3.4



Mark for carriage at elevated temperature

The marking shall be an equilateral triangle. The colour of the mark shall be red. The minimum dimension of the sides shall be 250 mm. Where dimensions are not specified, all features shall be in approximate proportion to those shown."

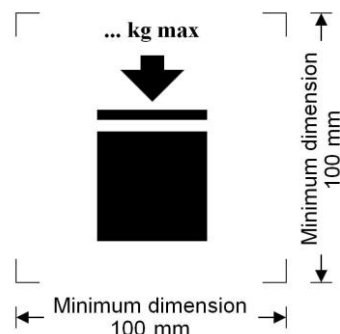
Proposal 9: IBC and large packaging stacking load symbols

24. The proposal for stacking load symbols is clarified to make clear that the area within the printer's marks should be square. This would ensure that the symbols remain in proportion. For situations where the printer's marks are not printed on to an IBC or large packaging, the requirement for the symbol to be in proportion to 100 mm as shown in the example diagram gives an indication of the minimum required size. From a practical point of view, printers have the discretion to increase the size used to ensure the marking is large enough when printing the symbols without a printer's mark. The United Kingdom is reluctant to specify the dimensions of the symbols themselves due to the complexity involved in doing so. This would also change recently adopted approach from the 17th revised edition of the Model Regulations.

25. Amend 6.5.2.2.2 to read as follows:

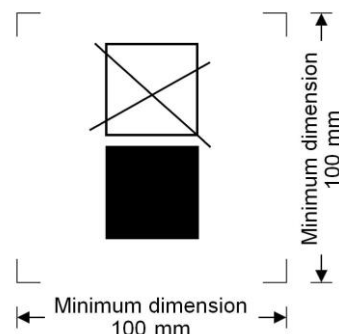
"6.5.2.2.2 The maximum permitted stacking load applicable when the IBC is in use shall be displayed on a symbol as shown in Figure 6.5.1 or Figure 6.5.2. The symbol shall be durable and clearly visible.

Figure 6.5.1



IBCs capable of being stacked

Figure 6.5.2



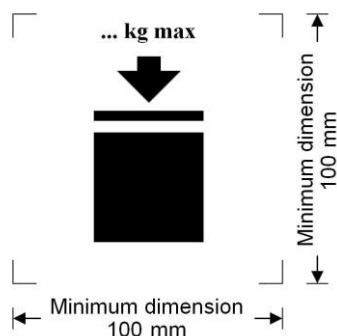
IBCs NOT capable of being stacked

The minimum dimensions shall be 100 mm x 100 mm. The letters and numbers indicating the mass shall be at least 12 mm high. The area within the printer's marks indicated by the dimensional arrows shall be square. Where dimensions are not specified, all features shall be in approximate proportion to those shown."

26. Amend 6.6.3.3 to read as follows:

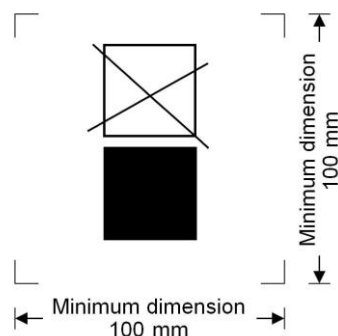
"6.6.3.3 The maximum permitted stacking load applicable when the large packaging is in use shall be displayed on a symbol as shown in Figure 6.6.1 or Figure 6.6.2. The symbol shall be durable and clearly visible.

Figure 6.6.1



Large packagings capable of being stacked

Figure 6.6.2



Large packagings NOT capable of being stacked

The minimum dimensions shall be 100 mm x 100 mm. The letters and numbers indicating the mass shall be at least 12 mm high. The area within the printer's marks indicated by the dimensional arrows shall be square. Where dimensions are not specified, all features shall be in approximate proportion to those shown. The mass marked above the symbol shall not exceed the load imposed during the design type test (see 6.6.5.3.3.4) divided by 1.8.

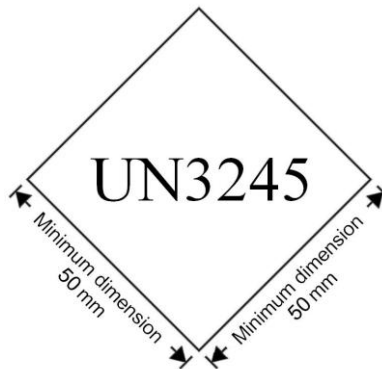
NOTE: *The provisions of 6.6.3.3 shall apply to all large packagings manufactured, repaired or remanufactured as from 1 January 2015.*"

Proposal 10: Mark shown in Packing Instructions P650 and P904

27. Amend the diagram in P650 as follows (overall size of diagram increased to allow for the size of dimensions lettering/arrows):



28. Amend the diagram in P904 as follows (overall size of diagram increased to allow for the size of dimensions lettering/arrows):



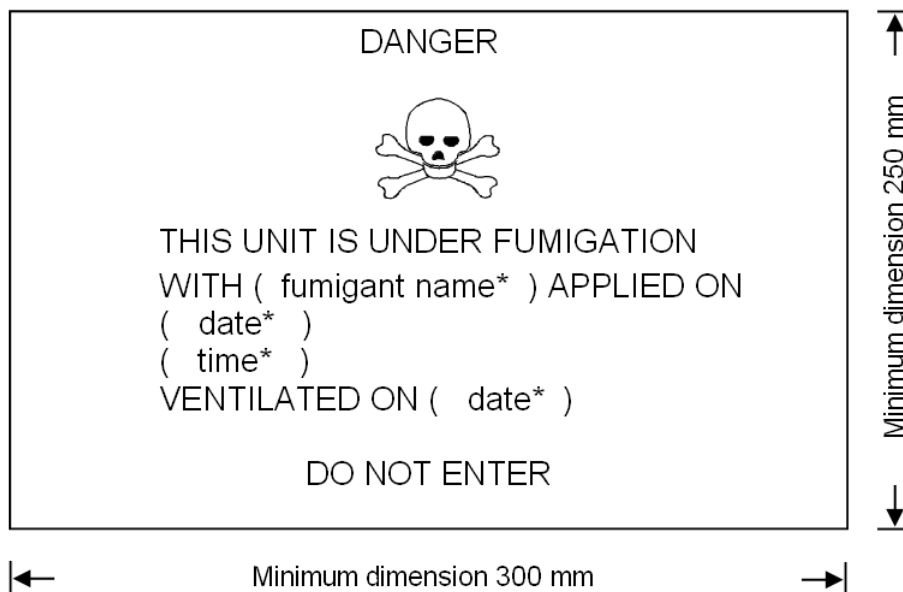
Proposal 11: Fumigation warning mark

29. The fumigation warning mark already has dimensional arrows. This proposal is to align the description of the mark with the wording found for other marks. The line width is specified as with the limited quantity marking.

30. Amend 5.5.2.3.2 and Figure 5.5.1 to read as follows:

“5.5.2.3.2 The fumigation warning mark shall be as shown in Figure 5.5.1.

Figure 5.5.1



* Insert details as appropriate.

Fumigation warning mark

The marking shall be a rectangle. The minimum dimensions shall be 300 mm wide x 250 mm high and the minimum width of the outer line shall be 2 mm. The marking shall be in black print on a white background with lettering not less than 25 mm high.

Where dimensions are not specified, all features shall be in approximate proportion to those shown.”

Proposal 12: Coolant/conditioning unit warning mark

31. For clarity and tidiness, the proper shipping name is specified to fit on only one line. The same applies to the “AS COOLANT”/“AS CONDITIONER” text below it.

32. This paper proposes to make alterations to the artwork in Figure 5.5.2 by increasing the size of the lettering of “WARNING” to be in proportion to the overall dimension. Printer’s marks are also added to the bottom corners to aid clarity. The wording on the dimensional arrows is aligned to the other proposals in this text. Paragraph 5.5.3.6.2 is restructured to be aligned with the proposal for the fumigation warning mark.

33. Delete the existing paragraph 5.5.3.6.2 and replace with a new paragraph 5.5.3.6.2 to read as follows:

5.5.3.6.2 The warning mark shall be as shown in Figure 5.5.2

Figure 5.5.2



Coolant/conditioning warning mark for cargo transport units

* Insert proper shipping name of the coolant/conditioner. The lettering shall be in capitals, all be on one line and shall be at least 25 mm high. If the length of the proper shipping name is too long to fit in the space provided, the lettering may be reduced to the maximum size possible to fit. For example: CARBON DIOXIDE, SOLID.

** Insert “AS COOLANT” or “AS CONDITIONER” as appropriate. The lettering shall be in capitals, all be on one line and be at least 25 mm high.

The marking shall be a rectangle. The minimum dimensions shall be 150 mm wide x 250 mm high. The word “WARNING” shall be in red or white and be at least 25 mm high. Where dimensions are not specified, all features shall be in approximate proportion to those shown.”

Transitional measures

34. The expert from the United Kingdom agrees with the view that a long transitional period is required to allow the running down of any existing stocks of markings. The United Kingdom would view a transitional date of 1 January 2017 for application through modal regulations as being appropriate. However, the United Kingdom has no firm view on the exact date.

Guiding principles

35. The expert from the United Kingdom received support at the 41st session for adding text to the Guiding Principles of the Model Regulations. If the proposals in this paper are adopted, then the expert from the United Kingdom would be prepared to propose text at a later session.
