



Secretariat

Distr.
GENERAL

ST/SG/AC.10/2000/2
18 July 2000

ORIGINAL : ENGLISH

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

(Twenty-first session,
4-13 December 2000,
agenda item 2 (b))

**WORK OF THE SUB-COMMITTEE OF EXPERTS
ON THE TRANSPORT OF DANGEROUS GOODS**

**Draft amendments to the Model Regulations
on the Transport of Dangerous Goods**

**Editorial and technical amendments to the UN Model Regulations
proposed by the International Maritime Organization (IMO)**

Note by the secretariat

1. Reference is made to the report of the Sub-Committee of Experts on the Transport of Dangerous Goods on its eighteenth session (ST/SG/AC.10/C.3/36), paragraph 118.
2. The secretariat reproduces hereunder the list of IMO's proposals contained in document ST/SG/AC.10/C.3/2000/5 on which no decision could be made during the eighteenth session.

Part 2

Chapter 2.0

Provisions should be added to Chapters 3 and 5.4 to indicate that the word "**SAMPLE**" is used to supplement the proper shipping name under the conditions specified in 2.0.4.1.

Chapter 2.4

Several of the references in the remarks following the list self-reactive substances need to be corrected (see reformatted IMDG Code text).

Part 3

Chapter 3.2 Dangerous Goods List

For UN 1386, SEED CAKE the IMDG Code has different light type text. The light type text for this entry in the Code is: "containing vegetable oil". There are no references to "with more than 1.5% oil and not more than 11% moisture". In addition, the IMDG Code does not assign SP 36 to this substance or any other substance. SP 36 is not clear and does not seem necessary since there is no benefit in classifying seed cake under the entry 1373, FIBRES or FABRICS, ANIMAL or VEGETABLE or SYNTHETIC, N.O.S. with oil. These shipping descriptions are less descriptive. SP 36 should be deleted.

For UN 1495, the proper shipping name should be "SODIUM CHLORATE, SOLID" (*note UN 2428 relates to the solution of this substance*).

For UN 1613, HYDROCYANIC ACID, AQUEOUS SOLUTIONS delete SP48. For UN 1873, PERCHLORIC ACID *with more than 50% but not more than 72% acid, by mass* delete SP60. For UN 3219, NITRITES, INORGANIC, AQUEOUS SOLUTION, N.O.S.(PG II and III) and UN 2627, NITRITES, INORGANIC, N.O.S. delete SP103. For UN 1482, PERMANGANATES, INORGANIC, N.O.S. and 3214, PERMANGANATES, INORGANIC, AQUEOUS SOLUTION, N.O.S. delete SP206 in column 6. IMO deleted special provisions 48, 60, 103 and 206 and adopted a new special provision 900 which includes a list of prohibited substances. The UN Committee should consider adopting special provision 900 in lieu of these special provisions (see proposal under Chapter 3.3 below).

For UN 1839, the proper shipping name should be "TRICHLOROACETIC ACID, SOLID" consistent with the IMDG Code (*note UN 2564 relates to the solution of this substance*).

For UN 1939, the proper shipping name should be "PHOSPHORUS OXYBROMIDE, SOLID" consistent with the IMDG Code (*note UN 2576 relates to the molten form of this substance*).

For 2280, HEXAMETHYLENEDIAMINE, SOLID add a molten entry. Use the values for the 2215 molten entry to fill the columns in the Dangerous Goods List.

UN 2455, METHYL NITRITE is prohibited for transport according to the IMDG Code. Methyl nitrate is used as a rocket fuel and explodes when heated and poses a severe hazard when subjected to shock. The E&T assigned a new special provision 900 to this substance to indicate that it is prohibited for transport. The UN Committee should consider prohibiting this substance.

For UN 2678, the proper shipping name should be "RUBIDIUM HYDROXIDE, SOLID" (*note UN 2677 relates to the solution of this substance*).

For UN 2682, the proper shipping name should be "CAESIUM HYDROXIDE, SOLID"

(note UN 2681 relates to the solution of this substance).

For UN 2754, ETHYLTOLUIDINES add " see SP 162" in column 4 because according to the IMDG Code some isomers may have a flashpoint less than 60.5 °C.

For the following UN numbers the light type words "*liquid*" or "*solid*" should be changed to upper case words which are part of the proper shipping name: UN Nos. 1656, 3203, 3278, 3280, 3281 and 3282.

The following UN numbers should have entries for "LIQUID or SOLID" consistent with the IMDG Code: UN 1578, 1597, 1697, 1709, 1733, 1742, 1743, 1835, 2077, 2235, 2239, 2261, 2306, 2662, 2669 and 2937.

The following UN numbers should have entries for "SOLID or SOLUTION" consistent with the IMDG Code:

UN 1445, 1447, 1470, 1579, 1650, 1680, 1689, 1690, 1811, 1812, 1843, 1938, 2074, 2579 (see the reformatted IMDG Code for appropriate column entries).

Chapter 3.3 Special Provisions

IMO deleted special provisions 48, 60, 103, 206 and the words "Transport of hay, straw or bhusa, when wet, damp or contaminated with oil is prohibited" in 281 and adopted a new special provision 900 which includes a list of prohibited substances. The UN Committee should consider adopting special provision 900 in lieu of these special provisions as follows:

900 The transport of the following substances is prohibited:

AMMONIUM BROMATE
AMMONIUM BROMATE, SOLUTION
AMMONIUM CHLORATE
AMMONIUM CHLORATE, SOLUTION
AMMONIUM CHLORITE
AMMONIUM COMPOUND, MIXTURE
AMMONIUM COMPOUNDS, SOLUTION
AMMONIUM NITRATE liable to self-heating sufficient to initiate a decomposition
AMMONIUM NITRITES and mixtures of an inorganic nitrite with an ammonium salt
AMMONIUM PERMANGANATE
AMMONIUM PERMANGANATE, SOLUTION
CHLORIC ACID AQUEOUS SOLUTION with a concentration exceeding 10%
ETHYL NITRITE pure
HAY, STRAW or BHUSA, when wet, damp or contaminated with oil
HYDROCYANIC ACID with more than 20% acid, by mass
HYDROGEN CYANIDE, SOLUTION with more than 45% HYDROGEN
CYANIDE
MERCURY OXYCYANIDE pure
METHYL NITRITE
PERCHLORIC ACID with more than 72% acid, by mass
SILVER PICRATE, dry or wetted with less than 30% water by mass
ZINC AMMONIUM NITRITE

In SP 29, add an additional sentence as follows: "However, packages of UN 1386, 2216 and 2217 transported as a single commodity in a Transport Unit are excepted from displaying the class number provided the Transport Unit in which they are packed is marked with the UN number."

The sentence "This entry shall not be used for solids containing a Packing Group I liquid." in SP 217 should also be added to SP 218 and 216.

Part 4

Chapter 4.1

In 4.1.7 the reformatted IMDG Code has additional text which the E&T believes would be useful to include in the Model Regulation. The text is as follows:

"4.1.7.0 General

4.1.7.0.1 The packaging of an organic peroxide or self-reactive substance required to bear a subsidiary risk label of Class 1 shall comply with the provisions in 4.1.5.

4.1.7.0.2 For organic peroxides, all receptacles shall be "effectively closed". Where significant internal pressure may develop in a package by the evolution of gas, a vent may be fitted, provided the gas emitted will not cause danger, otherwise the degree of filling shall be limited. Any venting device shall be so constructed that liquid will not escape when the package is in an upright position and it shall be able to prevent ingress of impurities. The outer packaging, if any, shall be so designed as not to interfere with the operation of the venting device."

and:

"4.1.7.2.3 Emergencies to be taken into account are:

- .1 for an organic peroxide, the self-accelerating decomposition of the organic peroxide and fire engulfment; and
- .2 for a self-reactive substance of Class 4.1, the substance's ability to ignite easily from external sources such as sparks and flames and the likelihood of a strongly exothermic reaction caused by excessively high transport temperatures or by contamination.

4.1.7.2.4 Self-reactive substances and formulations of organic peroxides transported in IBCs with an SADT less than 55 °C are subject to the temperature control provisions given in Chapter 7.7.

4.1.7.2.5 To prevent explosive rupture of metal IBCs or composite IBCs with a complete metal casing, the emergency-relief devices shall be designed to vent all the decomposition products and vapours evolved during self-accelerating decomposition or during a period of not less than one hour of complete fire engulfment calculated by the equations given in 4.2.1.13.8." *{This is covered in P520 but E&T felt it should also be included in 4.1.7.2.5}*

Part 5

Chapter 5.1

In 5.1.1 the reformatted IMDG Code includes the following additional note (the text was amended to remove text not applicable to the UN Model Regulation):

Note: The purpose of indicating the proper shipping name (see 3.1.2.1 and 3.1.2.2) and the UN Number of dangerous goods offered for transport and of marking the proper shipping name in accordance with 5.2.1 on the package including IBCs containing the goods, is to ensure that the dangerous goods can be readily

identified during transport. This ready identification is particularly important in the case of an accident involving these goods, in order to determine what emergency procedures are necessary to deal properly with the situation."

Chapter 5.2

Add a new paragraph 5.2.2.1.2.1 insert text from DSC 4/3/Add.2 paragraph 5.2.2.1.4

In Chapter 5.2 a new paragraph 5.2.2.1.12 should be added to provided special labelling provisions for flammable solids. 5.2.2.1.12 was chosen in order to avoid having different paragraph numbering from the UN Model Regulation. However, the Committee should consider reorganizing this Chapter by listing the special labelling provisions according to class order. In addition the requirements for corrosives and spontaneously combustible substances in 5.2.2.1.3.1 should be reorganized under appropriate headings such as *Special provisions for the labelling of corrosives* and *Special provisions for the labelling of substances liable to spontaneous combustion*. The text in the reformatted IMDG Code for flammable solids is as follows:

" 5.2.2.1.12 *Special provisions for the labelling of flammable solids*

The Division 4.1 label shall be affixed to packages containing readily combustible solids and solids which may cause fire through friction, self-reactive and related substances, and desensitized explosives. In addition, the following subsidiary risk label shall be applied:

(a) A Class 1 subsidiary risk label for self-reactive substances type B, unless the competent authority has permitted this label to be dispensed with for a specific packaging because test data have proved that the self-reactive substance in such a packaging does not exhibit explosive behaviour."

Chapter 5.3

In Chapter 5.3 the E&T has combined text from the UN Model Regulations and the IMDG Code. The IMDG Code includes additional placarding requirements which the E&T believes have multimodal application. The Committee should consider adopting the following additional text in 5.3.1.1.1 and 5.3.1.1.4:

"5.3.1.1.1 General Provisions

.1 Enlarged labels (placards), and the exterior of the unit; if applicable, marks and signs shall be affixed to the exterior surfaces of a cargo transport unit to provide a warning that the contents of the unit are dangerous goods and present risks, unless the labels and/or marks affixed to the packages are clearly visible from the exterior of the cargo transport unit;

.2 In considering suitable marking methods, account shall be taken of the ease with which the surface of the cargo transport unit can be marked; and

.3 All placards, orange panels, marks and signs shall be removed from cargo transport units or masked as soon as both the dangerous goods and their residues which led to the application of those placards, orange panels, marks or signs are discharged.

5.3.1.1.4 Placarding requirements

5.3.1.1.4.1 A cargo transport unit containing dangerous goods or residues of dangerous shall clearly display placards as follows:

- .1 a cargo transport unit, semi-trailer or portable tank, one on each side and one on each end of the unit;
- .2 a railway wagon, at least on each side;
- .3 a multiple compartment tank containing more than one dangerous substance or their residues, along each side at the positions of the relevant compartments; and
- .4 any other cargo transport unit, at least on both sides and on the back of the unit."

The reformatted IMDG Code includes additional requirements for the marking of cargo transport units. The Committee should consider adopting the IMDG Code text which is as follows:

"5.3.2 Marking of cargo transport units and bulk packagings

5.3.2.0 Display of proper shipping name

The proper shipping name of the contents shall be durably marked on at least both sides of:

- .1 tank transport units containing dangerous goods;
- .2 bulk packagings containing dangerous goods; or
- .3 any other cargo transport unit as defined in 5.3.1.1 containing packaged dangerous goods of a single commodity which constitute a full load and for which no placard or marine pollutant mark is required."

In 5.3.2.1 there are some difference in the reformatted IMDG Code which the Committee should consider incorporating in the UN Model Regulations. These include:

- in 5.3.2.1.1(b) the IMO text reads "Packaged dangerous goods loaded in excess of 4000 kg to which only one UN Number has been assigned;
- an additional sub-paragraph is included for multi-compartment tanks which reads "Each side of a multiple compartment tank, containing more than one dangerous substance or residues, at the positions relevant to the compartments containing the substance or residues;
- an additional sub-paragraph is included for bulk packagings which reads "Bulk packagings containing dangerous goods;
- an additional sub-paragraph is included marking the words "LIMITED QUANTITY" on Transport Units containing full loads of limited quantities but this should be considered in the overall discussions concerning harmonizing limited quantity requirements.

In 5.3.2.2 the E&T proposes that the following IMDG Code text be added relative to elevated temperature materials under the elevated temperature mark:

"In addition to the elevated temperature mark, the maximum temperature of the substance expected to be reached during transport shall be durably marked on both sides of the portable tank or insulation jacket, immediately adjacent to the elevated temperature mark, in characters at least 100 mm high."

Part 6

Chapter 6.1

In 6.1.3.6 the examples of package markings the last column is supposed to be an explanation of the mark. In all of the examples in 6.1.3.6 the explanations of the meanings of the marks are insufficient. The Committee should consider improving the explanations of the markings.
