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

**Sub-Committee of Experts on the  
Transport of Dangerous Goods**  
(Eighteenth session, 3-14 July 2000,  
agenda item 5)

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

**Editorial and technical amendments to the UN Model Regulations**

**Submitted by the International Maritime Organization (IMO)**

1. The IMO Secretariat was requested to submit this paper by the Dangerous Goods, Solid Cargoes and Containers (DSC) Sub-Committee's Editorial and Technical (E&T) Group. The paper identifies certain editorial and technical amendments necessary to the UN Model Regulations. The intent is to maintain to the greatest extent practical consistent requirements in the UN Model Regulations and the IMDG Code. These amendments are proposed based on the work by IMO to reformat the IMDG Code consistent with the format of the UN Model Regulations. The proposed amendments cover both editorial and technical amendments for improving the UN Model Regulations including cases where the IMO DSC E&T believe that the current IMDG Code text is more user friendly and easier to understand as compared to the current UN Model Regulation text.
2. The following proposals are submitted for consideration by the UN Sub-Committee:

**General**

As the United Nations Recommendations are for the *Transport*, not the *Carriage*, of Dangerous Goods, it is proposed that the word "carriage" be replaced with the word "transport" throughout the Recommendations.

## **Part 2**

### **Chapter 2.0**

In paragraph 2.0.4.1 the word “sample” should be shown in upper case in all places where it appears. 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.

In paragraph 2.0.4.1 the word proper should be inserted before the words “shipping name” in the sentence which begins with “The most severe packing group”.

### **Chapter 2.1**

Paragraph 2.1.2.1 in the UN Recommendations should be replaced with the text in paragraph 2.1.2.1 of the reformatted IMDG Code. The IMDG Code text is considered more clear and user friendly. The IMDG Code text is as follows:

#### **“2.1.2 Compatibility groups and classification codes**

2.1.2.1 Goods of Class 1 are considered to be "compatible" if they can be safely stowed or transported together without significantly increasing either the probability of an accident or, for a given quantity, the magnitude of the effects of such an accident. By this criterion, goods listed in this class have been divided into a number of compatibility groups, each denoted by a letter from A to L (excluding I), N and S. These are described in 2.1.2.2 and 2.1.2.3.”

### **Chapter 2.4**

The presentation of the list of self-reactive substances and organic peroxides in the IMDG Code is considered preferable since it is divided according to UN number. This approach is used in T23 for portable tanks. It is proposed that the UN Model Regulation list of self-reactive substances and organic peroxides be reformatted consistent with the format in the reformatted IMDG Code.

The IMDG Code has an additional sentence indicating that metal powders may be wetted with sufficient water so as to suppress their pyrophoric properties. The E&T felt that this information should be included in the UN Model Regulations. It is proposed that a new paragraph 2.4.2.2.4 be included in the Model Regulation as follows:

"2.4.2.2.4 Pyrophoric metal powders, if wetted with sufficient water so as to suppress their pyrophoric properties, may be classified a Division 4.1 flammable solids."

The following comments refer to the list self-reactive substances in paragraph 2.4.2.3.2.3:

The entry for 2-DIAZO-1-NAPHTHOL-4-SULPHOCHLORIDE should be amended to read 2-DIAZO-1-NAPHTHOL-4-SULPHONYLCHLORIDE” in accordance with IUPAC nomenclature. The entry for 2-DIAZO-1-NAPHTHOL-5-SULPHOCHLORIDE should be amended to read 2-DIAZO-1-NAPHTHOL-5-SULPHONYLCHLORIDE” in accordance with IUPAC nomenclature.

The entry for BENZENE-1,3-DISULPHOHYDRAZIDE, as a paste should be amended to read “BENZENE-1,3-DISULPHONYLHYDRAZIDE, as a paste” in accordance with IUPAC nomenclature.

The entry for BENZENE SULPHOHYDRAZIDE should be amended to read BENZENE SULPHONYLHYDRAZIDE” in accordance with IUPAC nomenclature.

The entry for “DIPHENYLOXIDE-4,4’-DISULPHOHYDRAZIDE” should be amended to read “DIPHENYLOXIDE-4,4’-DISULPHONYLHYDRAZIDE” in accordance with IUPAC nomenclature.

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

## Chapter 2.5

In the list of Organic Peroxides (paragraph 2.5.3.2.4) the word “exempt” is not defined. The E&T added a new remark 29 to replace the word exempt as follows: “Not subject to the requirements for Division 5.2 of these Model Regulations”.

## Part 3

### Chapter 3.2 Dangerous Goods List

As a general comment and to enhance user friendliness, the Dangerous Goods List should always list the liquid entries first when an individual UN number represents both liquid and solid substances. Currently this is not dealt with consistently in the UN Dangerous Goods List.

For UN 1057, LIGHTERS or LIGHTER REFILLS, delete the light type word “*cigarette*” since this entry also applies to lighters and lighter refills other than those used for cigarettes.

For UN 1177 the proper shipping name should be “2-ETHYLBUTYL ACETATE” consistent with the IMDG Code and IUPAC nomenclature.

For UN 1265, PENTANES, *liquid* delete the the light type word “*liquid*” because this entry is clearly a flammable liquid which is indicated by the “3” in column 3.

For UN 1278 the proper shipping name should be 1-CHLOROPROPANE consistent with the IMDG Code and IUPAC nomenclature.

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 1471, LITHIUM HYPOCHLORITE, DRY or LITHIUM HYPOCHLORITE MIXTURES, DRY the following light type text should be added to the proper shipping name in column 2 *with more than 39% chlorine (8.8 % available oxygen)*”.

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 Sub-Committee should consider adopting special provision 900 in lieu of these special provisions (see proposal under Chapter 3.3 below).

For UN 1692, STRYCHNINE add SP 43 because this substance may be transported as a pesticide.

For UN 1702 1,1,2,2- should be added immediately before the proper shipping name TETRACHLOROETHANE in column 2 consistent with the IMDG Code. Only this particular isomer is considered subject to the regulations.

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 UN 2249, DICHLORODIMETHYL ETHER, SYMMETRICAL a 3" should be included in column 4. The IMDG Code indicates that the flashpoint of this substance is 42 °C. The E&T confirmed that this flashpoint value is correct.

For UN 2264 the proper shipping name should be N, N-DIMETHYLCYCLOHEXYLAMINE consistent with the IMDG Code.

For UN 2266 the proper shipping name should be DIMETHYL-N-PROPYLAMINE consistent with the IMDG Code.

For UN 2277, ETHYL METHACRYLATE the word STABILIZED should be added to the proper shipping name.

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 Sub-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 2684 the proper shipping name should be 3-(DIETHYLAMINO)-PROPYLAMINE consistent with the IMDG Code and in accordance with IUPAC nomenclature.

For 2698, TETRAHYDROPHTHALIC ANHYDRIDES delete PP29 in column 9 of the Dangerous Goods List. This is an editorial correction.

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.

Delete n- for the following UN numbers: UN 1108, 1110, 1125, 1128, 1274, 1276, 1865, 2227, 2247, 2248, 2278, 2364, 2384 (between DI and PROPYL), 2482, 2485, 2690, 2740, 2743, 2754, 2841, 3056. According to IUPAC nomenclature rules when a specific isomer is not indicated then it is deemed to be the normal isomer.

For the following UN numbers delete (o-, m-, p-) . It is not necessary to specify the different isomers. The fact that the proper shipping name is plural sufficiently indicates that more than one isomer is covered: UN 1661, 1663, 1673, 2512 and 2671.

For the following UN numbers the letter s should be deleted from the proper shipping name in column 2 because either the proper shipping name is a generic or n.o.s. entry or because it is not an entry that represents several isomers: UN 1390, 1433, 1854, 2235.

For the following UN numbers the letter s should be added to the proper shipping name in column 2 because either the proper shipping name represents several isomers: UN 1106, 1107, 1111, 1112, 1147, 1216, 2049, 2258 (delete 1,2 as well), 2287, 2288, 2297, 2347, 2458, 2461 and 2615.

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).

#### **Portable Tank Provisions (TPs):**

For UN 1579, 4-CHLORO-*o*-TOLUIDINE HYDROCHLORIDE, the following portable tank provisions should be added in columns 10 and 11 for the liquid entry: T4, TP1.

For UN 3027, COUMARIN DERIVATIVE PESTICIDE, SOLID, TOXIC and UN 3052, ALUMINIUM ALKYL HALIDES, SOLID remove the tank instructions. These are solids. The tank instructions do not apply.

For UN 3050, PG I, add TP9 in column 11. Since this is a PG I generic entry TP9 is required according to the rationalized approach.

Add TP 28 for UN 2571, 1863 (PG I), 1866 (PG I), 1906, 3295 (PG I), 2797 because these are generic entries and the IMDG Code previously allowed these substances to be transported in 2.65 bar tanks.

Add TP 28 for UN 3250, Chloroacetic acid, molten consistent with the 2.65 bar tank specified in the IMDG Code.

Add TP 27 for UN 1993 (PG I) and. This is consistent with other PG I generic entries which are assigned TP 27 (e.g UN 1992).

Add TP 27 for UN 3279 (PG I). This is consistent with other PG I generic entries which are assigned TP 27 (e.g UN 3278).

### 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 Sub-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 delete the words "and the packing group". It is not necessary to mark the packing group. These are all PG III substances. Add an additional sentence as follows: "However, packages of UN 1374, 1386, 2216 and 2217 transported as a single commodity in a Transport Unit are exempted from displaying the class number provided the Transport Unit in which they are packed is marked with the UN number."

SP 78 should be deleted. It is only assigned to UN 2870, ALUMINIUM BOROHYDRIDE or ALUMINIUM BOROHYDRIDE IN DEVICES and this entry is not authorized in bulk packagings (IBCs or portable tanks) in the Dangerous Goods List. Therefore, it is not necessary to state that the bulk transport of the substance is prohibited except with special authorization..

SP 107 should be deleted. It only applies to UN 2793 FERROUS METAL SHAVINGS. It is proposed that SP 223 be assigned to this entry.

In SP162 change 23 °C to 60.5 °C. The Class 3 label should be applied to all flammable substances having a flashpoint less than 60.5 °C.

In special provisions 216, 217 and 218 the sentence "Each transport unit shall be leakproof" should be changed to "Each cargo transport unit shall be leakproof when used as a bulk packaging". The E&T felt that this sentence was only intended to apply when transport units are used as bulk packagings such as for the transport of contaminated soil and that "transport unit" should be changed to "cargo transport unit".

It was also felt that 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.

SP 222 should be deleted. The term "water-reactive" is defined in Part 2.

SP 300 should be divided into two separate special provisions. In the new SP 300 maintain only the first sentence. This should apply to UN 1374, FISH MEAL, UNSTABILIZED or FISH SCRAP, UNSTABILIZED, Division 4.2 and UN 2216, FISH MEAL, STABILIZED or FISH SCRAP, STABILIZED, Class 9. The new SP should include the second sentence from SP 300 and should only apply to UN 2216, Class 9. This is necessary because the second sentence of SP 300 does not apply to UN 1374, FISH MEAL, Division 4.2 which is not anti-oxidant treated.

In SP 301 an additional sentence should be added at the end as follows: The transport of dangerous goods in machinery or apparatus where the quantity of dangerous goods exceeds the quantity specified in column 7 of the Dangerous Goods List is authorized when approved by the competent authority.

### **Chapter 3.4 Limited Quantities**

In paragraph 3.4.1 the words "inner packaging" should be added in the second sentence after the words "The applicable". This is necessary because the limits apply to the inner packagings.

## **Part 4**

### **Chapter 4.1**

In P406 PP24 should be deleted. PP24 should also be deleted in column 9 for the entry "DIPICRYL SULPHIDE, WETTED, UN 2852".

In P410 under single packagings "3/" should be added for 4C2 packagings.

In P601 and P602 the words "and the packagings are hermetically sealed" should be added after "and 4.1.3" in the first sentence. These packagings are all intended to be hermetically sealed.

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}*

A new paragraph 4.1.9.1.6 should be added consistent with the reformatted IMDG Code as follows:

Pyrophoric radioactive materials shall be packaged in Type A, Type B(U), Type B(M) or Type C packages and shall be suitably inerted. This was reviewed by the radioactive materials working group and it was decided to be included in the reformatted IMDG Code.

## **Part 5**

### **Chapter 5.1**

In Chapter 5.1 the E&T added a note to the reformatted IMDG Code to indicate that for Class 7 the term packages has a different meaning. Insert the note:

**Note:** The provisions of Chapter 5.2 apply to all Class 7 packages as defined in 2.7.2.

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.

In 5.1.2 the title should be changed from Use of overpacks to Use of overpacks and unit loads . The words and unit loads should be added after the word overpacks in each instance where it appears. The IMDG Code includes a requirements for overpacks and unit loads in this section and the requirements for overpacks are considered equally relevant to unit loads. The Sub-Committee should consider whether a definition of the term unit load should be included in Part 1 of the Model Regulation.

In the first sentence of 5.1.2.1 add and marked after the words UN number . This is necessary because the UN Model Regulation includes other marking requirements in addition to marking of the proper shipping name and UN number (i.e. the elevated temperature mark).

In 5.1.3.2 delete the words storage or . The requirements in the UN Model Regulation and the IMDG Code only apply to transport.

## Chapter 5.2

The title of Chapter 5.2 should be changed to MARKING AND LABELLING OF PACKAGES AND INTERMEDIATE BULK CONTAINERS because this Chapter applies to packages where as Chapter 5.3 applies to Cargo Transport Units. An alternate approach could be to add the words including IBCs and large packagings after packagings in the definition of package in 1.2.1.

In Chapter 5.2 the IMDG Code has a note which the E&T believes should be included the UN Model Regulation. The note is as follows:

**Note:** These provisions relate essentially to the marking and labeling of dangerous goods according to their properties. However, additional markings or symbols indicating precautions to be taken in handling or storing a package (such as, a symbol representing an umbrella indicating that a package shall be kept dry) may be displayed on a package if appropriate.

In 5.2.1.1 change the word shown to marked .

In 5.3.1.3.1 the words Packages containing should be added before substances because the label appears on the package not the substance.

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 labeling 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 Sub-Committee should consider reorganizing this Chapter by listing the special labeling 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 labeling 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 behavior.

In 5.2.2.2.1 the word numbers should be added after the words in terms of colour, .

## 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 Sub-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 Sub-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 Sub-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.

## **Chapter 5.4**

There are a number of differences concerning Chapter 5.4 Documentation. However, it is the understanding of IMO that these will be addressed by the UN Committee of Experts under the work program for harmonizing documentation requirements therefore comments on these differences are not provided at this time. However, it is noted that the reformatted IMDG Code includes an example of a Container Packing Certificate.

The UN Sub-Committee should consider including an example of the certificate in the Model Regulation.

## **Chapter 5.5**

In 5.5.2 the reformatted IMDG Code provides additional details concerning the fumigation warning sign. The Sub-Committee should consider adopting the following paragraph immediately preceding the warning sign:

5.5.2.3 The fumigation warning sign shall be rectangular and shall not be less than 300 mm wide and 250 mm high. The markings shall be black print on a white background with lettering not less than 25 mm high. An illustration of this sign is given:

## **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 Sub-Committee should consider improving the explanations of the markings.

In 6.1.4.8.2 the text which reads is five years from the manufacture of ... in the UN Model Regulation should be amended to read shall not exceed five years from the manufacture of ... . The time can not be exactly five years. The goal is not to exceed five years.

#### Chapter 6.4

In 6.4.23.4 the introductory sentence should read: An application for approval of Type B(U) and Type C package design shall include: . This only applies to the approval of Type B(U) and Type C package designs.

In 6.4.23.9 the text pertaining to B(U), B(M)and Type C package design should be amended as follows:

B(U) Type B(U) package design (**B(U)F if for fissile material**)  
B(M) Type B(M) package design (**B(M)F if for fissile material**)  
C Type C package design (**CF if for fissile material**)  
*\*The text shown in bold is missing from the UN Model Regulation*

In 6.4.23.13 the reformatted Code includes a sub-paragraph (h) which is missing in the UN Model Regulation. Paragraph (h) reads as follows:

(h) Reference to information provided by the applicant relating to specific actions to be taken prior to shipment.

In 6.4.23.15 the reformatted Code includes specific references to the applicable sections which require the competent authority to be informed of the serial number of each packaging manufactured as follows:

6.4.23.15 The competent authority shall be informed of the serial number of each packaging manufactured to a design approved under 6.4.22.2, 6.4.22.3, 6.4.22.4, 6.4.24.2 and 6.4.24.3. The competent authority shall maintain a register of such serial numbers.

The Sub-Committee should consider adopting the reformatted Code text.

#### Chapter 6.5

In the title of this section change the word test to testing consistent with other sections.

#### Chapter 6.7

The reformatted Code includes the following paragraph that the Sub-Committee should consider adding to the UN Model Regulations:

6.7.2.2.9.1 For portable tanks that are intended for use as offshore tank-containers, the dynamic stresses imposed by handling in open seas shall be taken into account.

In 6.7 2.20.2, the words "Name of the substance(s)...50 °C" were deleted because this is or should be covered in Part 5 of the reformatted Code.

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