



WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTY-SECOND MEETING

Montréal, 5 to 16 October 2009

Agenda Item 2: Development of recommendations for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2011-2012 Edition

DRAFT AMENDMENTS OF THE TECHNICAL INSTRUCTIONS TO ALIGN TO THE UN RECOMMENDATIONS — PART 5

(Presented by the Secretary)

SUMMARY

This working paper contains draft amendments to Part 5 of the Technical Instructions to reflect the decisions taken by the UN Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals at its fourth session (Geneva, 12 December 2008). It also reflects amendments agreed by DGP-WG08 (The Hague, 3 to 7 November 2008) and DGP-WG09 (Auckland, New Zealand, 4 to 8 May 2009).

The DGP is invited to agree to the draft amendments in this working paper.

Chapter 1

GENERAL

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1.1 GENERAL REQUIREMENTS

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DGP/22-WP/3, paragraph 3.2.27:

f) the overpack does not contain packages of dangerous goods which require segregation according to Table 7-1;

g) when an overpack is used, packages must be secured within the overpack;

g) the dangerous goods are not included in any freight container/unit load device except for radioactive material as specified in 7.2.9 (subject to the approval of the operator, this does not apply to a unit load device containing consumer commodities prepared according to Packing Instruction 910 or dry ice used as a refrigerant for other than

dangerous goods when prepared according to Packing Instruction 904 or magnetized material when prepared according to Packing Instruction 902);

i) before a package or overpack is reused, all inappropriate dangerous goods labels and markings are removed or completely obliterated; and

j) each package contained within an overpack is properly packed, marked, labelled and is free of any indication that its integrity has been compromised and in all respects is properly prepared as required in these Instructions. The "overpack" marking described in 2.4.10 is an indication of compliance with this requirement. The intended function of each package must not be impaired by the overpack.

Note.— For cooling purposes, an overpack may contain dry ice, provided that the overpack meets the requirements of Packing Instruction 904.

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1.2 GENERAL PROVISIONS FOR CLASS 7

1.2.1 APPROVAL OF SHIPMENTS AND NOTIFICATION

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1.2.1.4 Notifications

Notification to competent authorities is required as follows:

a) Before the first shipment of any package requiring competent authority approval, the shipper must ensure that copies of each applicable competent authority certificate applying to that package design have been submitted to the competent authority of the country of origin of the shipment and to competent authority of each country through or into which the consignment is to be transported. The shipper is not required to await an acknowledgement from the competent authority, nor is the competent authority required to make such acknowledgement of receipt of the certificate;

b) For each of the following types of shipments:

i) Type C packages containing radioactive material with an activity greater than 3000 A₁ or 3000 A₂, as appropriate, or 1000 TBq, whichever is the lower;

ii) Type B(U) packages containing radioactive material with an activity greater than 3000 A₁ or 3000 A₂, as appropriate, or 1000 TBq, whichever is the lower;

iii) Type B(M) packages;

iv) Shipment under special arrangement;

the shipper must notify the competent authority of the country of origin of the shipment and the competent authority of each country through or into which the consignment is to be transported. This notification must be in the hands of each competent authority prior to the commencement of the shipment, and preferably at least 7 days in advance;

c) The shipper is not required to send a separate notification if the required information has been included in the application for shipment approval;

d) The consignment notification must include:

i) sufficient information to enable the identification of the package or packages including all applicable certificate numbers and identification marks;

ii) information on the date of shipment, the expected date of arrival and proposed routing;

iii) the names of the radioactive material or nuclides;

iv) descriptions of the physical and chemical forms of the radioactive material, or whether it is special form radioactive material or low dispersible radioactive material; and

v) the maximum activity of the radioactive contents during transport expressed in units of becquerels (Bq) with an appropriate SI prefix symbol (see 1;3.2). For fissile material, the mass of fissile material (or of each fissile nuclide for mixtures when appropriate) in units of grams (g), or multiples thereof, may be used in place of activity.

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1.2.3 Determination of transport index (TI) and criticality safety index (CSI)

1.2.3.1 Determination of transport index

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1.2.3.1.4 Packages and overpacks must be assigned to either category I-WHITE, II-YELLOW or III-YELLOW in accordance with the conditions specified in Table 5-2 and with the following requirements:

- a) for a package or overpack, both the transport index and the surface radiation level conditions must be taken into account in determining which is the appropriate category. Where the transport index satisfies the condition for one category but the surface radiation level satisfies the condition for a different category, the package or overpack must be assigned to the higher category. For this purpose, category I-WHITE must be regarded as the lowest category;
- b) the transport index must be determined following the procedures specified in 1.2.3.1.1 and 1.2.3.1.2;
- c) if the surface radiation level is greater than 2 mSv/h, the package or overpack must be transported under exclusive use and under the provisions of 7.2.9.5.3; as appropriate;
- d) a package transported under a special arrangement must be assigned to category III-YELLOW ~~except when otherwise specified in the competent authority approval certificate of the country of origin of design (see 2.7.2.4.6)~~ under the provisions of 1.2.3.1.5;
- e) an overpack which contains packages transported under special arrangement must be assigned to category III-YELLOW ~~except when otherwise specified in the competent authority approval certificate of the country of origin of design (see 2.7.2.4.6)~~ under the provisions of 1.2.3.1.5.

1.2.3.1.5 In all cases of international transport of packages requiring competent authority design or shipment approval, for which different approval types apply in the different countries concerned by the shipment, the categorization must be in accordance with the certificate of the country of origin of design.

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1.2.4 Specific provisions for excepted packages

1.2.4.1 Excepted packages must be legibly and durably marked on the outside of the packaging with:

- a) the UN number preceded by the letters "UN";
- b) an identification of either the consignor or consignee, or both; and
- c) the permissible gross mass if this exceeds 50 kg.

1.2.4.2 The documentation requirements of 5.4 do not apply to excepted packages of radioactive material, except that the UN number preceded by the letters "UN" must be shown on a transport document such as an air waybill or other similar document.

Chapter 2

PACKAGE MARKINGS

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2.4 MARKING SPECIFICATIONS AND REQUIREMENTS

2.4.1 Marking with proper shipping name and UN number

2.4.1.1 Unless otherwise provided in these Instructions, the proper shipping name of the dangerous goods (supplemented with the technical name(s) if appropriate, see Part 3, Chapter 1) and, when assigned, the corresponding UN number preceded by the letters "UN" must be displayed on each package. In the case of unpackaged articles, the marking

must be displayed on the article, on its cradle or on its handling, storage or launching device. A typical package marking would be:

“Corrosive liquid, acidic, organic, n.o.s. (caprylyl chloride) UN 3265”.

~~For packages containing limited quantities of dangerous goods, the UN number (preceded by the letters “UN”) may be placed within a diamond. If the diamond marking is applied, the following requirements must be met. The width of the line forming the diamond must be at least 2 mm; the number must be at least 6 mm high. When more than one substance is included in the package and the substances are assigned to different UN numbers, then the diamond must be large enough to include each relevant UN number.~~

~~Note. It is anticipated that displaying the UN number within a diamond for packages containing limited quantities of dangerous goods will become mandatory as of 1 January 2011.~~

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2.4.3 Special marking requirements for explosives

~~DGP/22-WP/3, paragraph 3.2.24:~~

~~Each package must be marked with the net quantity of explosive and the gross mass of the package. The proper shipping name required by 2.4.1 may be supplemented by additional descriptive text to indicate commercial or military names.~~

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2.4.5 Special marking requirements for radioactive material

2.4.5.1

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- e) ~~each excepted package must be marked with the UN number, preceded by the letters “UN”~~ The marking of excepted packages must be as required by 1.2.4.

2.4.5.2 In all cases of international transport of packages requiring competent authority design or shipment approval, for which different approval types apply in the different countries concerned by the shipment, marking must be in accordance with the certificate of the country of origin of the design.

2.4.6 Special marking requirements for refrigerated liquefied gas

~~DGP/22-WP/2, paragraph 3.2.39:~~

~~The upright position of each package must be indicated prominently by arrows or by using either the “Package orientation” label (Figure 5-26) or pre-printed package orientation labels meeting the same specification as either Figure 5-26 or ISO Standard 780-1997. The label must be affixed to or printed on at least two opposite vertical sides of the package with the arrows pointing in the correct direction.~~ The wording “KEEP UPRIGHT” must be placed at 120° intervals around the package or on each side. Packages must also be clearly marked “DO NOT DROP — HANDLE WITH CARE”.

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2.4.9 Special marking provisions for environmentally hazardous substances

2.4.9.1 Packages containing substances or mixtures dangerous to the aquatic environment not presenting a danger covered by other classes, but classified by the shipper as dangerous goods (UN Nos. 3077 and 3082) (see Special Provision A97), must be durably marked with the environmentally hazardous substance mark, with the exception of single packagings and combination packagings containing inner packagings with:

- ~~contents~~ a net quantity of 5 L or less for liquids; or
- ~~contents~~ a net mass of 5 kg or less for solids.

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2.4.11 Additional markings of packages containing dangerous goods in limited quantities

Packages containing limited quantities of dangerous goods and prepared in accordance with 3.4 must be marked "limited quantity(ies)" or "LTD QTY". Provisions for the marking of packages containing dangerous goods in limited quantities are contained in 3.4.

2.4.12 Specific provisions for dangerous goods packed in excepted quantities

Provisions for the marking of packages containing dangerous goods in excepted quantities are contained in 3.5.

2.4.13 Markings required by other modes of transport

Markings required by other international or national transport regulations are permitted in addition to markings required by these Instructions, provided that they cannot be confused with or conflict with any markings prescribed by these Instructions, because of their colour, design or shape.

2.4.14 Special marking requirement for chemical oxygen generators

When chemical oxygen generators contained in protective breathing equipment (PBE) are being transported under Special Provision A144, the statement "Aircrew protective breathing equipment (smoke hood) in accordance with Special Provision A144" shall be marked adjacent to the proper shipping name on the package.

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Chapter 3

LABELLING

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3.2 APPLICATION OF LABELS

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3.2.6 Except when enlarged labels are used in accordance with 3.6, each package, overpack and freight container containing radioactive material must bear at least two labels which conform to Figures 5-18, 5-19 and 5-20 as appropriate according to the category (see 5.1.2.3.1.4) of that package, overpack or freight container. Labels must be affixed to two opposite sides on the outside of the package or on the outside of all four sides of the freight container. Each overpack containing radioactive material must bear at least two labels on opposite sides of the outside of the overpack. In addition, each package, overpack and freight container containing fissile material, other than fissile material excepted under the provisions of 6.7.10.2 must bear labels which conform to the model shown in Figure 5-21; such labels, where applicable, must be affixed adjacent to the labels for radioactive material. Labels must not cover the markings specified in Chapter 2. Any labels which do not relate to the contents must be removed or covered.

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3.2.11 In addition to the class hazard labels specified in 3.1, handling labels must also be affixed to packages of dangerous goods as follows:

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- b) when required by the provisions of 4.1.1.13, either the "Package orientation" label (Figure 5-26), or pre-printed package orientation labels meeting the same specification as either Figure 5-26 or ISO Standard 780-1997, must be affixed to or printed on at least two opposite vertical sides of the package with the arrows pointing in the correct direction. The words "Dangerous goods" may be inserted on the label below the line;

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3.3 LABELLING OF OVERPACKS

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3.3.2 An overpack containing single packages with end closures containing liquid dangerous goods must be labelled with either the "Package Orientation" label (Figure 5-26), or pre-printed package orientation labels meeting the same specification as either Figure 5-26 or ISO Standard 780-1997, unless such labels are affixed to the package and are visible from the outside of the overpack. Such labels must be affixed to or printed on at least two opposite vertical sides of the overpack with the arrows pointing in the direction required to indicate the orientation of the overpack required to ensure that end closures are upward, notwithstanding that such single packages may also have side closures.

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3.5 LABEL SPECIFICATIONS

3.5.1 Class hazard label specifications

3.5.1.1 Class hazard labels must conform to the following specifications:

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Labelling of radioactive material

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h) Each label conforming to Figures 5-18, 5-19 and 5-20 must be completed with the following information:

1) Contents:

A) except for LSA-I material, the name(s) of the radionuclide(s) as taken from Table 2-12, using the symbols prescribed therein. For mixtures of radionuclides, the most restrictive nuclides must be listed to the extent the space on the line permits. The group of LSA or SCO must be shown following the name(s) of the radionuclide(s). The terms "LSA-II", "LSA-III", "SCO-I" and "SCO-II" must be used for this purpose;

B) for LSA-I material, the term "LSA-I" is all that is necessary; the name of the radionuclide is not necessary;

2) Activity: The maximum activity of the radioactive contents during transport expressed in units of becquerels (Bq) with the appropriate SI prefix symbol. For fissile material, the mass of fissile material (or mass of each fissile nuclide for mixtures when appropriate) in units of grams (g), or multiples thereof, may be used in place of activity;

3) For overpacks and freight containers the "contents" and "activity" entries on the label must bear the information required in 3.5.1.1 h) 1 A) and B), respectively, totalled together for the entire contents of the overpack or freight container except that on labels for overpacks or freight containers containing mixed loads of packages containing different radionuclides, such entries may read "See Transport Documents";

4) Transport index: The number determined in accordance with 1.2.3.1.1 and 1.2.3.1.2. (No transport index entry is required for category I-WHITE.)

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k) In all cases of international transport of packages requiring competent authority design or shipment approval, for which different approval types apply in the different countries concerned by the shipment, labelling must be in accordance with the certificate of the country of origin of design.

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3.5.2 Handling labels

3.5.2.1 Handling label specifications

An illustration of each of the handling labels showing the approved design and colour is given in Figures 5-24 to 5-26 and Figures 5-28 to 5-31. The minimum label dimensions are shown in the figures, however:

a) labels having dimensions not smaller than half of those indicated may be used on packages containing infectious

substances when the packages are of dimensions such that they can only bear smaller labels; and

- b) orientation labels may meet the specification of either Figure 5-26 or ISO Standard 780-1:1997.

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Figure 5-14. Oxidizing substance, Class 5

~~Note.— It is anticipated that Figure 5-13 in the 2005-2006 edition of the Technical Instructions may continue to be used to denote organic peroxides until 31 December 2010.~~

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Chapter 4

DOCUMENTATION

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Note.— These Instructions do not preclude the use of electronic data processing (EDP) and electronic data interchange (EDI) transmission techniques as an alternative to paper documentation. Unless otherwise indicated, all references to “dangerous goods transport document” in this chapter also include provision of the required information by use of EDP and EDI transmission techniques.

4.1 DANGEROUS GOODS TRANSPORT INFORMATION

4.1.1 General

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4.1.3 Shipper and consignee

DGP/22-WP/2, paragraph 3.2.34:

The name and address of the shipper and the consignee of the dangerous goods must be included on the dangerous goods transport document. For the transport of radioactive material, the telephone number of the consignee, in the State of Destination, should be included.

4.1.4 Information required on the dangerous goods transport document

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4.1.4.3 Information which supplements the proper shipping name in the dangerous goods description

The proper shipping name in the dangerous goods description must be supplemented as follows:

- a) *Technical names for “n.o.s.” and other generic descriptions:* Proper shipping names that are assigned an asterisk in column 1 of the Dangerous Goods List must be supplemented with their technical or chemical group names as described in 3.1.2.7;
- b) *Empty uncleaned packagings:* Empty means of containment which contain the residue of dangerous goods of classes other than Class 7 must be described as such by, for example, placing the words “Empty uncleaned” or “Residue last contained” before or after the ~~proper shipping name~~ dangerous goods description specified in 4.1.4.1 a) to e);
- c) *Wastes:* For waste dangerous goods (other than radioactive wastes) which are being transported for disposal, or for processing for disposal, the proper shipping name must be preceded by the word “Waste”, unless this is already a part of the proper shipping name;

- d) *Elevated temperature substances*: For solid substances, unless the word “Molten” is already included in the proper shipping name, it must be added to the proper shipping name on the dangerous goods transport document when a substance is offered for air transport in the molten state (see Part 3, Chapter 1).

4.1.5 Information required in addition to the dangerous goods description

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4.1.5.1 Quantity of dangerous goods, number and type of packagings

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UN packaging codes may only be used to supplement the description of the kind of package (e.g. one fibreboard box (4G)). Where the letter “G” follows the quantity in column 11 or 13 of Table 3-1 the gross mass of each package must be indicated, rather than the net quantity; and:

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DGP/22-WP/2, paragraph 3.2.37

- e) for items where “No Limit” or a packing instruction number is shown in columns ~~11~~ 10 ~~or to~~ 13 of Table 3-1, the quantity must be:

1) the net mass or volume for substances the net mass or volume (e.g. UN 2969, UN 3291).

2) For articles the gross mass, followed by the letter G (e.g. UN 2794, UN 2800, UN 2990, UN 3166) ~~the quantity must be the gross mass, followed by the letter G.~~

Note.— The number, type and capacity of each inner packaging within the outer packaging of a combination packaging is not required to be indicated.

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4.1.5.7 Radioactive material

4.1.5.7.1 The following information must be included for each consignment of Class 7 material, as applicable, in the order given:

- a) The name or symbol of each radionuclide or, for mixtures of radionuclides, an appropriate general description or a list of the most restrictive nuclides;
- b) A description of the physical and chemical form of the material, or a notation that the material is special form radioactive material or low dispersible radioactive material. A generic chemical description is acceptable for chemical form;
- c) The maximum activity of the radioactive contents during transport expressed in units of becquerels (Bq) with an appropriate SI prefix symbol (see 1;3.2). For fissile material, the mass of fissile material (or mass of each fissile nuclide for mixtures when appropriate) in units of grams (g), or appropriate multiples thereof, may be used in place of activity;

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- j) For LSA-II, LSA-III, SCO-I and SCO-II, the total activity of the consignment as a multiple of A_2 . For radioactive material for which the A_2 value is unlimited, the multiple of A_2 must be zero.

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4.1.5.7.3 In all cases of international transport of packages requiring competent authorities design or shipment approval, for which different approval types apply in the different countries concerned by the shipment, the UN number and proper shipping name required in 4.1.4.1 must be in accordance with the certificate of the country of origin of design.

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4.1.6 Certification

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4.1.6.2 If the dangerous goods documentation is presented to the operator by means of ~~electronic data processing (EDP) or electronic data interchange (EDI)~~ transmission techniques, the signature(s) may be electronic signature(s) or may be replaced by the name(s) (in capitals) of the person authorized to sign. Where the original consignment details are provided to an operator, by EDP or EDI techniques, and subsequently the consignment is transhipped to an operator that requires a paper dangerous goods transport document, the operator must ensure the paper document ~~must~~ indicates "Original Received Electronically" and the name of the signatory must be shown in capital letters.

4.1.6.3 In addition to the languages which may be required by the State of Origin, English should be used for the dangerous goods transport document.

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4.5 RETENTION OF DANGEROUS GOODS TRANSPORT INFORMATION

4.5.1 The shipper must retain a copy of the dangerous goods transport document and additional information and documentation as specified in these Instructions, for a minimum period of three months.

4.5.2 When the documents are kept electronically or in a computer system, the shipper must be able to reproduce them in a printed form.

— END —