International Civil Aviation Organization

**WORKING PAPER**

DGP-WG/05-WP/9
3/3/05

**DANGEROUS GOODS PANEL (DGP)**

**MEETING OF THE WORKING GROUP OF THE WHOLE**

**Montreal, 18 to 22 April 2005**

**Agenda Item 2: Development of recommendations for amendments to the *Technical Instructions* for incorporation in the 2007/2008 edition**
**2.1: Part 1 — General**
**2.3: Part 3 — Dangerous Goods List and Limited Quantities Exceptions**
**2.5: Part 5 — Shipper's Responsibilities**

# AMENDMENTS TO THE TECHNICAL INSTRUCTIONS ARISING FROM WG/04

(Presented by the Secretary)

# PART 1

## Chapter 2

## LIMITATION OF DANGEROUS GOODS ON AIRCRAFT

*Parts of this Chapter are affected by State Variations CA 5, CA 9, GB 5, JP 23, NL 2, US 1, US 2, VC 4; see Table A-1*

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### 2.4 DANGEROUS GOODS IN EXCEPTED QUANTITIES

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#### 2.4.2 Applicability

2.4.2.1 Excepted quantities of dangerous goods may only be carried in accordance with the limitations and provisions contained in this paragraph and must meet all the applicable requirements of those parts of the Technical Instructions listed in 2.4.1 above.

2.4.2.2 Only dangerous goods which are permitted on passenger aircraft and which meet the criteria of the following classes, divisions and packing groups (if appropriate) may be carried under these provisions for dangerous goods in excepted quantities:

| | |
|---|---|
| Division 2.2 | Without subsidiary risk |
| Class 3 | All packing groups |
| Class 4 | Packing Groups II and III but excluding all self-reactive substances |
| Division 5.1 | Packing Groups II and III |
| Division 5.2 | Only when contained in a chemical kit or a first-aid kit |
| Division 6.1 | All substances other than those having an inhalation toxicity of Packing Group I |
| Class 8 | Packing Groups II and III but excluding UN Nos. 2803 and 2809 |
| Class 9 | All substances and articles other than magnetized material and carbon dioxide, solid |

Substances and articles in the above classes, divisions and packing groups may also be radioactive material in excepted packages.

*Secretarial Note.— DGP-WG04-WP/15 refers.*

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## Chapter 4

## TRAINING

*Parts of this Chapter are affected by State Variations AE 2, CA 18, HK 1, US 1; see Table A-1*

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### 4.2 TRAINING CURRICULA

4.2.1 Personnel must receive training in the requirements commensurate with their responsibilities. Such training must include:

a) general familiarization training — which must be aimed at providing familiarity with the general provisions;

b) function-specific training — which must provide detailed training in the requirements applicable to the function for which that person is responsible; and

c) safety training — which must cover the hazards presented by dangerous goods, safe handling and emergency response procedures.

4.2.2 Training must be provided or verified upon the employment of personnel identified in the categories specified in Table 1-4.

4.2.3 Recurrent training must take place within 24 months of previous training to ensure knowledge is current.

4.2.4 A test to verify understanding must be undertaken following training. ~~and a certificate issued confirming~~ Confirmation that the test has been completed satisfactorily is required.

4.2.5 A record of training must be maintained which must include:

a) the individual's name;

b) the most recent training completion date;

c) a description, copy or reference to training materials used to meet the training requirements;

d) the name and address of the organization providing the training; and

e) ~~a copy of the certification issued when the individual was trained,~~ evidence which shows that a test has been completed satisfactorily.

The records of training must be made available upon request to the appropriate national authority.

4.2.6 The subject matter relating to dangerous goods transport with which various categories of personnel should be familiar is indicated in Table 1-4.

*Secretarial Note.— DGP-WG04-WP/40 refers.*

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# PART 3

## DANGEROUS GOODS LIST AND LIMITED QUANTITIES EXCEPTIONS

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## Chapter 2

## ARRANGEMENTS OF THE DANGEROUS GOODS LIST (TABLE 3-1)

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### Table 3-1. Dangerous Goods List

| *Name* | *UN No.* | *Class or division* | *Sub-sidiary risk* | *Labels* | *State variations* | *Special provisions* | *UN packing group* | *Passenger aircraft* | | *Cargo aircraft* | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | *Packing instruction* | *Max. net quantity per package* | *Packing instruction* | *Max. net quantity per package* |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| **Engines, internal combustion, flammable gas powered** | 3166 | | | | | | | | | | |
| **Engines, internal combustion, flammable liquid powered** | 3166 | | | | | | | | | | |
| **Ammonia, anhydrous** | 1005 | | | | | | | FORB | | FORB | |
| **Ammonia solution**, relative density less than 0.880 at 15 C in water, with more than 50% ammonia | 3318 | | | | | | | FORB | | FORB | |
| **Carbon monoxide, compressed** | 1016 | | | | | | | FORB | | FORB | |
| **Carbonyl sulphide** | 2204 | | | | | | | FORB | | FORB | |
| **Coal gas, compressed** | 1023 | | | | | | | FORB | | FORB | |
| **Ethylene oxide and carbon dioxide mixture,** with more than 87% ethylene oxide | 3300 | | | | | | | FORB | | FORB | |
| **Ethylene oxide** | 1040 | | | | | | | FORB | | FORB | |
| **Ethylene oxide with nitrogen** up to a total pressure of 1 Mpa at 50 C | 1040 | | | | | | | FORB | | FORB | |
| **Hydrogen bromide, anhydrous** | 1048 | | | | | | | FORB | | FORB | |
| **Methyl mercaptan** | 1064 | | | | | | | FORB | | FORB | |
| **Silicon tetrafluoride** | 1859 | | | | | | | FORB | | FORB | |
| **Sulphur dioxide** | 1079 | | | | | | | FORB | | FORB | |
| **Sulphuryl fluoride** | 2191 | | | | | | | FORB | | FORB | |

*Secretarial Note.—- DGP-WG04-WPs/25 and 30 refer; selected fields only shown.*

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## Chapter 3
## SPECIAL PROVISIONS

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A98 Aerosols with a capacity not exceeding 50 ml, ~~and with a pressure not exceeding 970 kPa at 55° C,~~ containing no constituents subject to these Instructions other than a Division 2.2 gas, are not subject to these Instructions, unless their release could cause extreme annoyance or discomfort to crew members so as to prevent the correct performance of assigned duties.

*Secretarial Note.—- DGP-WG04-WP/37 refers.*

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Axx When dry ice is used as a refrigerant for other than dangerous goods loaded in a unit load device or other type of pallet, the quantity limits per package shown in columns 10 and 12 in Table 3-1 for dry ice do not apply. In such case, the unit load device or other type of pallet must be properly identified and must allow the venting of the carbon dioxide gas to prevent a dangerous build up of pressure.

*Secretarial Note.—- DGP-WG04-WP/24 refers*.

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## Chapter 4

## DANGEROUS GOODS IN LIMITED QUANTITIES

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### 4.3 QUANTITY LIMITATIONS

4.3.1 The net quantity per package must not exceed the quantity specified in column 10 of Table 3-1 against the packing instruction number identified by the prefix letter “Y” in column 9.

4.3.2 The gross mass per package must not exceed 30 kg.

4.3.3 When different dangerous goods are contained in one outer packaging, the quantities of such dangerous goods must be so limited that:

a) for classes other than Classes 2 and 9, the total net quantity in the package does not exceed the value of 1, where “Q” is calculated using the formula:

$$Q = \frac{n_1}{M_1} + \frac{n_2}{M_2} + \frac{n_3}{M_3} + \ldots$$

where $n_1$, $n_2$ etc., are the net quantities of the different dangerous goods and $M_1$, $M_2$ etc., are the maximum net quantities for these different dangerous goods shown in Table 3-1 against the relevant “Y” packing instructions; and

b) for Classes 2 and 9:

1) when packed together without goods of other classes, the gross mass of the package does not exceed 30 kg; or

2) when packed together with goods of other classes, the gross mass of the package does not exceed 30 kg and the total net quantity in the package of goods other than in Classes 2 or 9 does not exceed the value of 1 when calculated according to a) above.

c) carbon dioxide, solid (dry ice), UN 1845 may be packed together with goods of other classes, provided that the gross mass of the package does not exceed 30 kg. The quantity of dry ice does not need to be taken into account in the calculation of the "Q" value. However, the packaging containing the carbon dioxide, solid (dry ice) and the outer packaging must permit the release of carbon dioxide gas.

*Secretarial Note.— DGP-WG04-WP/43 refers.*

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# PART 5

## SHIPPER'S RESPONSIBILITIES

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### Chapter 2

### PACKAGE MARKINGS

*Parts of this Chapter are affected by State Variations CA 4, ES 1, HK 2, MY 6, NZ 1, PK 1, US 1, US 5, US 8, VU 1; see Table A-1*

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### 2.4 MARKING SPECIFICATIONS AND REQUIREMENTS

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#### 2.4.9 Marking of overpacks

a) An overpack must be marked with the word "Overpack", with the proper shipping name, UN number, "limited quantities" (when applicable), and special handling instructions~~, and labelled, as required for packages by Chapter 3,~~ for each item of dangerous goods contained in the overpack unless markings and labels representative of all dangerous goods in the overpack are visible.

b) Where packages containing diagnostic specimens are placed in an overpack, the words "Diagnostic Specimens" appearing on the packages within must be clearly visible, or must be reproduced on the outside of the overpack.

*Secretarial Note.— DGP-WG04-WP/13 refers.*

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## Chapter 3

## LABELLING

*Parts of this Chapter are affected by State Variations CA 1, CA 4, IT 7, JP 9, JP 21, NZ 2, PK 2, US 8, VC 6, VU 5; see Table A-1*

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### 3.2 APPLICATION OF LABELS

3.2.1 The labels required to be displayed on packages of dangerous goods are identified in the Dangerous Goods List for articles and substances specifically listed by name and for articles and substances not specifically listed by name which are covered by generic or n.o.s. entries. ~~Labels required on packages within an overpack must be clearly visible in accordance with the provisions of 3.2.7 and 3.2.11 a) or be reproduced on the outside of the overpack such that the provisions of those paragraphs would be met in regard to the locations of the labels on the overpack.~~

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### 3.3 LABELLING OF OVERPACKS

3.3.1 An overpack must be labelled as required for packages by Chapter 3, for each item of dangerous goods contained in the overpack unless labels representative of all dangerous goods in the overpack are visible.

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 5-24), or pre-printed package orientation labels meeting the same specification as either Figure 5-22 or ISO Standard 780-1985, 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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## Supplement

### Table S-3-2 Dangerous Goods List

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Vinyl bromide,** stabilized | 1085 | | | | | | | | | | |
| **Metacrylonitrile,** inhibited | 3079 | | | | | | | | | | |

*Secretarial Note.—- DGP-WG04-WP/5, selected fields only shown.*

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