UN/SCETDG/18/INF.52

ISSUES ARISING FROM THE REFORMATTING OF THE ICAO TECHNICAL INSTRUCTIONS

TRANSMITTED BY ICAO

Background
The Seventeenth Meeting of the ICAO Dangerous Goods Panel approved proposals for reformatting the Technical Instruction to align them with the UN Recommendations. It had been agreed in principle to adopt the UN text wherever possible or appropriate. There were a number of cases however, where the UN text was not appropriate for the air mode as well as cases where it was deemed that the Technical Instructions text was preferable to the UN text or included aspects not covered in the UN text. In such cases, where the Technical Instructions text could be applicable to other modes, it was agreed that it be suggested the UNCOE adopt the Technical Instructions text.

1) **Exemption procedures**
The meeting suggested that the UNCOE should add the exemption procedures from Part 1;1.1.1 of the Technical Instructions since the UN Recommendations are now being produced in the form of model regulations

1.1.2 In cases of extreme urgency or when other forms of transport are inappropriate or full compliance with the prescribed requirements is contrary to the public interest, the States concerned may grant exemption from the provisions of the Instructions provided that in such cases every effort is made to achieve an overall level of safety in transport which is equivalent to the level of safety provided by these Instructions. The states concerned are the States of origin, transit, overflight and destination of the consignment and the state of the operator.

Note 1.- Refer to 1;2.1 for dangerous goods forbidden for transport by air under any circumstance.

Note 2.- Unless otherwise provided for, exemptions may be granted to permit the carriage of dangerous goods that are identified in columns 9 and 10 or 11 and 12 of the Dangerous Goods List as being forbidden. Exemptions may also concern other parts of the Technical Instructions.

2. Definitions

Passenger aircraft — needs re-examination in relation to the use of the word "consignment" which has a special meaning in the Technical Instructions.

UN Recommendations
Passenger aircraft means an aircraft that carries any person other than a crew member, a carrier's employee in an official capacity, an authorized representative of an appropriate national authority, or a person accompanying a consignment

Technical Instructions
Passenger aircraft. An aircraft that carries any person other than a crew member, an operator's employee in an official capacity, an authorized representative of an appropriate national authority, or a person accompanying a consignment **or other cargo**.

"Or other cargo" has been added at the end to allow for anyone who accompanies a shipment since "consignment" as defined in Annes 18 relates only to dangerous goods.

Consignment. One or more packages of dangerous goods accepted by an operator from one shipper at one time and at one address, receipted for in one lot and moving to one consignee at one destination address

Salvage packing — it is suggested to remove redundant text to align with the Technical Instructions.

Salvage packagings are special packagings **conforming to the applicable provisions of these Regulations** into which damaged, defective or leaking dangerous goods packages, or dangerous goods that have spilled or leaked, are placed for purposed of transport for recovery or disposal.

Explosive article, explosive substance, pyrotechnic substance — it is suggested to relocate these definitions from 2.1.1.3 to Chapter 1.2 of UN Recommendations.

flash point — it is suggested that the Technical Instructions definition be adopted

Flash point. The lowest temperature of a liquid at which flammable vapour is given off in a test vessel in sufficient concentration to be ignited in air when exposed momentarily to a source of ignition.
Note.- Some test methods are listed in 2.3.3.

3. Classification of substances with multiple hazards

It is suggested that the UNCOE adopt the layout of the Technical Instructions Precedence of Hazards Table i.e. include reference to **Class or division and Packing Group**

It is suggested that Note 3 in UN 2.0.3 is regulatory in nature and should be included in the text of the paragraph as in the Technical Instructions.

Note 3.-Except for substances or preparations meeting the criteria of Class 8 having an inhalation toxicity of dusts and mists (LC_{50}) in the range of Packing Group I, but toxicity through oral ingestion or dermal contact only in the range of Packing Group III or less, which shall be allocated to Class 8.

4. Dangerous goods list

The DGP identified a number of areas where the UNCOE should be asked to reconsider their text, as follows:

a) deletion of the last sentence of 3.1.1.2;

Some collective entries may be of the "generic" or "not otherwise specified" type provided that the regulations contain provisions ensuring safety, both by excluding extremely dangerous goods from normal transport and by covering all subsidiary risks inherent in some goods.

b) moving of part of the preamble of Appendix A into paragraph 3.1.2.6; and

Substances or articles not mentioned specifically by name in the Dangerous Goods List in Chapter 3.2 must be classified in accordance with 3.1.1.2. Thus the name in the Dangerous Goods List which most appropriately describes the substance or article shall be used as the Proper Shipping Name. The main generic entries and all the N.O.S. entries given in the Dangerous Goods List are listed ~~below~~ in Appendix A. This proper shipping name shall be supplemented by the technical name when special provision 274 has been assigned to the entry in Column 6 of the Dangerous Goods List.

c) inclusion of 2;11.2.3 from the Technical Instructions into the UN Recommendations.

11.2.3 Where there is any doubt as to whether a non-listed article or substance is transmitted for transport by air, or under what conditions, the shipper and/or operator must consult an appropriate specialized agency.

5. Special provisions

In the Technical Instructions, special provision A69 applies to **Gallium** (UN 2803), **Krypton compressed** (UN 1056) and **Mercury** (UN 2809).

A69 Articles, each containing not more than 100 mg of mercury, gallium or other inert gas and packaged so that the quantity of mercury, gallium or inert gas per package does not exceed 1 g, are not subject to these Instructions when carried as cargo.

It is suggested that the UN Recommendations contain a similar provision on the basis that it could be used intermodally It is noted that the Technical Instructions presently only include Krypton and that other inert gases could also be referenced. (**Helium** (UN 1046), **Neon** (1065), **Argon** (UN 1006), **Xenon** (UN 2036))

6. Limited quantities

Paragraph 5.4.1.1.8 of the UN Recommendations states " ....the words "limited quantity" or "LTD QTY"shall be included in the description of the consignment." This is similar to that in 4;4.1.3 e), although the UN Recommendations had no parallel to the "Y" prefix i.e. a packing instruction prefixed with the letter "Y" indicates a packing instruction for limited quantities of dangerous goods. It was noted that work was going on in conjunction with the UNCOE on producing a multi-modal transport document. In the circumstances, it was decided not to change the Technical Instructions but to bring the subject to the UNCOE's attention.

7. Excepted packages of radioactive material by mail

It was noted that the UN Recommendations require documentation to accompany mail shipments of excepted radioactive material, but the Technical Instructions do not. It was agreed not to align the Technical Instructions with the UN Recommendations and to inform the UNCOE.

2.7.9.1 Requirements and controls for transport of excepted packages
...the applicable requirements specified in .....5.4.1.1.7.1(c)

5.4.1.1.7.1(c)
The consignor shall include in the transport documents with each consignment .....
(h) the United Nations number assigned to the material preceded by the letters "UN"....

8. Diagnostic specimens

The quantity limits for diagnostic substances permitted in paragraph 2:6.5.6 of the Technical Instructions were increased to not more than 500 ml for the primary receptacle and not more than 4L per outer packaging in 1995 following consultation with industry, recognizing that the need to transport diagnostic specimens without delay frequently necessitates air transport. These limits were retained at the last DGP meeting and it is recommended that these higher limits be adopted. It is noted that the packaging must be capable of passing a drop test of not less than 1.2 m.

9. Closure of packagings

The Technical Instructions contains a provision concerning the closure of packagings (4;1.1.4). This was developed to address a known problem for air transport and it is suggested that the UN Recommendations should have a similar provision.

1.1.4 The body and the closure of any packaging must be so constructed as to be able adequately to resist the effects of temperature and vibration occurring in normal conditions of transport. Stoppers, corks or other such friction-type closures must be held securely, tightly and effectively in place by positive means. The closure device must be so designed that it is unlikely that it can be incorrectly or incompletely closed, and must be such that it may be checked easily to determine that it is completely closed.

10. Life-saving appliances, self-inflating (UN 2990)

Packing Instruction 905 in the Technical Instructions lists more dangerous goods which can be found in **Life-saving appliances, self-inflating** (UN 2990) than does UN Packing Instruction 905 and UN Special Provision 296. It is suggested that the UN Recommendations be aligned with the list in Packing Instruction 905

UN 296
These articles may contain:
(a) Division 2.2 compressed gases;
(b) Signal devices (Class 1) which may include smoke and illumination signal flares; signal devices must be packed in plastic or fibreboard inner packagings;
(c) Electric storage batteries;
(d) First aid kits; or
(e) Strike anywhere matches.

UN PI 905
.....
c) Electric storage batteries (Class 8) and lithium batteries (Class 9) shall be disconnected or electrically isolated and secured to prevent any spillage of liquid; and
d) Small quantities of other dangerous substances (for example in Classes 3, 4.1 and 5.2) shall be packed in strong inner packagings.

Technical Instructions PI 905:
....
c) small quantities of flammable substances, corrosive solids and organic peroxides (Class 3, Class 8, Division 4.1 and 5.2), which may include a repair kit and not more than 30 strike-anywhere matches. The organic peroxide may only be a component of a repair kit and the kit must be packed in strong outer packaging.

11. Dry ice

UN special provision 297 contains provisions for the shipment of dry ice on aircraft including a limit of 200 kg per cargo hold. The Technical Instructions provisions contained in Packing Instruction 904 and 5;2.11 had stood the test of time and it was agreed to request the UNCOE to use the TI provisions

UN SP 297
For each shipment by air exceeding 2.3 kg per package, advance arrangements shall be made between the shipper and each carrier. Not more than 200 kg of solid carbon dioxide may be transported in any one cargo compartment or bin on any aircraft except by specific and special written arrangement between the shipper and the aircraft operator.....

Technical Instructions PI 904
.....in packaging designed and constructed to permit the release of carbon dioxide gas to prevent a build-up of pressure that could rupture the packaging. **Arrangements between shipper and operator(s) must be made for each shipment, to ensure that ventilation safety procedures are followed.**. The dangerous goods transport document.....

5;2.11 LOADING OF DRY ICE
Dry ice (carbon dioxide, solid) when shipped by itself or when used as a refrigerant for other commodities, may be carried provided the operator has made suitable arrangements dependent on the aircraft type, the aircraft ventilation rates, the method of packing and stowing, whether animals will be carried on the same flight and other factors. The operator must ensure tha ground staff are informed that the dry ice is being loaded or is on board the aircraft.
Note.- For arrangements between the shipper and the operator see Packing Instruction 904.

12. Pressure test

In 7;4.5.4 of the Technical Instructions concerning the pressure test for Packing Group I material packaging, reference is made to liquids, whereas paragraph 6.1.5.5.5.of the UN Recommendations refer to substances. Liquids appears to be more appropriate and it is suggested that this be adopted.

4.5.4 In addition, packagings intended to contain **liquids** of Packing Group I must be tested to a minimum test pressure of 250 kPa (gauge) for a test period of 5 or 30 minutes depending upon the material of construction of the packaging.

6.1.5.5.5.....intended to contain **substances** of Packing Group I.....

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