



## **DANGEROUS GOODS PANEL (DGP)**

### **TWENTY-FIRST MEETING**

**Montréal, 5 to 16 November 2007**

**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 2009-2010 Edition**

### **DRY ICE**

(Presented by G.A. Leach)

#### **SUMMARY**

This paper seeks the view of the DGP as to whether further information concerning the loading of dry ice should be added to the Technical Instructions.

Action by the DGP is in paragraph 2.

## **1. INTRODUCTION**

1.1 Section 7;4.2 of the ICAO Technical Instructions requires that operators provide information to flight crews, other employees and handling agents that includes details of the location and numbering system of cargo compartments together with the maximum quantity of dry ice permitted in each compartment.

1.2 Section 7;2.11.1 of the ICAO Technical Instructions provides that dry ice 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. No detailed guidance is provided regarding the means of calculating maximum quantities of dry ice.

1.3 A recent study published by the Federal Aviation Administration (FAA) entitled 'Sublimation Rate of Dry Ice Packages in Commonly Used Quantities by the Air Cargo Industry' (DOT/FAA/AM-06/19) identified the CO<sub>2</sub> concentration, aircraft volume, complete air changes per hour and sublimation rate as relevant factors in calculating safe maximum dry ice limits. It is suggested that the following additional factors may also be applicable:

- a) ambient temperatures likely to be encountered prior to loading and in-flight;
- b) contingency for dry ice used as a refrigerant for in-flight catering;
- c) contingency for passengers carrying dry ice in carry-on or checked baggage in accordance with ICAO Technical Instructions 8;1.1 f); and
- d) contingency for the number of serviceable air conditioning packs to reduce in flight and for a reduction to be applied for further flights until made serviceable

## 2. **ACTION BY THE DGP**

2.1 The DGP is invited to *consider* whether the establishment of specific guidance to operators regarding the calculation of maximum safe quantities of dry ice should be added to the next biennium of work to be undertaken.:

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