



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
MEETING OF THE WORKING GROUP OF THE WHOLE**

Abu Dhabi, United Arab Emirates, 7 to 11 November 2010

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 2013/2014 Edition

2.7: Part 7 — Operator's Responsibilities

CARRIAGE OF CRYOGENIC LIQUIDS

(Presented by M. Rogers)

SUMMARY

This working paper seeks input from the working group as to whether additional operator requirements for cryogenic liquids are warranted.

Action by the DGP-WG is in paragraph 2.

1. INTRODUCTION

1.1 On 3 November 2009, Boeing published a service letter outlining recommended practices for the carriage of cryogenic liquids (e.g. liquid nitrogen, liquid helium, etc.) aboard Boeing aircraft. Cryogenic liquids present two hazards in transportation; in the event of a spill, the extremely low temperatures of the liquids can damage neighboring equipment, and the resulting gas can pose an asphyxiation hazard to animals and persons. The Boeing service letter recommends that cryogenic liquids be transported in only the aft or bulk cargo compartments, in closer proximity to the outflow valve. Boeing recommends not transporting cryogenic liquids in the forward cargo compartment, because leaking gasses could enter the recirculation system and enter the passenger cabin. Furthermore, Boeing recommends that cryogenic liquids not be placed near cargo heat temperature sensors or switches in the sidewall and floors.

1.2 Initial indications from other aircraft manufacturers, however, have indicated not all aircraft may be as affected by the location of cryogenic liquids, and that restriction to the aft or bulk cargo compartments is not necessary.

1.3 Nevertheless, it is noted that the Technical Instructions place restrictions on the carriage of dry ice, directing the operator to “make 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 that ground staff are informed that the dry ice is being loaded or is on board the aircraft.” This has resulted in operators establishing cargo compartment limits for dry ice. Similar provisions are not provided for cryogenic liquids.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to consider whether requirements similar to those currently prescribed for dry ice should be added to the operator requirements in the Technical Instructions. Alternatively, the dry ice section could be revised to include cryogenic liquids.

2.2 If the DGP-WG agrees, a paper would be prepared for the next working group meeting.

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