



International Civil Aviation Organization

WORKING PAPER

DGP-WG/LB/1-WP/4

3/2/12

Addendum

3/2/12

**DANGEROUS GOODS PANEL (DGP)
WORKING GROUP OF THE WHOLE ON LITHIUM BATTERIES**

FIRST MEETING

Montréal, 6 to 10 February 2012

Agenda Item 1: Carry-over work from DGP/23

LITHIUM BATTERIES

(Presented by G A Leach)

ADDENDUM

SUMMARY

This working paper expands on paragraph 11.1 of DGP-WG/LB/1-WP/4, regarding the adequacy of fire protection on the main deck of large cargo aircraft.

Action by the DGP-WG/LB: The DGP-WG/LB is invited to consider this working paper in conjunction with DGP-WG/LB/-WP/4.

1. INTRODUCTION

1.1 Paragraph 11.1 of DGP-WG/12-WP/4 proposes that ICAO should review:

- a) the fire suppression abilities of Class E cargo compartments such as those found on the main deck of the B747F; and
- b) whether a crew complement of 2 (both of whom will need to stay their post during an emergency) is adequate for cargo aircraft above a certain size.

This is on the basis that no action taken by the DGP could prevent an accident of the type suffered by the UP B747F aircraft in Dubai in 2010 and consequently other mitigations, which are not specific to dangerous goods, must be considered.

1.2 On 28 November 1987, South African Airways Boeing 747-244BM , a “combi” aircraft crashed off the coast of Mauritius following a severe in-flight fire in the main deck cargo compartment.

1.3 The full accident report is at:

<http://www.caa.co.za/0F1E748E-3761-4CB9-A212-6FA0516A7B5B/FinalDownload/DownloadId-E452046DC75EC53C8CCFA87A65DBB43E/0F1E748E-3761-4CB9-A212-6FA0516A7B5B/resource%20center/accidents%20&%20incid/reports/OldReports/Final%20Report%20ZS-SAS.pdf>

1.4 The cause of the fire was the subject of much conjecture and has never been definitively stated but the accident highlighted the shortcomings of Class B cargo compartments. As a result, FAA Airworthiness Directive AD 93-07-15 was published, which provided options to improve the situation, including requiring:

- a) Class B cargo compartments to be modified to Class C standard i.e. by fitting a fire extinguishing system controllable from the flight deck; or
- b) The use of fire proof unit load devices; or
- c) The use of fire blankets over pallets; or
- d) Provision of fire fighting equipment for the intervention by a crew member, including protective clothing and 120 minutes of protective breathing.

The requirements for Class B and E cargo compartments are similar, the differences being that a Class B compartment has sufficient access for a crew member to access any part of it with a hand held fire extinguisher, whilst a Class E compartment has means of controlling the ventilating air flow from the flight deck. It is queried why the crew of a cargo aircraft should not be afforded a similar level of protection as the crew and passengers of a “combi” aircraft, particularly when one considers a cargo aircraft can carry considerably greater quantities of cargo and consequently greater quantities of dangerous goods, both declared and undeclared. It is suggested these factors, amongst others, should be considered in any review.

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