



WORKING PAPER

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

Montréal, 15 to 19 October 2012

Agenda Item 4: Development of recommendations for amendments to the *Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (Doc 9481)* for incorporation in the 2015-2016 Edition

EMERGENCY RESPONSE AND PORTABLE ELECTRONIC DEVICES

(Presented by M. Paquette)

This paper proposes to modify the fourth step in the recommended procedure in case of fire involving a portable electronic device found in the *Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (Doc 9481)*.

Action by the DGP-WG is in paragraph 2.

1. INTRODUCTION

1.1 Passengers and operators may carry on board portable electronic devices containing lithium metal or lithium ion cells or batteries and spare lithium batteries for such devices provided that the batteries meet the provisions of Part 8;1.1.2 s).

1.2 Air operators refer to the *Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (Doc 9481)* for developing procedures for portable electronic devices in case of a lithium battery fire. Some air operators copy these emergency procedures word-for-word in their operations manual. Their employees must follow those procedures when incidents occur.

1.3 Section 3.4, Amplified Cabin Crew Checklist for Dangerous Goods Incidents in the Passenger Cabin during Flight, contains a procedure in the case of fire involving a portable electronic device. This procedure contains the instruction “do not move device”. This instruction may not be appropriate in all circumstances. There are thermal and possible chemical hazards involved in moving a portable electronic device involved in a fire. However, not moving it could represent a risk in itself. For instance, if an Electronic Flight Bag (or any other device containing lithium batteries) ignited in the flight deck, the pilots would likely want the device removed immediately to prevent any damage to electronic instruments from flames, smoke and water (or any other firefighting agent). If the device

ignited in the passenger cabin, it should be moved away from the passengers, flight deck, emergency exits or aisles, if possible.

1.4 Additional instructions should be included to specify where the portable electronic device should be stowed or moved to and the safety equipment needed to move it.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to consider revising the step “DO NOT MOVE DEVICE” (see appendix to this working paper) as the inability to move the device could create an additional safety hazard.

APPENDIX

Section 3

EXAMPLES OF DANGEROUS GOODS
INCIDENTS CHECKLISTS

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3.4 AMPLIFIED CABIN CREW CHECKLIST FOR DANGEROUS GOODS INCIDENTS
IN THE PASSENGER CABIN DURING FLIGHT

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IN CASE OF FIRE INVOLVING A PORTABLE ELECTRONIC DEVICE

USE STANDARD PROCEDURE / OBTAIN AND USE FIRE EXTINGUISHER

Standard emergency procedures must be used to deal with any fire. Although Halon has been shown to not be effective against lithium metal fires, Halon will be effective in fighting the subsequent fire of surrounding materials, or in fighting a lithium ion battery fire.

REMOVE EXTERNAL ELECTRICAL POWER FROM DEVICE (IF APPLICABLE)

A battery has a higher likelihood of catching fire through thermal runaway during or immediately following a charging cycle, although the effects of thermal runaway may be delayed for some period of time. By removing external power from the device, it will be assured that additional energy is not being fed to the battery to promote a fire.

**DOUSE DEVICE WITH WATER (OR OTHER NON-FLAMMABLE LIQUID)
TO COOL CELLS AND PREVENT IGNITION OF ADJACENT CELLS**

If available, a water extinguisher should be used to cool the cells in a battery that have ignited, preventing the spread of heat to adjacent cells. If a water extinguisher is not available, any non-flammable liquid may be used to cool the cells and device.

**UNLESS CREATING AN ADDITIONAL SAFETY HAZARD
DO NOT MOVE DEVICE**

A battery pack involved in a fire has been shown to reignite and emit flames multiple times as heat is transferred to other cells in the pack. It is preferable to cool the device using water (or other non-flammable liquid); injuries may occur if the device reignites while it is being moved. If possible, place the device in a metal galley container, cart or empty waste bin container. The hands should always be protected before moving the device with oven gloves or fire-resistant gloves, if available. Gas-tight breathing equipment should always be worn when attending to an incident involving smoke or fire.

**REMOVE POWER TO REMAINING ELECTRICAL OUTLETS UNTIL THE
AIRCRAFT'S SYSTEM CAN BE DETERMINED TO BE FREE OF FAULTS,
IF THE DEVICE WAS PREVIOUSLY PLUGGED IN**

By removing power to the remaining electrical outlets, it can be assured that a malfunctioning aircraft system does not contribute to additional failures of the passengers' portable electronic devices.

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