International Civil Aviation Organization

DGP-WG/13-WP/61
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WORKING PAPER

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

Montreal 15 – 19 April 2013

Agenda Item 4: Amendments to the *Emergency Response Guidance for Aircraft Incidents involving Dangerous Goods* (Doc 9481) for incorporation in the 2015/2016 Edition

LITHIUM BATTERY INCIDENTS IN THE CABIN — ADDITIONAL GUIDANCE FOR CREW MEMBERS

(Presented by D. Brennan)

SUMMARY

This working paper introduces a draft document developed by the IATA Cabin Safety Task Force to address the potential actions following an incident involving a lithium battery fire in the passenger cabin.

Action by the DGP-WG is in paragraph 2.

1. INTRODUCTION

1.1 In response to requests from member airlines, the IATA Cabin Safety Task Force (CSTF) has been working on the development of standard operating procedures for cabin and flight crew on the actions to be taken in the event of a fire in the aircraft from a lithium battery in portable electronic equipment.

1.2 The basis for this work was the content of Section 3.4 of the *Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods* (red book) which had been expanded to include specific actions in dealing with a fire in electronic equipment.

1.3 The CSTF however identified that there was a need to develop some recommendations for the post-incident process to provide some standard guidance on what should happen to the device and lithium battery that had been involved in a fire.

1.4 The CSTF has now developed this material to the stage where airlines are looking to incorporate procedures into operational documentation. Prior to distributing these recommendations, the

CSTF is seeking the view of the DGP-WG on the draft procedures which are included in the appendix to this working paper.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to review and comment on the draft post-incident procedures in the appendix to this working paper.

2.2 The DGP-WG is also invited to consider if these procedures or a sub-set of the procedures may be appropriate for inclusion in the 2015-2016 Edition of the red book. If there is support for this, a working paper will be brought forward to DGP/24.

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APPENDIX

POST-INCIDENT OFFLOADING PROCEDURES: LITHIUM BATTERY FIRE IN PASSENGER CABIN

A portable electronic device or lithium battery that has been involved in a fire or smoke event is not permitted in either passenger baggage or in cargo unless the lithium battery(ies) **have been removed from the device**. Where the lithium battery(ies) cannot be removed from the device then the portable electronic device is forbidden in air transport.

In accordance with Special Provision A154: Lithium batteries identified by the manufacturer as being defective for safety reasons, or that have been damaged, that have the potential of producing a dangerous evolution of heat, fire or short circuit are forbidden for air transport.

Damaged lithium batteries may only be shipped as cargo under an exemption. An exemption is required from the State of origin, State of destination, State of transit, if applicable, State of the operator, as well as the States of overflight. The device may be required to be classified as waste and additional regulations could apply which would restrict international transport. In addition, the local Civil Aviation Authority (CAA) should be advised of the incident as they might like to retrieve it for investigation purposes. The Airport Operator may already have procedures in place for the disposal of dangerous goods. N**ote: Batteries should never be incinerated.**

Important

- Never return a device that has been involved in an incident to a passenger while still on board the aircraft.
- Never allow a device that has been in an incident to travel onwards unless it has been rendered safe by removal of the lithium battery(ies).
- Remove the device from the aircraft at the first point of landing. Reason: some battery cells that were damaged may still be charged and affected and could potentially go into thermal runaway.
- ***If a passenger wants to retrieve data and requests for the device to be returned to them:*** If the battery has been taken out of the device, then this separates the battery from the hazard. The Operator could return the device (minus the battery) to the person. *However*, some CAA's currently prohibit this. It is important to confirm with the Civil Aviation Authority of the State of the Operator and the State in which the incident occurred prior to returning a device to a passenger.

Sample Best practices

Contained Fire - ARRIVAL

- Advise ATC
- Advise Company (e.g. System Operation Control)
- Medical services to be alerted if there is evidence of a medical problem*, e.g. burns, smoke inhalation*

- The flight deck to ensure the maintenance engineer is available to meet the aircraft on arrival
- Cabin crew to identify the container that contains the device/battery
- Engineer to take to the device/battery to the local maintenance unit at the airport, and place the device/battery in quarantine while awaiting the arrival of investigative authorities
- Coordinate with the local CAA and Airport Operator (as applicable)for the retention of the device/battery by the CAA for investigation and analysis to help establish the cause of the fire and failure of the device
- An entry must be made in the technical log book
- Group/Flight safety to initiate a non-technical internal investigation
- Items will not be returned to the passenger until the investigation has been completed by the investigative authorities

The device manufacturer may want the device so that they can conduct a failure analysis to determine the cause

Uncontained fire - ARRIVAL

- Advise ATC
- Advise Company (e.g. System Operation Control)
- Aircraft Rescue and Fire Fighting (ARFF) services to be alerted with the assistance of the Air Traffic Controller (Note: Rescue Fire Fighting Services or Crash Fire Rescue (CFR) are also terms interchangeably used depending on global location
- Alert Medical services to be on stand by
- The flight deck to ensure the maintenance engineer is available to meet the aircraft on arrival
- Cabin crew to identify the device/item
- Cabin crew to identify the container that contains the device/item and if the thermal runway has reactivated
- Aircraft Rescue and Fire Fighting (ARFF) services to contain the fire
- Aircraft Rescue and Fire Fighting (ARFF) services/Engineer to remove the item when the fire is completely contained and permission for removal has been given from the Aircraft Rescue and Fire Fighting (ARFF) services
- Engineer to take the device/battery to the maintenance unit at the airport, and place the device/battery in quarantine while awaiting the arrival of investigative authorities
- Coordinate with the local CAA and Airport Operator for the retention of the device/battery by the CAA for investigation and analysis to establish cause of the fire and failure of the device
- An entry must be made in the technical log book
- Group/Flight safety to initiate a non-technical internal investigation
- Items will not be returned to the passenger until the investigation has been completed by the investigation authorities

- The device manufacturer may want the device so that they can conduct a failure analysis to determine the cause

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