DANGEROUS GOODS PANEL (DGP)

TWENTY-FIFTH MEETING

Montréal, 19 to 30 October 2015

Agenda Item 5: Development of a comprehensive strategy to mitigate risks associated with the transport of lithium batteries including development of performance-based packaging standards and efforts to facilitate compliance

PROHIBITING THE TRANSPORT OF LITHIUM ION BATTERIES ON PASSENGER AIRCRAFT

(Presented by the International Coordination Council for Aerospace Industries Associations (ICCAIA))

SUMMARY

This information paper supports the proposal to prohibit the transport of lithium ion batteries on passenger aircraft until such time as safer methods of transport are established and followed presented in DGP/25-WP/24.

This working paper is in follow up to the one presented by the International Coordination Council for Aerospace Industries Associations (ICCAIA) and the International Federation of Airline Pilots' Associations (IFALPA) at the last DGP-WG meeting in April 2015 (DGP-WP/15-WP/4).

1. INTRODUCTION

1.1 The supported working paper (DGP/25-WP/24) provides formal changes to the Technical Instructions consistent with the proposal made by the International Coordination Council for Aerospace Industries Associations (ICCAIA) in cooperation with the International Federation of Air Line Pilots' Associations (IFALPA) during the last DGP working group meeting (DGP-WG/15-WP/4) to prohibit the transport of lithium ion batteries on passenger aircraft until such time as safer methods of transport are established and followed. During that meeting the DGP was not able to achieve a consensus on the proposal and panel members asked for more specifics on the definition of high density as well as specific proposed changes to the current edition of the Technical Instructions. The group decided to convene a working group to draft packaging performance standards for the safe transport of lithium batteries as cargo. Ultimately, a third international multidisciplinary lithium battery transport coordination meeting was organized and met in the summer of this year, which provided a high level description of the threats such a packaging standard should address.

1.2 ICCAIA informed the last DGP working group meeting (DGP-WG/15) about the very limited fire protection capabilities of current cargo compartment standards against a fire involving high density quantities of lithium batteries packaged in accordance with the existing regulations whereby “high density” describes a quantity of lithium battery accumulation which has the potential to overwhelm the cargo compartment fire protection features; the impact of different characteristics of the batteries, cargo compartments, and loading configurations make it still very difficult to define a quantity limitation that is applicable at the aircraft level for all situations. It is the position of the broad aviation community (e.g. ICCAIA, regulatory authorities, IFALPA, cargo operators) that the development of mitigation means at the packaging level, considering the aircraft cargo environment, is currently the only reasonable way to allow the safe transport of lithium batteries as cargo. The following recommendations were proposed for further action by the panel members:

a) that appropriate packaging and shipping requirements are established to more safely ship lithium ion batteries as cargo on passenger aircraft;

b) that high density packages of lithium ion batteries and cells (UN 3480) not be transported as cargo on passenger aircraft until such time as safer methods of transport are established and followed; and

c) that appropriate packaging and shipping requirements are established to more safely ship lithium metal and lithium ion batteries as cargo on freighter aircraft.

1.3 In the interim between the last DGP working group meeting and the Third International Multidisciplinary Lithium Battery Transport Coordination Meeting, the FAA William J. Hughes Technical Center established a test setup (reference: http://www.fire.tc.faa.gov/ppt/1psi_vent_gas_tests_6.pptx) to get a better indication for what would constitute “high density”. The results showed the definition for high density to be very sensitive. Scenarios with between three and ten 18650 lithium ion batteries have the potential to result in damages to the integrity of the cargo compartment liners, negating the fire protection features of the aircraft.

2. DISCUSSION

2.1 With the known limitations of the aircraft cargo fire protection systems performance against a cargo compartment fire involving a high density of lithium batteries, we support the proposal in DGP/25-WP/24 to prohibit the transport of lithium ion batteries on passenger aircraft until such time as safer methods of transport are established and followed.

2.2 It is forecasted that the production rate and energy densities of lithium batteries will continue to increase. The increasing hazard condition to transport by air cargo and the current slow progress towards the definition of a packaging performance standard that will mitigate the hazard, has led ICCAIA with consideration of the existing safety issue to the conclusion that the proposal in DGP/25-WP/24 is the only way forward for the near and mid-term to come to an acceptable level of safety in the air transport mode.

2.3 ICCAIA would like to make it clear that the prohibition on the transport of lithium ion batteries on passenger aircraft should be withdrawn when a proper packaging performance standard is established and followed.

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