



DANGEROUS GOODS PANEL (DGP)

TWENTY-EIGHTH MEETING

Virtual, 15 to 19 November 2021

Agenda Item 4: Managing safety risks posed by the carriage of lithium batteries by air (Ref: Job Card DGP.003.03)

REPORT OF THE DANGEROUS GOODS PANEL WORKING GROUP ON ENERGY STORAGE DEVICES (DGP-WG/ENERGY STORAGE DEVICES)

(Presented by the DGP-WG/Energy Storage Devices)

SUMMARY

This information paper presents a summary of the activities of the DGP-WG/Energy Storage Devices.

1. INTRODUCTION

1.1 The DGP created the working group on energy storage devices to progress the work identified in Air Navigation Commission (ANC) job card DGP.003.03 mitigating safety risks posed by the carriage of lithium batteries by air. The working group met three times in 2021.

1.2 Job card DGP.003.03 identifies the following broad areas for the working group:

- a) performance-based packaging standard for lithium batteries;
- b) additional operational controls to mitigate aviation-specific risks posed by lithium batteries including:
 - 1) any information defined via job card FLTOPSP.043 as necessary to the conduct of safety risk assessments for carriage of cargo including dangerous goods;
 - 2) a mechanism to identify and communicate specific hazards associated with different battery types;
 - 3) a mechanism to ensure transparency of all shipments, including those not subject to full regulation (Section II batteries);

- c) provisions to mitigate safety risks posed by lithium batteries packed with or contained in equipment;
- d) simplified provisions to facilitate full compliance; and
- e) provisions which provide for greater granularity with respect to classification of lithium batteries developed through coordination with the UN ECOSOC Committee of Experts.

1.3 DGP-WG/Energy Storage Devices prioritized work on the performance based packaging standard for lithium batteries, a review of the Technical Instructions applicable to lithium batteries on ability of an operator to comply with Annex 6, Part I, Chapter 15, and provisions for the transport and use of data loggers and cargo tracking devices. Other work items including the hazard based classification of lithium batteries currently underway with the UN Sub Committee of Experts will take more time to mature.

1.4 Regarding the SAE packaging performance-based standard for lithium batteries, the group held preliminary discussions on how the standard might be implemented, whether in the Technical Instructions and/or the Supplement. Many expressed the view that the standard contained many variables to achieve compliance that would be best verified by the competent authority through an approval process, whilst others expressed the need to have a standard within the Technical Instructions to ensure consistent application of an appropriate level of safety. It was agreed that regulatory oversight would need to be in place to give the entities in the supply chain confidence that the package meets the standard, however there was no consensus on a preferred path forward.

1.5 The DGP-WG/Energy Storage Devices considered the current Technical Instructions applicable to lithium cells and batteries that comply with Section II of Packing Instructions 965 and 968 and the impact of these provisions on the ability of an operator to comply with Annex 6, Part I, Chapter 15. It was noted that Section II provisions were designed to permit packages of smaller capacity and/or quantities of lithium batteries to move through the air transport system without intervention of the operator. While this is by design, this also presents a challenge to the operator in collecting the information required to conduct risk assessments for lithium battery consignments outlined in Annex 6 and Annex 19. The working group discussed the potential impacts of eliminating the Section II provisions including training, packaging, and operational impacts. There was a general acknowledgement that eliminating the Section II provisions would help operators conduct their safety risk assessments; therefore the working group expressed support for the deletion of Section II from Packing Instructions 965 and 968. However, the implications of such an action on shippers should be discussed further.

1.6 It was previously identified during discussions in this working group and the DGP that data loggers and cargo tracking devices are not fully addressed in the ICAO transport system. While DGP/27 identified controls for data loggers and cargo tracking devices including compliance with operational standards for electromagnetic interference, assurance the devices do not produce excessive heat, and specific battery size limits, this may not address the harsh environment to which these devices are exposed and the battery size limits while appropriate for packaged cargo, may not be appropriate for these devices. It was recognized that the use of data loggers and cargo tracking devices during transport whether in the package, attached to or integrated into unit load devices, overpacks or packaging has become a common practice and standards that exist solely in the Technical Instructions are not sufficient to address all concerns related to this activity. The transport of data loggers/cargo tracking devices containing lithium batteries requires consideration from both a dangerous goods perspective and a flight operations or airworthiness perspective.

1.7 It was noted that the battery size and chemistry vary depending on the capabilities required and the manufacturer of the devices. Further, acceptance procedures vary by airline and require individual evaluations. Guidance for both shippers and operators is needed to facilitate review and acceptance of such devices consistent with safety risk assessments.

2. **RECOMMENDATIONS**

2.1 DGP-WG/Energy Storage Devices recommends that the DGP:

- a) consider how the SAE G27 standard could be adopted by ICAO and necessary oversight mechanisms to effectively implement the standard;
- b) consider removing the Section II provisions in Packing Instructions 965 and 968; and
- c) consider the text related to data loggers agreed to at DGP/27 and recommend the Specific Working Group on Safe Carriage of Goods create a job card to address data loggers and cargo tracking devices.

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