



WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

THIRTIETH MEETING

Montréal, Canada, 6 to 10 October 2025

Agenda Item 4: Managing safety risks posed by the carriage of energy storage devices by air (*Ref: Job Card DGP.003.05*)

DGP-WG/17 PROPOSAL RELATED TO POWER BANKS

(Presented by the Secretary)

SUMMARY

This information presents an extract from the 2017 DGP Working Group Meeting related to restrictions for power banks carried by passengers and crew. The amendment was agreed by the panel and recommended for incorporation in the 2017-2018 Edition of the Technical Instructions by way of an addendum. The Air Navigation Commission supported the amendment, but the panel realized that there would be a consequential impact should it be incorporated in the Technical Instructions because they would also impact the operator exceptions in Part 1;2.2. The information paper also presents an ANC job card that was subsequently assigned to the DGP. It was later superseded by a job card assigned to the Flight Operations Panel Safe Carriage of Goods Specific Working Group (FLTOSP-SCG-SWG). Nevertheless, the original job card contains information for consideration during discussions on safety risks associated with carriage of power banks and lithium battery powered electronic devices by passengers and crew (see DGP/30-WP/34).

APPENDIX A

EXTRACT FROM DGP-WG/17 REPORT

3.5.3.7 Power Packs & Spare Batteries (DGP-WG/17-WP/38)

3.5.3.7.1 A number of incidents involving power banks had been reported in the cabin. An amendment aimed at mitigating the risks they posed was therefore proposed.

3.5.3.7.2 An analysis of reported incidents in one State identified power banks as one of the top “least wanted” dangerous goods. The member nominated by IATA noted that cabin safety operations experts had done an analysis of incidents in the cabin, and power banks were on the top of the list in terms of frequency of occurrence of thermal runaway. Power banks were being mass produced with limited government oversight or enforcement of product safety standards. It was difficult for operators or passengers to establish whether the batteries and/or cells in the power banks had been subjected to the tests specified in subsection 38.3 of the UN *Manual of Tests and Criteria*, and it was suggested that many were not. The proposer cited aviation’s experience with hoverboards and e-cigarettes as similar areas where there had been a massive leap in cheap, mass-produced articles with limited regulatory or consumer and product safety oversight, where regulators and airlines had had to respond quickly.

3.5.3.7.3 The Technical Instructions required lithium cells or batteries whose primary purpose was to provide power to another device to be carried as spare batteries. Despite this requirement, power banks were still often erroneously considered as personal electronic devices (PEDs). Power banks did not offer the same level of protection that was provided to batteries contained in personal electronic devices. For this reason, the amendment proposed specifically required power banks to be subject to the same additional restrictions as spare batteries. The amendment also proposed prohibiting spare batteries and power banks from being recharged or from being electrically connected or providing power to an external device as a method of risk mitigation. The proposal did not affect the ability to use aircraft power points to power PEDs.

3.5.3.7.4 While there was strong support for the amendment in principle, some suggested it would be difficult if not impossible to enforce. In response to queries as to why the additional restrictions were not applied to spare batteries exceeding a watt-hour rating of 100 Wh, it was explained that this was intentional as such batteries were only permitted with the approval of the operator. It was considered more appropriate to leave it to the operator to decide whether to permit the carriage of such items and, if so, whether they should be permitted for use during flight so as not to preclude a passenger from doing so when an operator considered it to be justified and safe. Some panel members maintained support for extending the additional restrictions to batteries with a watt-hour rating exceeding 100 Wh, but the majority did not based on the explanation provided.

3.5.3.7.5 It was recognized that a preferred solution would be an objective outcome-based approach that would automatically capture emerging technological devices powered by batteries. It was envisaged that a restructured Part 8 might achieve this (see paragraph 3.2.8.7). However, given the risks identified, it was deemed inappropriate to wait until DGP/26 to recommend the amendments for incorporation in the 2019-2020 Edition of the Technical Instructions. Recognizing that the amendments did enhance safety, it was therefore felt an addendum to the 2017-2018 Edition of the Technical Instructions was justified. The Secretary would bring the request for an addendum to the ANC.

APPENDIX B

ANC JOB CARD

**(SUPERCEDED BY SCGSWG.003 (PROCEDURES FOR PREVENTING AND RESPONDING
TO INCIDENTS INVOLVING LITHIUM BATTERIES CARRIED BY CREW, PASSENGERS
AND THE OPERATOR ABOARD THE
AIRCRAFT))**

DGP.006.02 (CANCELLED) Lithium batteries carried and/or used by passengers, crew and the operator	
Source	DGP/26, Recommendation 6/1
Problem Statement	Current measures to mitigate the potential safety risks posed by lithium batteries carried by passengers, crew and the operator on aircraft may not be effective
Specific Details	<p>1. Overview</p> <p>Lithium batteries may be carried by passengers and crew members in carry-on baggage, on the person, or, when contained in the equipment they power*, in checked baggage subject to the provisions of Part 8 of the Technical Instructions. Additionally, lithium batteries and equipment containing them such as electronic flight bags (EFB), personal entertainment devices, and credit card readers may be carried and used aboard the aircraft by the operator in accordance with Part 1;2.2 of the Technical Instructions provided the batteries meet the provisions for dangerous goods carried by passengers and crew in Part 8. These provisions provide various measures intended to mitigate the potential safety risks posed by lithium batteries carried by passengers, crew and the operator. However, thermal runaway events in the cabin and passenger baggage have become an increasingly regular occurrence. This suggests that the existing provisions may not be fully effective at mitigating the potential safety risks. Additionally, the provisions have become increasingly complex over time, increasing the potential to misunderstand and incorrectly implement them. Some of the restrictions, such as only allowing batteries that have passed specific UN tests, may not be realistic to implement since it may be impossible for anyone other than the battery manufacturer to determine this. These implementation difficulties may be contributing to the effectiveness of the mitigation measures. Work on ensuring the safety risks are effectively mitigated to an acceptable level is therefore necessary. Provisions related to lithium batteries and/or electronic devices are contained in several documents and would therefore need to be reviewed. These include:</p> <ul style="list-style-type: none"> a) Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284); b) Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (Doc 9481); c) Annex 6 — Operation of Aircraft; d) Manual of Electronic Flight Bags (Doc 10020); and e) Cabin Crew Safety Training Manual (Doc 10002). <p>There is no single primary expert group that can complete this work. A multidisciplinary approach is necessary to ensure the potential safety risks posed by lithium batteries carried and operated by passengers, crew and the operator are mitigated holistically.</p> <p>2. Additional background information</p> <p>The issue of lithium batteries and lithium battery-powered portable electronic devices (PEDs) carried and/or used by passengers, crew and the operator was raised by the Air Navigation Commission (ANC) during its review of an amendment proposed by the DGP related to power banks (ANC Min 203, 204 and 205) and indirectly through the recommendations of the Multidisciplinary Cargo Safety Group (CSG) (C 212/5) as described below.</p> <p>ANC</p> <p>During its review of the proposed amendment related to power banks, which was later withdrawn because of a potential conflict with operator exceptions for the carriage of dangerous goods in Part 1;2.2, the ANC tasked the Dangerous Goods Panel (DGP) with:</p> <ul style="list-style-type: none"> a) developing meaningful criteria that passengers and staff could realistically apply when carrying PEDs; b) clarifying language used with respect to exceptions for dangerous goods of the operator in Part 1;2.2 to avoid misinterpretation and unintended consequences; c) considering the effects of power bank provisions on operators providing them for use by passengers during flight; d) considering manufacturing requirements and the feasibility of requiring batteries carried by passengers or crew to be subject to UN testing requirements; and e) developing meaningful guidance for States, operational staff and passengers on criteria for carriage of devices on board an aircraft. <p>In developing meaningful criteria, the Commission further suggested that the DGP consider provisions such as requiring that devices:</p> <ul style="list-style-type: none"> a) be professionally manufactured, preferably indicating a trademark and model number; b) be in good repair and free from damage; c) be used in accordance with manufacturer's instructions when carried on the aircraft; d) be switched off completely if carried but not in use (not hibernation); and

	<p>e) be meaningfully labelled with information on watt and amp hours.</p> <p>Recommendations of the CSG</p> <p>The CSG was established to respond to concerns of increased safety risks resulting from security measures which restricted the carriage of PEDs in checked baggage that were introduced by some States in March 2017. The group was tasked with identifying the safety hazards, assessing the associated safety risks, and developing mitigation strategies to reduce the safety risk to an acceptable level. Although alternate measures were introduced to address the security threat, the CSG did identify hazards associated with the carriage of PEDs including the potential for an explosion if personal items containing permitted dangerous goods, such as aerosol cans, are placed in the same checked baggage as a PED. The CSG developed recommendations for addressing the identified hazards (see Report of the Second Meeting of the Multidisciplinary Cargo Safety Group (CSG). The applicable recommendations (as amended by the ANC) are:</p> <p>1) that the DGP evaluate whether the Technical Instructions should be amended to restrict the carriage of PEDs as carry-on baggage unless otherwise approved by the operator;</p> <p>2) that the DGP review the items permitted to be carried by passengers in checked baggage and establish whether certain combinations should be forbidden;</p> <p>3) that the DGP together with the battery manufacturing industry develop a clear definition of what was meant by PEDs; and</p> <p>4) that the AIRP, FLTOPSP and DGP review the issue of operators placing charged PEDs in the cabin for passenger use, utilising the provisions of the Technical Instructions rather than seeking airworthiness certification approval.</p>
Expected Benefits	<p>Improved safety as a result of a reduction in incidents involving lithium batteries carried and/or used by passengers, crew and the operator</p> <p>Reduced operational cost as a result of clear, realistic provisions</p>
Reference Documents	<p>DGP/26 Report (Recommendation 6/5)</p> <p>Report of the Multidisciplinary Cargo Safety Group (CSG) (C-WP/14663)</p> <p>C Min. 212/5</p> <p>ANC Min. 205-3, 4, 5</p> <p>AN-WP/9174</p> <p>DGP-WG/17 Report (paragraph 3.5.3.7)</p> <p>ANC Job cards DGP.003.01, AIRP.012.01</p>
Deliverable Expert Group	Dangerous Goods Panel (DGP)

ID	Document Affected	Description of Amendment proposal or Action	Supporting Expert Group	Status	Expected Dates		
					Delivery Date	Effective	Applicability
9901	Actions	Consider whether it is appropriate to maintain provisions currently in the Technical Instructions for COMAT otherwise classified as dangerous goods but which is required to be aboard an aircraft in accordance with operating regulations or to meet special requirements authorized by the State of the Operator or to be used during flight. If so, consider whether the current methodology of basing the safety of these provisions on restrictions applied to dangerous goods carried by passengers and crew is appropriate. Based on the above, revisions to passenger and crew provisions to carry dangerous goods in Part 8 and to exceptions for dangerous goods of the operator in Part 2;2 may be necessary.	FLTOPSP AIRP SMP	On-schedule	Q4 2019	Jan 2021	Jan 2021
9902	Actions	Review of emergency response procedures related to lithium batteries and PEDs and develop revisions to Doc 9481 if necessary	FLTOPSP AIRP	On-schedule	Q4 2019	Jan 2021	Jan 2021

ID	Document Affected	Description of Amendment proposal or Action	Supporting Expert Group	Status	Expected Dates		
					Delivery Date	Effective	Applicability
9903	Actions	Consider whether provisions in the Technical Instructions for COMAT otherwise classified as dangerous goods but which is required to be aboard an aircraft in accordance with operating regulations or to meet special requirements authorized by the State of the Operator or to be used during flight should be included in Annex 6 and develop revisions if necessary	FLTOPSP	On-schedule	Q4 2019	Jan 2021	Jan 2021
9906	Actions	Review provisions in Doc 10020, Manual of Electronic Flight Bags, to ensure alignment with dangerous goods provisions	FLTOPSP AIRP	On-schedule	Q4 2019	Jan 2021	Jan 2021
9904	Actions	Consider whether provisions in the Technical Instructions for COMAT otherwise classified as dangerous goods but which is required to be aboard an aircraft in accordance with airworthiness requirements or to meet special requirements authorized by the State of the operator should be included in Annex 8.	FLTOPSP AIRP	On-schedule	Q4 2019	Jun 2021	Nov 2021
9905	Actions	Consideration of aircraft limitations with respect to lithium batteries carried aboard an aircraft by the operator for use on the aircraft and develop revisions in Annex 8 if necessary.	AIRP	On-schedule	Q4 2019	Jun 2021	Nov 2021
Status: Superseded		Priority: Medium	Initial Issue Date: 28 Jun 2018	Date Approved by ANC: 13 Jun 2019	Session / Meeting: 211-12		