



FACILITATION PANEL (FALP)

FOURTEENTH MEETING

Montréal, 20 to 24 April 2026

Agenda Item 6: Other Facilitation matters

LITHIUM BATTERY POWERED MOBILITY AIDS

(Presented by the Secretary of the Dangerous Goods Panel (DGP))

SUMMARY

Safety concerns arising from the increasing energy capacity of lithium-ion powered mobility aids and the limited ability to manage thermal runaway events once they occur were the subject of extensive discussions at the Thirtieth meeting of the Dangerous Goods Panel (DGP/30, 6 to 10 October 2026). This working paper provides an overview of the DGP's discussions and invites the Facilitation Panel (FALP) to collaborate with the DGP and other relevant expert groups to ensure the travel needs of persons with reduced mobility are supported while prioritizing safety.

Action by the FAL Panel: The FAL Panel is invited to:

- a) note the safety-risks identified by the DGP regarding the carriage of lithium battery-powered mobility aids described in this working paper;
- b) support the need to address the identified safety risks;
- c) support the proposed amendment to the Technical Instructions, developed by DGP/30 and reproduced in the Appendix to this working paper, as a short-term measure to address airline operators' most significant concerns; and
- d) participate in an inter-panel working group to develop longer-term, harmonized provisions to ensure the travel needs of persons with reduced mobility are supported while prioritizing safety.

1. INTRODUCTION

1.1 Airline operators approached members of the Dangerous Goods Panel (DGP) with concerns regarding safety risks associated with the carriage of lithium battery-powered mobility aids. While operators have a responsibility for the safety of the aircraft and all persons on board, balancing this

responsibility with the accessibility needs and rights of passengers can be challenging. Passengers with reduced mobility may also be affected by inconsistent operator policies.

1.2 Airline operators have expressed specific concerns with the increase in energy capacity of lithium ion batteries that often power mobility devices and the limited ability to manage a thermal runaway event involving these batteries. The DGP established a task force to assess the safety risks and develop recommendations that were considered at the thirtieth meeting of the Dangerous Goods Panel (Montréal, 6 to 10 October 2024) (DGP/30). This working paper provides an overview of DGP's discussions and recommendations. It invites the Facilitation Panel (FALP) to collaborate with the DGP and other relevant expert groups to ensure the travel needs of persons with reduced mobility are supported, while prioritizing safety.

2. DISCUSSION

2.1 Lithium batteries pose a safety risk due to their potential for thermal runaway. Thermal runaway can result in rapid self-heating, fire, intense heat and the release of smoke and hazardous gases. Once initiated, a thermal runaway event may be difficult to contain and can re-ignite, with the potential to propagate to adjacent cells and batteries. As the energy capacity of lithium-ion batteries continues to increase, the potential severity of such events correspondingly increases. A fire involving lithium batteries could exceed an aircraft's fire protection features.

2.2 The provisions of Annex 18 – *The Safe Transport of Dangerous Goods by Air* govern the international transport of dangerous goods by air. They are amplified by the detailed instructions in the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284, Technical Instructions). The Technical Instructions are considered binding on a State by virtue of Standard 2.2.1 of Annex 18, which requires that States take measures to achieve compliance with the detailed provisions in the Technical Instructions. Lithium batteries are classified as dangerous goods and are therefore subject to Annex 18 and the Technical Instructions.

2.3 The Technical Instructions permit the carriage of lithium battery-powered mobility aids by passengers whose mobility is restricted due to disability, health, age, or a temporary mobility impairment, provided that the applicable provisions of Part 8 are met. The Technical Instructions impose a Watt-hour rating limit of 300 Wh for batteries removed from the mobility aid and carried in the cabin, but no limit for those installed and protected in the mobility aid and stowed in the cargo compartment. The absence of a limit for the latter was intended to facilitate travel by persons with reduced mobility, reflecting the battery energy capacities available at the time and the expectation that risks could be mitigated through the protection afforded by the mobility aid and the operator's risk management measures. However, battery technology is allowing higher-capacity batteries to be integrated into the mobility aids, which presents a significant safety risk. Airline operators report seeing mobility aids powered by batteries with Watt-hour ratings of 1440 Wh. Airline operators also report that they often do not receive timely, reliable details from passengers about the mobility aid and the battery that powers it, its condition, and handling and isolation procedures. The absence of this information impacts their ability to ensure safe transport.

2.4 The DGP task force assessed the safety risk through a bowtie analysis and a system-theoretic process analysis (STPA). The assessment identified several weaknesses in the current system that impacted the safe carriage of battery-powered mobility aids on aircraft (see Appendices A and B to the [DGP/30 Report](#) on Agenda Item 4). The task force concluded that robust design and testing standards across the product life cycle represent the most effective proactive mitigation. It emphasized the importance of timely information-sharing and operator procedures to assess mobility aid quality and detect damage. However, recognizing that such measures cannot be implemented immediately, the task force

proposed near-term amendments to the Technical Instructions to address operators' most pressing concerns: the absence of limits on energy capacity for installed batteries and insufficient passenger-provided information to support operator risk management. The DGP supported the STPA outcomes and agreed, subject to stakeholder outreach, that the proposed amendment to the Technical Instructions should be progressed as an initial step, with further holistic work over the next biennium. The proposed amendment to the Technical Instructions is provided in Appendix D to the [DGP/30 Report](#) on Agenda Item 4. It is reproduced in the Appendix to this working paper.

3. DGP/30 RECOMMENDATION

3.1 DGP/30 developed Recommendation 4/1 on managing risks associated with the carriage of lithium battery powered mobility aids on aircraft. The recommendation was supported by the Air Navigation Commission. In summary, the recommendation invites ICAO to:

- a) establish an inter-panel working group between the DGP, Safe Carriage of Goods Specific Working Group of the Flight Operations Panel (FLTOPSP-SCGSWG), Cabin Safety Specific Working Group of FLTOPSP (FLTOPSP-CSSWG) and the Facilitation Panel (FALP) to address vulnerabilities identified through the safety risk assessment and the needs of passengers with reduced mobility; and
- b) establish measures to proactively engage with representatives of persons with reduced mobility, mobility aid manufacturers, airline operators and regulatory authorities to:
 - 1) review and refine, as necessary, the proposed amendments to the Technical Instructions (Appendix D to the DGP/30 Report on Agenda Item 4, reproduced in the appendix to this working paper) with a view to incorporating them into the 2027–2028 Edition through an addendum; and
 - 2) address the identified vulnerabilities while ensuring harmonization with passenger accessibility provisions.

4. ACTION BY THE FAL PANEL

4.1 The FAL panel is invited to:

- a) note the safety-risks identified by the DGP regarding the carriage of lithium battery-powered mobility aids described in this working paper;
 - b) support the need to address the identified safety risks;
 - c) support the proposed amendment to the Technical Instructions, developed by DGP/30 and reproduced in the appendix to this working paper, as a short-term measure to address airline operators' most significant concerns; and
 - d) participate in an inter-panel working group to develop longer-term, harmonized provisions to ensure the travel needs of persons with reduced mobility are supported while prioritizing safety.
-

APPENDIX

AMENDMENT TO THE PROVISIONS IN THE TECHNICAL INSTRUCTIONS FOR PASSENGERS AND CREW TO CARRY LITHIUM BATTERY POWERED MOBILITY AIDS FOR CONSIDERATION DURING STAKEHOLDER ENGAGEMENT

Part 7

OPERATOR'S RESPONSIBILITIES

Chapter 5

PROVISIONS CONCERNING PASSENGERS AND CREW

5.1 DANGEROUS GOODS PERMITTED WITH THE APPROVAL OF THE OPERATOR

5.1.1 The operator must establish criteria and associated operating procedures for approving a passenger or crew member to safely carry dangerous goods that are identified by Part 8 of the Technical Instructions as only being permitted with the approval of the operator. The criteria and associated operating procedures must ensure, to a reasonable certainty, that in the event of a fire involving the dangerous goods, it can be detected and sufficiently suppressed or contained until the aircraft makes a safe landing. The adequacy of the procedures must be demonstrated through a safety risk assessment conducted in accordance with the safety management system.

Note.— Dangerous goods carried on an aircraft as checked baggage are subject to the specific safety risk assessment on the transport of items in the cargo compartment required by Annex 6, Part I, Chapter 15.

5.42 INFORMATION TO PASSENGERS

5.2.1 The operator must establish the requirements for passengers seeking approval for the transport of dangerous goods when so required by Table 8-1 within the operator's conditions of carriage.

5.4.45.2.2 Operators must inform passengers about dangerous goods that passengers are forbidden to transport aboard an aircraft. The notification system must be described in their operations manual and/or other appropriate manuals. If the ticket purchase and/or boarding pass issuance can be completed by a passenger without the involvement of another person, the notification system must include an acknowledgement by the passenger of having been presented with the information. The information must be provided to passengers:

- a) at the point of ticket purchase or, if this is not practical, made available in another manner to passengers prior to boarding pass issuance; and
- b) at boarding pass issuance, or when no boarding pass is issued, prior to boarding the aircraft.

Note.— The information may be provided in text or pictorial form, electronically, or verbally, as described in the operator's manuals.

5.4.25.2.3 An operator or the operator's handling agent and the airport operator must ensure that information on the types of dangerous goods which passengers are forbidden to transport aboard an aircraft is communicated effectively to them. This information must be presented at each of the places at an airport where tickets are issued, boarding passes are issued, passenger baggage is dropped off and aircraft boarding areas are maintained, and at any other location where passengers are issued boarding passes and/or checked baggage is accepted. This information must include visual examples of dangerous goods forbidden from transport aboard an aircraft.

5.1.35.2.4 An operator, of passenger aircraft, should have information on those dangerous goods which may be carried by passengers in accordance with 8;1.1.2 and on the process for seeking the operator's approval for carriage when so required by Table 8-1 made available prior to the boarding pass issuance process on their websites or other sources of information.

...

Part 8

PROVISIONS CONCERNING PASSENGERS AND CREW

...

Chapter 1

PROVISIONS FOR DANGEROUS GOODS CARRIED BY PASSENGERS AND CREW

Parts of this Chapter are affected by State Variations BR 10, MO 3, US 15, VE 9, VE 10; see Table A-1

1.1 DANGEROUS GOODS CARRIED BY PASSENGERS AND CREW

1.1.1 Passengers and crew are forbidden to carry dangerous goods either as or in carry-on baggage, checked baggage or on their person unless the dangerous goods are:

- a) permitted in accordance with Table 8-1; and
- b) for personal use only; and
- c) approved for carriage by the passenger or crew member by the operator, when such an approval is required by Table 8-1.

Note.— The process for assessing and granting the approval of the operator is to be based upon considerations related to flight safety.

...

1.1.2 Except for the criteria for granting operator approval required by 7;5.1; the loading requirements of 7;2.13; information to be provided to employees required by 7;4.2; and reporting provisions of 7;4.4 and 7;4.5, the provisions of these Instructions do not apply to the dangerous goods permitted by Table 8-1 when those dangerous goods are:

- a) carried by passengers or crew for personal use only;
- b) contained in baggage that has been separated from its owner during transit (for example, mishandled baggage such as lost baggage or improperly routed baggage); or
- c) contained within items of excess baggage sent as cargo as permitted by 1;1.1.5.1 h).

...

Table 8-1. Provisions for dangerous goods carried by passengers and crew

Dangerous Goods	Location		Approval of the operator(s) is required	Restrictions
	Checked baggage	Carry-on baggage		
<p>4) Mobility aids (e.g. wheelchairs) powered by:</p> <ul style="list-style-type: none"> – spillable batteries; – non-spillable wet batteries; – dry batteries; – nickel-metal hydride batteries; or – lithium ion batteries 	Yes	(see e))	Yes	<p>a) for use by passengers whose mobility is restricted by either a disability, their health or age, or a temporary mobility problem (e.g. broken leg);</p> <p>b) the passenger should make advance arrangements with each operator and provide information on the type of battery installed and on the handling of the mobility aid (including instructions on how to isolate the battery) information must be provided to the operator(s) in accordance with 7;5.2;</p> <p>c) in the case of a dry battery or nickel-metal hydride battery, each battery must comply with Special Provision A123 or A199, respectively;</p> <p>d) in the case of a non-spillable wet battery:</p> <ul style="list-style-type: none"> i) each battery must comply with Special Provision A67; and ii) a maximum of one spare battery may be carried per passenger; <p>e) in the case of a lithium ion battery:</p> <ul style="list-style-type: none"> i) each battery must be of a type which meets the requirements of each test in the <i>UN Manual of Tests and Criteria</i>, Part III, subsection 38.3; ii) when the mobility aid provides adequate protection to the battery(ies) and they remain installed, the battery(ies) must not exceed a Watt-hour rating of 300 Wh per mobility aid, unless a higher Watt-hour rating is authorized by the operator under the conditions of its approval in accordance with 7;5.2; iii) when the mobility aid does not provide adequate protection to the battery(ies): <ul style="list-style-type: none"> – the battery(ies) must be removed in accordance with the manufacturer's instructions; – the battery(ies) must not exceed a Watt-hour rating of 300 Wh per mobility aid; – the battery terminals must be protected from short circuit (by insulating the terminals, e.g. by taping over exposed terminals); – the battery(ies) must be protected from damage (e.g. by placing each battery in a protective pouch); and – the battery(ies) must be carried in the cabin; and iiii) a maximum of one spare set of battery(ies) with a total Watt-hour rating not exceeding 300 Wh or two spare batteries not exceeding 160 Wh each may be carried. Spare batteries must be carried in the cabin. <p><i>Note. When the lithium battery(ies) remain installed in the mobility aid, there is no Watt hour limit.</i></p>