



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
WORKING GROUP MEETING (DGP-WG/16)**

Montreal, 17 to 21 October 2016

Agenda Item 2: Development of recommendations for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284)* for incorporation in the 2019-2020 Edition

2.8: Part 8 — Provisions Concerning Passengers and Crew

**LIMITS FOR THE TRANSPORT OF LITHIUM BATTERIES
FOR PASSENGERS, CREW, AND OPERATORS**

(Presented by the European Aviation Safety Agency (EASA) and the International Coordination Council for Aerospace Industry Association (ICCAIA))

SUMMARY

When the limits for the lithium batteries of Items 8) and 20) of Table 8-1 of the Technical Instructions were agreed, portable electronic devices (PEDs) expected to be carried by passengers and crew were things such as cell phones or laptops. The exception of Part 1;2.2.1, based on Item 20) of Table 8-1, was intended for items such as credit card readers or electronic flight bags (EFB). In both cases, items used as examples contain only one battery per equipment. New technologies have brought items that contain more than one battery and therefore present a different risk. Therefore, a revision of the limits and/or the provisions related to these items need to be considered.

Action by the DGP: The DGP is invited consider the information provided and decide on the basis for a proposal for the next meeting.

1. INTRODUCTION

1.1 Passengers, following the provisions of Table 8-1 of the Technical Instructions, may carry portable electronic devices as long as the Watt hours (Wh) of its battery do not exceed 100, or the lithium content does not exceed 2 grams, among other restrictions.

1.2 Operators can benefit from the provisions of Part 1;2.2.1 d) of the Technical Instructions (TIs), that is, they can carry lithium battery powered devices and their spare lithium batteries for use on

the aircraft during the flight or series of flights without having to fulfil the provisions of the TIs as long as the battery contained in the device complies with the limits established for the passengers.

1.3 Technology has evolved since the limits were discussed at the DGP. The agreed amendment for the operators intended to allow for the transport of PEDs such as credit card readers, DVD players, PEDs sold on the duty free...etc. Therefore, in approving the limits, it was probably assumed that one item would contain one battery or, at least, items containing more than one battery were not considered at the moment. This can be deduced from the extract of the report ([DGP-WG/08-WP/68](#)) that stated the following:

*“3.2.2 Exceptions for Dangerous Goods of the Operator ([DGP-WG/08-WP/6](#))
3.2.2.1 A proposal to permit operators to transport lithium battery powered devices, such as electronic flight bags, credit card readers, and spare batteries was supported. Although it was agreed that the provisions of Part 1;2.2 could be utilized (subject to approval from the State of the Operator), it was considered preferable to include a new provision in 1;2.2 similar to that which is already permitted for passengers along with an additional provision requiring that the conditions of carriage and use of such devices be included in the operations manual. This would allow for additional controls on the number and size of batteries together with the number of spare batteries relevant to the type and range of aircraft to be specified and approved by the State of the Operator. The proposal was agreed.”*

2. NEW PEDS AND CONSEQUENTIAL NEED FOR CHANGES

2.1 New technologies are bringing along new items that may require a revision to the limits established by the regulations. One example is an “In Flight Entertainment (IFE) function” supportive portable equipment, which is brought on board either to be stowed in, for example, an overhead bin, a trolley, or fitted as a galley insert. The IFE function streams entertainment media content via WiFi to passengers to view on their own PEDs. These portable equipment devices are not part of the approved aircraft configuration, i.e. not part of the type design or a change to the type design, and are therefore considered PEDs that belong to the operator. These items contain several lithium ion batteries inside but, as each battery does not exceed the limit established for the passengers, operators consider that these items fall under the limits of item 20) of Table 8-1 and, therefore, under the exemption of Part 1;2.2.1 d).

2.2 Additionally, the limit that Part 1;2.2.1 d) refers to is not clear, that is, whether it should be 100 Wh or 160 Wh. Whereas it is generally understood that 100 Wh is the intended limit for transport, it may be understood that the limit should be 160 Wh.

2.3 Although the Technical Instructions establish that “Conditions for the carriage and use of these electronic devices and for the carriage of spare batteries must be provided in the operations manual and/or other appropriate manuals as will enable flight crew, cabin crew and other employees to carry out their responsibilities”, it needs to be taken into account that devices containing more than one battery present a different risk than that of a cell phone or laptop, for which the exceptions were intended. Therefore, if the DGP agreed that items containing more than one battery should be allowed to be transported under Part 1;2.2.1, two things would need to be reviewed:

2.3.1 A limit should be established for either the total amount of batteries in the equipment and/or the total Wh/grams, and it should be clarified whether they are considered spares.

2.3.2 Operators should be required to establish conditions for its transport (e.g. stored away from other dangerous goods, in a sufficiently ventilated area, precautions to detect smoke/fire and allow firefighting accessibility...). They should also develop custom made procedures and training for the crew, including emergency response. Additionally, a risk assessment should be done to determine the need for additional mitigation strategies in the cabin when transporting these devices (e.g. suitable extinguishers).

2.4 Same logic applies to medical devices, where the limits present the same uncertainty for passengers.

3. ACTION BY THE DGP

3.1 The DGP is invited to:

- a) discuss whether the limits established in Table 8-1 should be reviewed to clearly include items containing more than one battery and, if so, propose reasonable limits for consideration;
- b) discuss whether further requirements should be included (such as risk assessment or further mitigating measures);
- c) discuss whether the Flight Operations Panel (FLTOPSP) should include provisions in this regard in Annex 6 — *Operation of Aircraft*.

3.2 Taking into account the comments, and should the DGP agree in further discussing, a new proposal will be presented during the next meeting.

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