



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
WORKING GROUP MEETING (DGP-WG/18)**

Montréal, 1 to 5 October 2018

- Agenda Item 1: Harmonizing ICAO dangerous goods provisions with UN Recommendations on the Transport of Dangerous Goods**
- 1.2: Develop proposals, if necessary, for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2021-2022 Edition**

AMENDMENT OF SPECIAL PROVISION A154

(Presented by Sam Bitossi)

SUMMARY

Special Provision A154 applies to lithium batteries identified by the manufacturer as being defective for safety reasons. It is proposed to amend this special provision to align with the recent amendments to Special Provision 376 in Chapter 3.3. of the UN Model Regulations made at the fifty-third session of the UN Sub-Committee of Experts on the Transport of Dangerous Goods on its.

This paper continues from discussions of an amendment proposed at DGP/26 (see paragraph 6.3.9 of the DGP/26 Report) to align Special Provision A154 with Special Provision 376 of the UN Model Regulations.

Action by the DGP: The DGP-WG is invited to review and agree to the draft amendments to Special Provision A154 presented in Appendix A to this working paper, and to recommend for possible inclusion in the 2019-2020 Edition of the Technical Instructions by way of an addendum for safety reasons.

1. INTRODUCTION

1.1 The Report of the Sub-Committee of Experts on the Transport of Dangerous Goods, fifty-third session (ST/SG/AC.10/C.3/106) and subsequent addendum to the report (ST/SG/AC.10/C.3/106/Add.1) is published and available on the United Nations Economic Commission for Europe (UNECE) website (<http://www.unece.org/trans/main/dgdb/dgsubc3/c3rep.html>) and contains an amendment to SP 376 of the 20th edition of the UN Model Regulations.

1.2 This paper takes into account the changes agreed at DGP/26 as shown for SP A154 on Page 2A-39 in the Report of DGP/26 and outlined in section 6.3.9 of the report. <https://www.icao.int/safety/DangerousGoods/Pages/DGP26Report.aspx>

1.3 This paper builds upon discussions of a proposed amendment to Special Provision (SP) A154 at DGP/26 (see paragraph 6.3.9 of the DGP/26 Report) and the published amendments for SP 376 of the Model Regulations contained within document ST/SG/AC.10/C.3/106/Add.1.

1.4 It is important to note that the original changes proposed at DGP/26 were not adopted for the reason given in 6.3.9.2 of the Report, that is, that there were pending changes and discussions at the UN. Changes to the UN Model Regulations are now complete and therefore, SP A154 requires review to align fully with the UN Model Regulations.

1.5 SP A154 currently only forbids damaged or defective lithium cells or batteries if they are identified by the manufacturer of the battery.

1.6 Unlike SP A154, SP 376 does not specify who is required to identify a damaged or defective lithium battery, instead SP 376 includes by way of a note, clarification on the identification process (i.e. an assessment or evaluation based on safety criteria, performed between the shipper and the cell, battery or product manufacturer, or appropriate technical expert).

1.7 SP 376 specifies that the identification of damaged or defective lithium cells or batteries is to be measured against those types which conform to the applicable tests of Section 38.3 of the UN *Manual of Tests and Criteria*.

1.8 SP 376 also provides additional safety critical information designed to assist the shipper in making an accurate assessment, against specific criteria, to determine when a lithium cell or battery is identified as being damaged or defective.

1.9 SP A154, as amended at DGP/26, states:

“Lithium batteries, identified by the manufacturer as being defective for safety reasons, or that have been damaged, that have the potential of producing a dangerous evolution of heat, fire or short circuit are forbidden for transport (e.g. those being returned to the manufacturer for safety reasons or cells or batteries that cannot be diagnosed as damaged or defective prior to transport).”

1.10 SP 376 of the UN Model Regulations (new amendment incorporated) states:

“Lithium ion cells or batteries and lithium metal cells or batteries identified as being damaged or defective such that they do not conform to the type tested according to the applicable provisions of the manual of tests and criteria shall comply with the requirements of this special provision.

For the purposes of this special provision, these may include, but not limited to:

- Cells or batteries identified as being defective for safety reasons;
- Cells or batteries that have leaked or vented;
- Cells or batteries that cannot be diagnosed prior to transport; or

— Cells or batteries that have sustained physical or mechanical damage.

NOTE: In assessing a cell or battery as damaged or defective, an assessment or evaluation should be performed based on safety criteria from the cell, battery or product manufacturer or by a technical expert with knowledge of the cell's or battery's safety features. An assessment or evaluation may include, but is not limited to, the following criteria:

- *Acute hazard, such as gas, fire, or electrolyte leaking;*
- *The use or misuse of the cell or battery;*
- *Signs of physical damage, such as deformation to cell or battery casing, or colours on the casing;*
- *External and internal short circuit protection, such as voltage or isolation measures;*
- *The condition of the cell or battery safety features; or*
- *Damage to any internal safety components, such as the battery management system.*

Cells and batteries shall be transported according to the provisions applicable to UN 3090, UN 3091, UN 3480 and UN 3481, except Special Provision 230 and as otherwise stated in this special provision.

Packages shall be marked “DAMAGED/DEFECTIVE LITHIUM-ION BATTERIES” OR “DAMAGED/DEFECTIVE LITHIUM METAL BATTERIES”, as applicable.

Cells and batteries shall be packed in accordance with packing instructions P908 of 4.1.4.1 or LP904 of 4.1.4.3, as applicable.

Cells and batteries liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of transport shall not be transported except under conditions specified by the competent authority.”

1.11 SP A154 is currently far less restrictive than SP 376 and, for safety reasons, should be amended to ensure that batteries and cells that do not conform to the type tested are forbidden from air transport.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to consider and agree to the amendment to SP A154 proposed in Appendix A to this working paper.

2.1.1 The DGP-WG is invited to include recommending that the amendment to SP A154 be made in the 2019-2020 Edition of the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) by way of an Addendum, taking into consideration the safety reasons identified in this paper.

APPENDIX

PROPOSED AMENDMENT TO PART 3 OF THE TECHNICAL INSTRUCTIONS

Part 3

DANGEROUS GOODS LIST,
SPECIAL PROVISIONS AND
LIMITED AND EXCEPTED QUANTITIES

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Chapter 3

SPECIAL PROVISIONS

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Table 3-2. Special provisions

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| A154 | <p>Lithium batteries, identified by the manufacturer as being defective for safety reasons, or that have been damaged, that have the potential of producing a dangerous evolution of heat, fire or short circuit are forbidden for transport (e.g. those being returned to the manufacturer for safety reasons or cells or batteries that cannot be diagnosed as damaged or defective prior to transport).</p> <p><u>Lithium ion cells or batteries and lithium metal cells or batteries identified as being damaged or defective such that they do not conform to the type tested according to the applicable provisions of the UN <i>Manual of Tests and Criteria</i> are forbidden for transport.</u></p> <p><u>For the purposes of this special provision, these may include, but not limited to:</u></p> <ul style="list-style-type: none"><u>— cells or batteries identified as being defective for safety reasons;</u><u>— cells or batteries that have leaked or vented;</u><u>— cells or batteries that cannot be diagnosed prior to transport; or</u><u>— cells or batteries that have sustained physical or mechanical damage.</u> <p><u>Note.— In assessing a cell or battery as damaged or defective, an assessment or evaluation should be performed based on safety criteria from the cell, battery or product manufacturer or by a technical expert with knowledge of the cell's or battery's safety features. An assessment or evaluation may include, but is not limited to, the following criteria:</u></p> <ul style="list-style-type: none"><u>— acute hazard, such as gas, fire, or electrolyte leaking;</u><u>— the use or misuse of the cell or battery;</u><u>— signs of physical damage, such as deformation to cell or battery casing, or colours on the casing;</u><u>— external and internal short circuit protection, such as voltage or isolation measures;</u><u>— the condition of the cell or battery safety features; or</u><u>— damage to any internal safety components, such as the battery management system.</u> <p><u>Cells and batteries liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of transport are forbidden for transport.</u></p> |

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