



DANGEROUS GOODS PANEL (DGP)

TWENTY-THIRD MEETING

Montréal, 11 to 21 October 2011

ADDENDUM

A Working Group of the Whole Meeting on Lithium Batteries (DGP-WG/LB/1) was held in Montreal from 6 to 10 February 2012 to continue discussions begun at DGP/23 on reducing the maximum quantities of lithium ion and lithium metal batteries currently excepted from most of the requirements of the Technical Instructions (see paragraph 5.1.7 of the DGP/23 Report) and on lithium batteries in the post (see paragraph 5.1.6 of the DGP/23).

Following much discussion, DGP-WG/LB/1 agreed to amend Section II of Packing Instructions 965 and 968 by reducing the quantities of lithium batteries below which exceptions of that section applied. A new section was added to both packing instructions which would apply to batteries which exceeded the quantities but not the Watt-hour ratings/lithium metal content applicable to Section II. These batteries would be assigned to Class 9. Provisions were added to the new section which would allow shipments of lithium batteries to be shipped in non-UN specification packagings with alternative written documentation.

DGP-WG/LB/1 also agreed to provisions which would permit equipment containing no more than four lithium cells or two lithium batteries in the international post, provided the national postal authority's procedures and training programme were approved by the civil aviation authority of the State in which the national postal authority accepts mail.

Minor amendments were also agreed to address inconsistencies which appeared in the DGP/23 Report.

The Report of the Dangerous Goods Panel Working Group of the Whole Meeting on Lithium Batteries (DGP-WG/LB/1) (English only) can be downloaded from:

<http://www.icao.int/safety/DangerousGoods/Pages/Working-Group-of-the-Whole-on-Lithium-Batteries.aspx>.

The amendments are reflected in the following pages.

Agenda Item 2

1. Page 2A-143, item 18, second row, *replace* “Small cartridges fitted into other devices” with “Small cartridges for other devices.
2. Page 3-2-35, Attachment A to the Appendix to the Report on Agenda Item 2, **Lithium metal batteries** (including lithium alloy batteries), UN 3090 *replace* the values in columns 10 and 11 to read “see 968” and the values in columns 12 and 13 to also read “see 968”.
3. Page 3-2-46, Attachment A to the Appendix to the Report on Agenda Item 2, **Lithium ion batteries** (including lithium ion polymer batteries), UN 3480 *replace* the values in columns 10 and 11 to read “see 965” and the values in columns 12 and 13 to also read “see 965”.
4. Page 3-2-26, Attachment B to the Appendix to the Report on Agenda Item 2, **Lithium ion batteries** (including lithium ion polymer batteries), UN 3480 *replace* the values in columns 10 and 11 to read “see 965” and the values in columns 12 and 13 to also read “see 965”.
5. Page 3-2-27, Attachment B to the Appendix to the Report on Agenda Item 2, **Lithium metal batteries** (including lithium alloy batteries), UN 3090 *replace* the values in columns 10 and 11 to read “see 968” and the values in columns 12 and 13 to also read “see 968”.

Agenda Item 5

6. *Replace* Appendix A to the Report on Agenda Item 5 with the attached pages.

APPENDIX A

PROPOSED AMENDMENTS TO PROVISIONS RELATED TO LITHIUM BATTERIES IN THE TECHNICAL INSTRUCTIONS FOR THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR AND ITS SUPPLEMENT

TECHNICAL INSTRUCTIONS FOR THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR

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See the DGP-WG/LB/1 Report:

Part 1

GENERAL

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Chapter 2

LIMITATION OF DANGEROUS GOODS ON AIRCRAFT

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2.3 TRANSPORT OF DANGEROUS GOODS BY POST

2.3.1 In accordance with the Universal Postal Union (UPU) Convention, dangerous goods as defined in these Instructions, with the exception of those listed below, are not permitted in mail. Appropriate national authorities should ensure that the provisions are complied with in relation to the transport of dangerous goods by air.

2.3.2 The following dangerous goods may be acceptable in mail for air carriage subject to the provisions of the appropriate national authorities concerned and these Instructions which relate to such material:

- a) patient specimens as defined in 2;6.3.1.4 provided that they are classified, packed and marked as required by 2;6.3.2.3.6;
- b) infectious substances assigned to category B (UN 3373) only, when packed in accordance with the requirements of Packing Instruction 650, and solid carbon dioxide (dry ice) when used as a refrigerant for UN 3373; ~~and~~
- c) radioactive material, the activity of which does not exceed one-tenth of that listed in Table 2-15; ~~;~~

d) lithium ion batteries contained in equipment (UN 3481) meeting the provisions of Section II of Packing Instruction 967. No more than four cells or two batteries may be mailed in any single package; and

e) lithium metal batteries contained in equipment (UN 3091) meeting the provisions of Section II of Packing Instruction 970. No more than four cells or two batteries may be mailed in any single package.

2.3.3 The procedures of designated postal operators for controlling the introduction of dangerous goods in mail into air transport are subject to review and approval by the civil aviation authority of the State where the mail is accepted.

2.3.4 Before a designated postal operator can introduce the acceptance of lithium batteries as identified in 2.3.2 d) and e) they must have received specific approval from the civil aviation authority.

Note 1.— Designated postal authorities may accept the dangerous goods identified in 2.3.2 a), b) and c) without receiving specific approval from the civil aviation authority.

Note 2.— Guidelines for appropriate national authorities and civil aviation authorities are contained in the Supplement to these Instructions (S-1:3).

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Chapter 3

GENERAL INFORMATION

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3.1 DEFINITIONS

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Designated postal operator. Any governmental or non-governmental entity officially designated by the member State to operate postal services and to fulfill the related obligations arising from the acts of the Universal Postal Union (UPU) Convention on its territory.

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Chapter 4

TRAINING

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4.1 ESTABLISHMENT OF TRAINING PROGRAMMES

4.1.1 Initial and recurrent dangerous goods training programmes must be established and maintained by or on behalf of:

- a) shippers of dangerous goods, including packers and persons or organizations undertaking the responsibilities of the shipper;
- b) operators;
- c) ground handling agencies which perform, on behalf of the operator, the act of accepting, handling, loading, unloading, transferring or other processing of cargo, mail or stores;
- d) ground handling agencies located at an airport which perform, on behalf of the operator, the act of processing passengers;
- e) agencies, not located at an airport, which perform, on behalf of the operator, the act of checking in passengers;
- f) freight forwarders; ~~and~~
- g) agencies engaged in the security screening of passengers and their baggage and/or cargo, mail or stores; and
- h) designated postal operators.

4.1.2 Dangerous goods training programmes required by 4.1.1 b) must be subjected to review and approval by the appropriate authority of the State of the Operator. Dangerous goods training programmes required by 4.1.1 h) must be subjected to review and approval by the civil aviation authority of the State where the mail was accepted by the designated postal operator. Dangerous goods training programmes required by other than 4.1.1 b) and h) should be subjected to review and approval as determined by the appropriate national authority.

4.2 TRAINING CURRICULA

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4.2.2 Personnel identified in the categories specified in Table 1-4, ~~or~~ 1-5 or 1-6 must be trained or training must be verified prior to the person performing any duty specified in Table 1-4, ~~or~~ 1-5 or 1-6.

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4.2.8 Staff of designated postal operators must be trained commensurate with their responsibilities. The subject matter to which their various categories of staff should be familiar with is indicated in Table 1-6.

Table 1-6. Content of training courses for staff of designated postal operators

<u>Aspects of transport of dangerous goods by air with which they should be familiar, as a minimum</u>	<u>Designated Postal Operators</u>		
	<u>A</u>	<u>B</u>	<u>C</u>
<u>General philosophy</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>Limitations</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>General requirements for shippers</u>	<u>x</u>		
<u>Classification</u>	<u>x</u>		
<u>List of dangerous goods</u>	<u>x</u>		
<u>Packing requirements</u>	<u>x</u>		
<u>Labelling and marking</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>Dangerous goods transport document and other relevant documentation</u>	<u>x</u>	<u>x</u>	
<u>Acceptance of the dangerous goods listed in 1:2.3.2</u>	<u>x</u>		
<u>Recognition of undeclared dangerous goods</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>Storage and loading procedures</u>			<u>x</u>
<u>Provisions for passengers and crew</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>Emergency procedures</u>	<u>x</u>	<u>x</u>	<u>x</u>

KEY

- A — Staff of designated postal operators involved in accepting mail containing dangerous goods
- B — Staff of designated postal operators involved in processing mail (other than dangerous goods)
- C — Staff of designated postal operators involved in the handling, storage and loading of mail

Note .— Guidance on the aspects of training to be covered by staff of designated postal operators can be found in S-1:3

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Part 3

**DANGEROUS GOODS LIST,
 SPECIAL PROVISIONS AND
 LIMITED AND EXCEPTED QUANTITIES**

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Table 3-1. Dangerous Goods List

Name	UN No.	Class or division	Subsidiary risk	Labels	State variations	Special provisions	UN packing group	Excepted quantity	Passenger aircraft		Cargo aircraft	
									Packing instruction	Max. net quantity per package	Packing instruction	Max. net quantity per package
1	2	3	4	5	6	7	8	9	10	11	12	13
Lithium ion batteries (including lithium ion polymer batteries)	3480	9		Miscellaneous	US 3	A51 A88 A99 A154 A164 A183	II	E0	965See	5-kg965	965See	35-kg965
Lithium metal batteries (including lithium alloy batteries)	3090	9		Miscellaneous	US 2 US 3	A88 A99 A154 A164 A183	II	E0	968See	2.5-kg968	968See	35-kg968

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Part 4

PACKING INSTRUCTIONS

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See DGP-WG-LB/1 report:

Packing Instruction 965

Passenger and cargo aircraft for UN 3480

1. Introduction

This entry applies to lithium ion or lithium polymer batteries. This packing instruction is structured as follows:

- Section IA applies to lithium ion cells with a Watt-hour rating in excess of 20 Wh and lithium ion batteries with a Watt-hour rating in excess of 100 Wh, which must be assigned to Class 9 and are subject to all of the applicable requirements of these Instructions;
- Section IB applies to lithium ion cells with a Watt-hour rating not exceeding 20 Wh and lithium ion batteries with a Watt-hour rating not exceeding 100 Wh packed in quantities that exceed the allowance permitted in Section II, Table 965-II; and
- Section II applies to lithium ion cells with a Watt-hour rating not exceeding 20 Wh and lithium ion batteries with a Watt-hour rating not exceeding 100 Wh packed in quantities not exceeding the allowance permitted in Section II, Table 965-II.

2. Lithium batteries forbidden from transport

The following applies to all lithium ion cells and batteries in this packing instruction:

Lithium-Cells and 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).

See paragraph 2.3.3 and the DGP-WG-LB/1 report:

Waste lithium batteries and lithium batteries being shipped for recycling or disposal are ~~prohibited~~ forbidden from air transport unless approved by the appropriate national authority of the State of Origin and the State of the Operator.

~~Section I of this packing instruction applies to lithium ion and lithium polymer cells and batteries that are assigned to Class 9. Certain lithium ion and lithium polymer cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to the paragraphs above, are not subject to other additional requirements of these Instructions.~~

Packing Instruction 965

Passenger and cargo aircraft for UN 3480

IA. SECTION IA

Section IA requirements apply to ~~each cell or battery type~~ lithium ion cells with a Watt-hour rating in excess of 20 Wh and lithium ion batteries with a Watt-hour rating in excess of 100 Wh that ~~has~~ have been determined to meet the criteria for assignment to Class 9.

See paragraph 5.1.13 of this report:

Each cell or battery must:

- 1) be of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3; ~~and~~

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

- 2) incorporate a safety venting device or be designed to preclude a violent rupture under conditions normally incident to transport and be equipped with an effective means of preventing external short circuits; and

- 3) be manufactured under a quality management programme as described in 2:9.3.1 e).

Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses).

IA.1 General requirements

Part 4:1 requirements must be met.

See paragraph 3.2.12 of DGP/23-WP/3 and the DGP-WG-LB/1 report:

Table 965-IA

<u>Contents</u> <u>UN number and proper shipping name</u>	<u>Net quantity per package</u> <u>quantity (Section I)</u>	
	<u>Passenger</u>	<u>Cargo</u>
<u>UN 3480</u> <u>Lithium ion cells and batteries</u>	5 kg- G	35 kg- G

See paragraph 2.5.1.9 of this report:

IA.2 Additional packing requirements

- Lithium ion cells and batteries must be protected against short circuits.
- Lithium ion cells and batteries must be placed in inner packagings that completely enclose the cell or battery then placed in an outer packaging. The completed package for the cells or batteries must meet the Packing Group II performance requirements.
- Lithium ion batteries with a mass of 12 kg or greater and having a strong, impact-resistant outer casing, or assemblies of such batteries, may be transported when packed in strong outer packagings, or in protective enclosures (e.g. in fully enclosed or wooden slatted crates) not subject to the requirements of Part 6 of these Instructions, if approved by the appropriate authority of the State of Origin. A copy of the document of approval must accompany the consignment.
- Batteries manufactured after 31 December 2011 must be marked with the Watt-hour rating on the outside case.

Packing Instruction 965

Passenger and cargo aircraft for UN 3480

See paragraph 2.5.1.1 of this report:

IA.3 Outer packagings

Boxes	Drums	Jerricans
Aluminium (4B)	Aluminium (1B2)	Aluminium (3B2)
Fibreboard (4G)	Fibre (1G)	Plastics (3H2)
Natural wood (4C1, 4C2)	<u>Other metal (1N1)</u>	Steel (3A2)
<u>Other metal (4N)</u>	Plastics (1H2)	
Plastics (4H2)	Plywood (1D)	
Plywood (4D)	Steel (1A2)	
Reconstituted wood (4F)		
Steel (4A)		

See the DGP-WG-LB/1 report:

IB. SECTION IB

Section IB requirements apply to lithium ion cells with a Watt-hour rating not exceeding 20 Wh and lithium ion batteries with a Watt-hour rating not exceeding 100 Wh packed in quantities that exceed the allowance permitted in Section II, Table 965-II.

Quantities of lithium ion cells or batteries that exceed the allowance permitted in Section II, Table 965-II must be assigned to Class 9 and are subject to all of the applicable provisions of these Instructions (including the requirements in paragraph 2 of this packing instruction and of this section) except for the following:

- the provisions of Part 6; and
- the dangerous goods transport document requirements of 5.4, provided alternative written documentation is provided by the shipper describing the contents of the consignment. Where an agreement exists with the operator, the shipper may provide the information by electronic data processing (EDP) or electronic data interchange (EDI) techniques. The information required is as follows and should be shown in the following order:

- 1) the name and address of the shipper and consignee;
- 2) UN 3480;
- 3) Lithium ion batteries PI 965 IB;
- 4) the number of packages and the gross mass of each package.

Lithium ion cells and batteries may be offered for transport if they meet all of the following:

- 1) for lithium ion cells, the Watt-hour rating (see the Glossary of Terms in Attachment 2) is not more than 20 Wh;
- 2) for lithium ion batteries, the Watt-hour rating is not more than 100 Wh;
 - the Watt-hour rating must be marked on the outside of the battery case except for those batteries manufactured before 1 January 2009;
- 3) each cell or battery is of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3. However, batteries and cells manufactured before 1 January 2014 conforming to a design type tested according to the requirements of the fifth revised edition of the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3 may continue to be transported;

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

- 4) cells and batteries must be manufactured under a quality management programme as described in 2.9.3.1 e).

Packing Instruction 965

Passenger and cargo aircraft for UN 3480

IB.1 General requirements

Cells and batteries must be packed in strong outer packagings that conform to Part 4:1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

Table 965-IB

<u>Contents</u>	<u>Package quantity</u>	
	<u>Passenger</u>	<u>Cargo</u>
<u>Lithium ion cells and batteries</u>	<u>10 kg G</u>	<u>10 kg G</u>

IB.2 Additional requirements

- Cells and batteries must be packed in inner packagings that completely enclose the cell or battery then placed in a strong outer packaging.
- Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- Each package must be capable of withstanding a 1.2 m drop test in any orientation without:
 - damage to cells or batteries contained therein;
 - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
 - release of contents.
- Each package must be labelled with a lithium battery handling label (Figure 5-31) in addition to the Class 9 hazard label.
- Each consignment must be accompanied with a document with an indication that:
 - the package contains lithium ion cells or batteries;
 - the package must be handled with care and that a flammability hazard exists if the package is damaged;
 - special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary; and
 - a telephone number for additional information.

IB.3 Outer packagings

Boxes

Drums

Jerricans

Strong outer packagings

Packing Instruction 965

Passenger and cargo aircraft for UN 3480

See paragraph 3.2.31 of DGP/23-WP/3 and the DGP-WG-LB/1 report:

II. SECTION II

With the exception of Part 1:2.3 (Transport of dangerous goods by post), 7:4.4 (Reporting of dangerous goods accidents and incidents) and 8:1.1 (Provisions for dangerous goods carried by passengers or crew), Lithium ion cells and batteries offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements in paragraph 2 of this packing instruction and of this section.

Lithium ion cells and batteries may be offered for transport if they meet all of the following:

- 1) for lithium ion cells, the Watt-hour rating (see the Glossary of Terms in Attachment 2) is not more than 20 Wh;
- 2) for lithium ion batteries, the Watt-hour rating is not more than 100 Wh;
 - the Watt-hour rating must be marked on the outside of the battery case except for those batteries manufactured before 1 January 2009;
- 3) each cell or battery is of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3. However, batteries and cells manufactured before 1 January 2014 conforming to a design type tested according to the requirements of the fifth revised edition of the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3 may continue to be transported:

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

- 4) cells and batteries must be manufactured under a quality management programme as described in 2.9.3.1 e).

II.1 General requirements

Cells and batteries must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

<i>Contents</i>	<i>Package quantity (Section II)</i>	
	<i>Passenger</i>	<i>Cargo</i>
Lithium ion cells and batteries	40 kg-G	40 kg-G

Table 965-II

<u><i>Contents</i></u>	<u><i>Lithium ion cells and/or batteries with a Watt-hour rating not more than 2.7 Wh</i></u>	<u><i>Lithium ion cells with a Watt-hour rating more than 2.7 Wh, but not more than 20 Wh</i></u>	<u><i>Lithium ion batteries with a Watt-hour rating more than 2.7 Wh, but not more than 100 Wh</i></u>
<u><i>1</i></u>	<u><i>2</i></u>	<u><i>3</i></u>	<u><i>4</i></u>
<u>Maximum number of cells / batteries per package</u>	<u>No limit</u>	<u>8 cells</u>	<u>2 batteries</u>
<u>Maximum net quantity (mass) per package</u>	<u>2.5 kg</u>	<u>n/a</u>	<u>n/a</u>

The limits specified in columns 2, 3 and 4 of Table 965-II must not be combined in the same package.

Packing Instruction 965

Passenger and cargo aircraft for UN 3480

II.2 Additional packing requirements

- Cells and batteries must be packed in inner packagings that completely enclose the cell or battery then placed in a strong outer packaging.
- Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- Each package must be capable of withstanding a 1.2 m drop test in any orientation without:
 - damage to cells or batteries contained therein;
 - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
 - release of contents.
- Each package must be labelled with a lithium battery handling label (Figure 5-31).
- Each consignment must be accompanied with a document with an indication that:
 - the package contains lithium ion cells or batteries;
 - the package must be handled with care and that a flammability hazard exists if the package is damaged;
 - special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary;
 - a telephone number for additional information; and

See paragraph 5.1.12 of this report:

- the words "lithium ion batteries", "~~not restricted~~" and "in compliance with Section II of PI965" must be placed on the air waybill, when an air waybill is used.
- Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.

II.3 Outer packagings

Boxes

Drums

Jerricans

Strong outer packagings

See paragraph 5.1.5 of this report:

II.4 Overpacks

When packages are placed in an overpack, the lithium battery handling label required by this packing instruction must either be clearly visible or the label must be affixed on the outside of the overpack and the overpack must be marked with the word "Overpack".

Packing Instruction 966

Passenger and cargo aircraft for UN 3481 (packed with equipment) only

1. Introduction

This entry applies to lithium ion or lithium polymer batteries packed with equipment.

Section I of this packing instruction applies to lithium ion and lithium polymer cells and batteries that are assigned to Class 9. Certain lithium ion and lithium polymer cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to paragraph 2 below, are not subject to other additional requirements of these Instructions.

2. Lithium batteries forbidden from transport

The following applies to all lithium ion cells and batteries in this packing instruction:

~~Lithium Cells and~~ 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).

~~Section I of this packing instruction applies to lithium ion and lithium polymer cells and batteries that are assigned to Class 9. Certain lithium ion and lithium polymer cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to the paragraph above, are not subject to other additional requirements of these Instructions.~~

I. SECTION I

Section I requirements apply to each cell or battery type that has been determined to meet the criteria for assignment to Class 9.

See paragraph 5.1.13 of this report:

Each cell or battery must:

- 1) be of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3; ~~and~~

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

- 2) incorporate a safety venting device or be designed to preclude a violent rupture under conditions normally incident to transport and be equipped with an effective means of preventing external short circuits; and-

- 3) be manufactured under a quality management programme as described in 2:9.3.1 e).

Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses).

Packing Instruction 966

Passenger and cargo aircraft for UN 3481 (packed with equipment) only

I.1 General requirements

Part 4;1 requirements must be met.

See paragraph 3.2.12 of DGP/23-WP/3:

<i>Contents</i> <u>UN Number and Name</u>	<i>Package quantity</i> <i>(Section I)</i>	
	<i>Passenger</i>	<i>Cargo</i>
Quantity of lithium ion cells and batteries per package, excluding equipment <u>UN 3481 Lithium ion batteries packed with equipment</u>	5 kg <u>of lithium ion cells or batteries</u>	35 kg <u>of lithium ion cells or batteries</u>

I.2 Additional packing requirements

- Lithium ion cells and batteries must be protected against short circuits.
- Lithium ion cells or batteries must:
 - be placed in inner packagings that completely enclose the cell or battery then placed in an outer packaging. The completed package for the cells or batteries must meet the Packing Group II performance requirements; or
 - be placed in inner packagings that completely enclose the cell or battery, then placed with equipment in a package that meets the Packing Group II performance requirements.
- The equipment must be secured against movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.
- For the purpose of this packing instruction, “equipment” means apparatus requiring the lithium ion batteries with which it is packed for its operation.
- Batteries manufactured after 31 December 2011 must be marked with the Watt-hour rating on the outside case.

I.3 Outer packagings

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Plastics (4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B2)
Fibre (1G)
Plastics (1H2)
Plywood (1D)
Steel (1A2)

Jerricans

Aluminium (3B2)
Plastics (3H2)
Steel (3A2)

Packing Instruction 966

Passenger and cargo aircraft for UN 3481 (packed with equipment) only

See paragraph 3.2.31 of DGP/23-WP/3 and the DGP-WG-LB/1 report:

II. SECTION II

With the exception of Part 1;2.3 (Transport of dangerous goods by post), 7;4.4 (Reporting of dangerous goods accidents and incidents) and 8;1.1 (Provisions for dangerous goods carried by passengers or crew), Lithium ion cells and batteries packed with equipment offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements in paragraph 2 of this packing instruction and of this section.

Lithium ion cells and batteries may be offered for transport if they meet all of the following:

- 1) for lithium ion cells, the Watt-hour rating (see the Glossary of Terms in Attachment 2) is not more than 20 Wh;
- 2) for lithium ion batteries, the Watt-hour rating is not more than 100 Wh;
— the Watt-hour rating must be marked on the outside of the battery case except for those batteries manufactured before 1 January 2009;
- 3) each cell or battery is of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3. However, batteries and cells manufactured before 1 January 2014 conforming to a design type tested according to the requirements of the fifth revised edition of the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3 may continue to be transported;

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

- 4) cells and batteries must be manufactured under a quality management programme as described in 2;9.3.1 e).

II.1 General requirements

Cells and batteries must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

See the DGP-WG-LB/1 report:

<u>Contents</u>	<u>Package quantity (Section II)</u>	
	<u>Passenger</u>	<u>Cargo</u>
<u>Net quantity of lithium ion cells or batteries per package</u>	<u>5 kg</u>	<u>5 kg</u>

Packing Instruction 966

Passenger and cargo aircraft for UN 3481 (packed with equipment) only

II.2 Additional packing requirements

- Cells and batteries must be packed in inner packagings that completely enclose the cell or battery.
- Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- The equipment must be secured against movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.
- The maximum number of batteries in each package must be the minimum number required to power the equipment, plus two spares.
- Lithium ion cells or batteries must:
 - be placed in inner packagings that completely enclose the cell or battery then placed in a strong outer packaging; or
 - be placed in inner packagings that completely enclose the cell or battery, then placed with the equipment in a strong outer packaging.
- Each package of cells or batteries, or the completed package, must be capable of withstanding a 1.2 m drop test in any orientation without:
 - damage to cells or batteries contained therein;
 - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
 - release of contents.
- Each package must be labelled with a lithium battery handling label (Figure 5-31).
- Each consignment must be accompanied with a document with an indication that:
 - the package contains lithium ion cells or batteries;
 - the package must be handled with care and that a flammability hazard exists if the package is damaged;
 - special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary;
 - a telephone number for additional information; and

See paragraph 5.1.12 of this report:

- the words "lithium ion batteries", "~~not restricted~~" and "in compliance with Section II of PI966" must be placed on the air waybill, when an air waybill is used.
- Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.

II.3 Outer packagings

Boxes

Drums

Jerricans

Strong outer packagings

See paragraph 5.1.5 of this report:

II.4 Overpacks

When packages are placed in an overpack, the lithium battery handling label required by this packing instruction must either be clearly visible or the label must be affixed on the outside of the overpack and the overpack must be marked with the word "Overpack".

Packing Instruction 967

Passenger and cargo aircraft for UN 3481 (contained in equipment) only

1. Introduction

This entry applies to lithium ion or lithium polymer batteries contained in equipment.

Section I of this packing instruction applies to lithium ion and lithium polymer cells and batteries that are assigned to Class 9. Certain lithium ion and lithium polymer cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to paragraph 2 below, are not subject to other additional requirements of these Instructions.

2. Lithium batteries forbidden from transport

The following applies to all lithium ion cells and batteries in this packing instruction:

~~Lithium Cells and~~ 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).

~~Section I of this packing instruction applies to lithium ion and lithium polymer cells and batteries that are assigned to Class 9. Certain lithium ion and lithium polymer cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to the paragraph above, are not subject to other additional requirements of these Instructions.~~

I. SECTION I

Section I requirements apply to each cell or battery type that has been determined to meet the criteria for assignment to Class 9.

See paragraph 5.1.13 of this report:

Each cell or battery must:

- 1) be of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3; ~~and~~

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

- 2) incorporate a safety venting device or be designed to preclude a violent rupture under conditions normally incident to transport and be equipped with an effective means of preventing external short circuits; and

- 3) be manufactured under a quality management programme as described in 2.9.3.1 e).

Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses).

I.1 General requirements

Equipment must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1-~~9~~.10 (except 1.1-~~9~~.10.1).

Packing Instruction 967

Passenger and cargo aircraft for UN 3481 (contained in equipment) only

See paragraph 3.2.12 of DGP/23-WP/3:

<p style="text-align: center;"><i>Contents</i> <u>UN number and name</u></p>	<p style="text-align: center;"><i>Net quantity per piece of equipment-Package quantity (Section I)</i></p>	
	<i>Passenger</i>	<i>Cargo</i>
<p><u>UN 3481</u> Lithium ion batteries contained in equipment</p>	<p>5 kg of <u>lithium ion cells or batteries</u></p>	<p>35 kg of <u>lithium ion cells or batteries</u></p>

I.2 Additional-packing requirements

- The equipment must be secured against movement within the outer packaging and be packed so as to prevent accidental operation during air transport.
- The equipment must be packed in strong outer packagings constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use unless the battery is afforded equivalent protection by the equipment in which it is contained.
- Batteries manufactured after 31 December 2011 must be marked with the Watt-hour rating on the outside case.

I.3 Outer packagings

Boxes

Drums

Jerricans

Strong outer packagings

See paragraph 3.2.31 of DGP/23-WP/3 and the DGP-WG-LB/1 report:

II. SECTION II

With the exception of Part 1:2.3 (Transport of dangerous goods by post), 7:4.4 (Reporting of dangerous goods accidents and incidents) and 8:1.1 (Provisions for dangerous goods carried by passengers or crew), Lithium ion cells and batteries contained in equipment offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements in paragraph 2 of this packing instruction and of this section.

Lithium ion cells and batteries may be offered for transport if they meet all of the following:

- 1) for lithium ion cells ,the Watt-hour rating (see the Glossary of Terms in Attachment 2) is not more than 20 Wh;
- 2) for lithium ion batteries, the Watt-hour rating is not more than 100 Wh;
 - the Watt-hour rating must be marked on the outside of the battery case except for those batteries manufactured before 1 January 2009;
- 3) each cell or battery is of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3. However, batteries and cells manufactured before 1 January 2014 conforming to a design type tested according to the requirements of the fifth revised edition of the UN Manual of Tests and Criteria, Part III, sub-section 38.3 may continue to be transported;

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

4) cells and batteries must be manufactured under a quality management programme as described in 2:9.3.1 e).

Devices such as radio frequency identification (RFID) tags, watches and temperature loggers, which are not capable of generating a dangerous evolution of heat, may be transported when intentionally active. When active, these devices must meet defined standards for electromagnetic radiation to ensure that the operation of the device does not interfere with aircraft systems.

Packing Instruction 967

Passenger and cargo aircraft for UN 3481 (contained in equipment) only

II.1 **General requirements**

Equipment must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

See the DGP-WG-LB/1 report:

<u>Contents</u>	<u>Package quantity</u> <i>(Section II)</i>	
	<u>Passenger</u>	<u>Cargo</u>
<u>Net quantity of lithium ion cells or batteries per package</u>	<u>5 kg</u>	<u>5 kg</u>

II.2 **Additional-packing requirements**

- The equipment must be secured against movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.
- Cells and batteries must be protected so as to prevent short circuits.
- The equipment must be packed in strong outer packagings constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use unless the battery is afforded equivalent protection by the equipment in which it is contained.
- Each package containing more than four cells or more than two batteries installed in equipment must be labelled with a lithium battery handling label (Figure 5-31) (except button cell batteries installed in equipment (including circuit boards).
- Each consignment with packages bearing the lithium battery handling label must be accompanied with a document with an indication that:
 - the package contains lithium ion cells or batteries;
 - the package must be handled with care and that a flammability hazard exists if the package is damaged;
 - special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary;
 - a telephone number for additional information; and

See paragraph 5.1.12 of this report:

- the words "lithium ion batteries", "~~not restricted~~" and "in compliance with Section II of PI967" must be placed on the air waybill, when an air waybill is used.
- Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.

II.3 **Outer packagings**

Boxes

Drums

Jerricans

Strong outer packagings

See paragraph 5.1.5 of this report:

II.4 **Overpacks**

When packages are placed in an overpack, the lithium battery handling label required by this packing instruction must either be clearly visible or the label must be affixed on the outside of the overpack and the overpack must be marked with the word "Overpack".

Packing Instruction 968

Passenger and cargo aircraft for UN 3090

See the DGP-WG-LB/1 report:

1. Introduction

This entry applies to lithium metal or lithium alloy batteries in Class 9 (Section I) and lithium metal or lithium alloy batteries subject to specific requirements of these Instructions (Section II). This packing instruction is structured as follows:

- Section IA applies to lithium metal cells with a lithium metal content in excess of 1 g and lithium metal batteries with a lithium metal content in excess of 2 g, which must be assigned to Class 9 and are subject to all of the applicable requirements of these Instructions;
- Section IB applies to lithium metal cells with a lithium metal content not exceeding 1 g and lithium metal batteries with a lithium metal content not exceeding 2 g packed in quantities that exceed the allowance permitted in Section II, Table 968-II; and
- Section II applies to lithium metal cells with a lithium metal content not exceeding 1 g and lithium metal batteries with a lithium metal content not exceeding 2 g packed in quantities not exceeding the allowance permitted in Section II, Table 968-II.

2. Lithium batteries forbidden from transport

The following applies to all lithium metal cells and batteries in this packing instruction:-

Lithium Cells and 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).

See paragraph 2.3.3 and the DGP-WG-LB/1 report:

Waste lithium batteries and lithium batteries being shipped for recycling or disposal are ~~prohibited~~ forbidden from air transport unless approved by the appropriate national authority of the State of Origin and the State of the Operator.

~~Section I of this packing instruction applies to lithium metal and lithium alloy cells and batteries that are assigned to Class 9. Certain lithium metal and lithium alloy cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to the paragraphs above, are not subject to other additional requirements of these Instructions.~~

IA. SECTION IA

~~Section IA requirements apply to each cell or battery type~~ apply to lithium metal cells with a lithium metal content in excess of 1 g and lithium metal batteries with a lithium metal content in excess of 2 g that ~~has~~ have been determined to meet the criteria for assignment to Class 9.

See paragraph 5.1.13 of this report:

Each cell or battery must:

- 1) be of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3; ~~and~~

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

- 2) incorporate a safety venting device or be designed to preclude a violent rupture under conditions normally incident to transport and be equipped with an effective means of preventing external short circuits; and

- 3) be manufactured under a quality management programme as described in 2.9.3.1 e).

Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses).

Packing Instruction 968

Passenger and cargo aircraft for UN 3090

IA.1 General requirements

Part 4;1 requirements must be met.

See paragraph 3.2.12 of DGP/23-WP/3 and the DGP-WG-LB/1 report:

Table 968-IA

Contents <i>UN number and proper shipping name</i>	<i>Net quantity per package quantity (Section I)</i>	
	<i>Passenger</i>	<i>Cargo</i>
UN 3090 Lithium metal cells and batteries	2.5 kg-G	35 kg-G

See paragraph 2.5.1.9 of this report:

IA.2 Additional packing requirements

- Lithium metal cells and batteries must be protected against short circuits.
- Lithium metal cells and batteries must be placed in inner packagings that completely enclose the cell or battery then placed in an outer packaging. The completed package for the cells or batteries must meet the Packing Group II performance requirements.
- Lithium metal batteries with a mass of 12 kg or greater and having a strong, impact-resistant outer casing, or assemblies of such batteries, may be transported when packed in strong outer packagings, and in protective enclosures (e.g. in fully enclosed or wooden slatted crates) not subject to the requirements of Part 6 of these Instructions, if approved by the appropriate authority of the State of Origin. A copy of the document of approval must accompany the consignment.
- For lithium metal cells and batteries prepared for transport on passenger aircraft as Class 9:
 - Cells and batteries offered for transport on passenger aircraft must be packed in intermediate or outer rigid metal packaging.
 - Cells and batteries must be surrounded by cushioning material that is non-combustible and non-conductive, and placed inside an outer packaging.

See paragraph 2.5.1.1 of this report:

IA.3 Outer packagings

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B2)
Fibre (1G)
Other metal (1N1)
Plastics (1H2)
Plywood (1D)
Steel (1A2)

Jerricans

Aluminium (3B2)
Plastics (3H2)
Steel (3A2)

Packing Instruction 968

Passenger and cargo aircraft for UN 3090

See the DGP-WG-LB/1 report:

IB. SECTION IB

Section IB requirements apply to lithium metal cells with a lithium metal content not exceeding 1 g and lithium metal batteries with a lithium metal content not exceeding 2 g packed in quantities that exceed the allowance permitted in Section II, Table 968-II.

Quantities of lithium metal cells or batteries that exceed the allowance permitted in Section II, Table 968-II must be assigned to Class 9 and are subject to all of the applicable provisions of these Instructions (including the requirements in paragraph 2 of this packing instruction and of this section) except for the following:

- the provisions of Part 6; and
- the dangerous goods transport document requirements of 5.4, provided alternative written documentation is provided by the shipper describing the contents of the consignment. Where an agreement exists with the operator, the shipper may provide the information by electronic data processing (EDP) or electronic data interchange (EDI) techniques. The information required is as follows and should be shown in the following order:

- 1) the name and address of the shipper and consignee;
- 2) UN 3090;
- 3) Lithium metal batteries PI 968 IB;
- 4) the number of packages and the gross mass of each package.

Lithium metal or lithium alloy cells and batteries may be offered for transport if they meet all of the following:

- 1) for lithium metal cells, the lithium content is not more than 1 g;
- 2) for lithium metal or lithium alloy batteries, the aggregate lithium content is not more than 2 g;
- 3) each cell or battery is of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3. However, batteries and cells manufactured before 1 January 2014 conforming to a design type tested according to the requirements of the fifth revised edition of the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3 may continue to be transported;

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

- 4) cells and batteries must be manufactured under a quality management programme as described in 2.9.3.1 e).

IB.1 General requirements

Cells and batteries must be packed in strong outer packagings that conform to Part 4:1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

Table 968-IB

<u>Contents</u>	<u>Package quantity</u>	
	<u>Passenger</u>	<u>Cargo</u>
<u>Lithium metal cells and batteries</u>	<u>2.5 kg G</u>	<u>2.5 kg G</u>

Packing Instruction 968

Passenger and cargo aircraft for UN 3090

IB.2 Additional requirements

- Cells and batteries must be packed in inner packagings that completely enclose the cell or battery then placed in a strong outer packaging.
- Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- Each package must be capable of withstanding a 1.2 m drop test in any orientation without:
 - damage to cells or batteries contained therein;
 - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
 - release of contents.
- Each package must be labelled with a lithium battery handling label (Figure 5-31) in addition to the Class 9 hazard label.
- Each consignment must be accompanied with a document with an indication that:
 - the package contains lithium metal cells or batteries;
 - the package must be handled with care and that a flammability hazard exists if the package is damaged;
 - special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary; and
 - a telephone number for additional information.

IB.3 Outer packagings

Boxes

Drums

Jerricans

Strong outer packagings

See paragraph 3.2.31 of DGP/23-WP/3 and the DGP-WG-LB/1 report:

II. SECTION II

With the exception of Part 1:2.3 (Transport of dangerous goods by post), 7:4.4 (Reporting of dangerous goods accidents and incidents) and 8:1.1 (Provisions for dangerous goods carried by passengers or crew), lithium metal or lithium alloy cells and batteries offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements in paragraph 2 of this packing instruction and of this section.

Lithium metal or lithium alloy cells and batteries may be offered for transport if they meet all of the following:

- 1) for a lithium metal cell, the lithium content is not more than 1 g;
- 2) for a lithium metal or lithium alloy battery, the aggregate lithium content is not more than 2 g;
- 3) each cell or battery is of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3. However, batteries and cells manufactured before 1 January 2014 conforming to a design type tested according to the requirements of the fifth revised edition of the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3 may continue to be transported;

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

- 4) cells and batteries must be manufactured under a quality management programme as described in 2:9.3.1 e).

Packing Instruction 968

Passenger and cargo aircraft for UN 3090

II.1 General requirements

Cells and batteries must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

Contents	Package quantity (Section II)	
	Passenger	Cargo
Lithium metal cells and batteries	2.5 kg G	2.5 kg G

Table 968-II

Contents	<i>Lithium metal cells and/or batteries with a lithium content not more than 0.3 g</i>	<i>Lithium metal cells with a lithium content more than 0.3 g but not more than 1 g</i>	<i>Lithium metal batteries with a lithium content more than 0.3 g but not more than 2 g</i>
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Maximum number of cells / batteries per package	No limit	8 cells	2 batteries
Maximum net quantity (mass) per package	2.5 kg	n/a	n/a

The limits specified in columns 2, 3 and 4 of Table 968-II must not be combined in the same package.

II.2 Additional packing requirements

- Cells and batteries must be packed in inner packagings that completely enclose the cell or battery then placed in a strong outer packaging.
- Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- Each package must be capable of withstanding a 1.2 m drop test in any orientation without:
 - damage to cells or batteries contained therein;
 - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
 - release of contents.
- Each package must be labelled with a lithium battery handling label (Figure 5-31).
- Each consignment must be accompanied with a document with an indication that:
 - the package contains lithium metal cells or batteries;
 - the package must be handled with care and that a flammability hazard exists if the package is damaged;
 - special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary;
 - a telephone number for additional information; and

See paragraph 5.1.12 of this report:

- the words “lithium metal batteries”, “not restricted” and “in compliance with Section II of PI968” must be placed on the air waybill, when an air waybill is used.
- Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.

II.3 Outer packagings

Boxes

Drums

Jerricans

Strong outer packagings

Packing Instruction 968

Passenger and cargo aircraft for UN 3090

See paragraph 5.1.5 of this report:

II.4 Overpacks

When packages are placed in an overpack, the lithium battery handling label required by this packing instruction must either be clearly visible or the label must be affixed on the outside of the overpack and the overpack must be marked with the word "Overpack".

Packing Instruction 969

Passenger and cargo aircraft for UN 3091 (packed with equipment) only

1. Introduction

This entry applies to lithium metal or lithium alloy batteries packed with equipment.

Section I of this packing instruction applies to lithium metal and lithium alloy cells and batteries that are assigned to Class 9. Certain lithium metal and lithium alloy cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to paragraph 2 below, are not subject to other additional requirements of these Instructions.

2. Lithium batteries forbidden from transport

The following applies to all lithium metal cells and batteries in this packing instruction:

~~Lithium Cells and~~ 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).

~~Section I of this packing instruction applies to lithium metal and lithium alloy cells and batteries that are assigned to Class 9. Certain lithium metal and lithium alloy cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to the paragraph above, are not subject to other additional requirements of these Instructions.~~

I. SECTION I

Section I requirements apply to each cell or battery type that has been determined to meet the criteria for assignment to Class 9.

See paragraph 5.1.13 of this report:

Each cell or battery must:

- 1) be of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3; ~~and~~

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

- 2) incorporate a safety venting device or be designed to preclude a violent rupture under conditions normally incident to transport and be equipped with an effective means of preventing external short circuits; and

- 3) be manufactured under a quality management programme as described in 2.9.3.1 e).

Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses).

I.1 General requirements

Part 4;1 requirements must be met.

Packing Instruction 969

Passenger and cargo aircraft for UN 3091 (packed with equipment) only

See paragraph 3.2.12 of DGP/23-WP/3:

<i>Contents</i> <u>UN number and name</u>	<i>Package quantity</i> <i>(Section I)</i>	
	<i>Passenger</i>	<i>Cargo</i>
Quantity of lithium metal cells and batteries per overpack, excluding equipment <u>UN 3091 Lithium metal batteries packed with equipment</u>	5 kg of <u>lithium metal cells or batteries</u>	35 kg of <u>lithium metal cells or batteries</u>

I.2 Additional packing requirements

- Lithium metal cells and batteries must be protected against short circuits.
- Lithium metal cells or batteries must:
 - be placed in inner packagings that completely enclose the cell or battery then placed in an outer packaging. The completed package for the cells or batteries must meet the Packing Group II performance requirements; or
 - be placed in inner packagings that completely enclose the cell or battery, then placed with equipment in a package that meets the Packing Group II performance requirements.
- The equipment must be secured against movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.
- ~~— Each completed package containing lithium cells or batteries must be marked and labelled in accordance with the applicable requirements of 5.1, 5.2 and 5.3.~~
- For the purpose of this packing instruction, “equipment” means apparatus requiring the lithium batteries with which it is packed for its operation.
- For lithium metal cells and batteries prepared for transport on passenger aircraft as Class 9:
 - Cells and batteries offered for transport on passenger aircraft must be packed in intermediate or outer rigid metal packaging surrounded by cushioning material that is non-combustible and non-conductive and placed inside an outer packaging.

I.3 Outer packagings

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Plastics (4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B2)
Fibre (1G)
Plastics (1H2)
Plywood (1D)
Steel (1A2)

Jerricans

Aluminium (3B2)
Plastics (3H2)
Steel (3A2)

Packing Instruction 969

Passenger and cargo aircraft for UN 3091 (packed with equipment) only

See paragraph 3.2.31 of DGP/23-WP/3 and the DGP-WG-LB/1 report:

II. SECTION II

With the exception of Part 1;2.3 (Transport of dangerous goods by post), 7;4.4 (Reporting of dangerous goods accidents and incidents) and 8;1.1 (Provisions for dangerous goods carried by passengers or crew), Lithium metal cells and batteries packed with equipment offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements in paragraph 2 of this packing instruction and of this section.

Lithium metal cells and batteries may be offered for transport if they meet all of the following:

- 1) for a lithium metal cell, the lithium content is not more than 1 g;
- 2) for a lithium metal or lithium alloy battery, the aggregate lithium content is not more than 2 g;
- 3) each cell or battery is of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3. However, batteries and cells manufactured before 1 January 2014 conforming to a design type tested according to the requirements of the fifth revised edition of the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3 may continue to be transported;

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

- 4) cells and batteries must be manufactured under a quality management programme as described in 2;9.3.1 e).

II.1 General requirements

Cells and batteries must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

See the DGP-WG-LB/1 report:

<u>Contents</u>	<u>Package quantity (Section II)</u>	
	<u>Passenger</u>	<u>Cargo</u>
<u>Net quantity of lithium metal cells or batteries per package</u>	<u>5 kg</u>	<u>5 kg</u>

II.2 Additional packing requirements

- Cells and batteries must be packed in inner packagings that completely enclose the cell or battery.
- Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- The equipment must be secured against movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.
- The maximum number of batteries in each package must be the minimum number required to power the equipment, plus two spares.
- Lithium metal cells or batteries must:
 - be placed in inner packagings that completely enclose the cell or battery, then placed in a strong outer packaging; or
 - be placed in inner packagings that completely enclose the cell or battery, then placed with the equipment in a strong outer packaging.
- Each package of cells or batteries, or the completed package, must be capable of withstanding a 1.2 m drop test in any orientation without:
 - damage to cells or batteries contained therein;
 - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
 - release of contents.
- Each package must be labelled with a lithium battery handling label (Figure 5-31).

Packing Instruction 969

Passenger and cargo aircraft for UN 3091 (packed with equipment) only

- Each consignment must be accompanied with a document with an indication that:
 - the package contains lithium metal cells or batteries;
 - the package must be handled with care and that a flammability hazard exists if the package is damaged;
 - special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary;
 - a telephone number for additional information; and

See paragraph 5.1.12 of this report:

- the words “lithium metal batteries”, ~~“not restricted”~~ and ~~“in compliance with Section II of PI969”~~ must be placed on the air waybill, when an air waybill is used.
- Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.

II.3 Outer packagings

Boxes

Drums

Jerricans

Strong outer packagings

See paragraph 5.1.5 of this report:

II.4 **Overpacks**

When packages are placed in an overpack, the lithium battery handling label required by this packing instruction must either be clearly visible or the label must be affixed on the outside of the overpack and the overpack must be marked with the word “Overpack”.

Packing Instruction 970

Passenger and cargo aircraft for UN 3091 (contained in equipment) only

1. Introduction

This entry applies to lithium metal or lithium alloy batteries contained in equipment.

Section I of this packing instruction applies to lithium metal and lithium alloy cells and batteries that are assigned to Class 9. Certain lithium metal and lithium alloy cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to paragraph 2 below, are not subject to other additional requirements of these Instructions.

2. Lithium batteries forbidden from transport

The following applies to all lithium metal cells and batteries in this packing instruction:

Lithium Cells and 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).

~~Section I of this packing instruction applies to lithium metal and lithium alloy cells and batteries that are assigned to Class 9. Certain lithium metal and lithium alloy cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to the paragraph above, are not subject to other additional requirements of these Instructions.~~

I. SECTION I

Section I requirements apply to each cell or battery type that has been determined to meet the criteria for assignment to Class 9.

See paragraph 5.1.13 of this report:

Each cell or battery must:

- 1) be of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3; ~~and~~

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

- 2) incorporate a safety venting device or be designed to preclude a violent rupture under conditions normally incident to transport and be equipped with an effective means of preventing external short circuits; and

- 3) be manufactured under a quality management programme as described in 2.9.3.1 e).

Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses).

I.1 General requirements

Equipment must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

Packing Instruction 970

Passenger and cargo aircraft for UN 3091 (contained in equipment) only

See paragraph 3.2.12 of DGP/23-WP/3:

<i>Package contents</i> <u>UN number and name</u>	<i>Not quantity per piece of equipment</i> <u>Package quantity (Section I)</u>	
	<i>Passenger</i>	<i>Cargo</i>
Lithium metal batteries <u>UN 3091 Lithium metal batteries contained in equipment</u>	5 kg of lithium metal cells or batteries	35 kg of lithium metal cells or batteries

I.2 Additional packing requirements

- The equipment must be secured against movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.
- The equipment must be packed in strong outer packagings constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use unless the battery is afforded equivalent protection by the equipment in which it is contained.
- The quantity of lithium metal contained in any piece of equipment must not exceed 12 g per cell and 500 g per battery.

I.3 Outer packagings

Boxes

Drums

Jerricans

Strong outer packagings

See paragraph 3.2.31 of DGP/23-WP/3 and the DGP-WG-LB/1 report:

II. SECTION II

With the exception of Part 1:2.3 (Transport of dangerous goods by post), 7:4.4 (Reporting of dangerous goods accidents and incidents) and 8:1.1 (Provisions for dangerous goods carried by passengers or crew), lithium metal cells and batteries contained in equipment offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements in paragraph 2 of this packing instruction and of this section.

Lithium metal cells and batteries may be offered for transport if they meet all of the following:

- 1) for a lithium metal cell, the lithium content is not more than 1 g;
- 2) for a lithium metal or lithium alloy battery, the aggregate lithium content is not more than 2 g.
- 3) each cell or battery is of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3. However, batteries and cells manufactured before 1 January 2014 conforming to a design type tested according to the requirements of the fifth revised edition of the UN *Manual of Tests and Criteria*, Part III, sub-section 38.3 may continue to be transported;

Note.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.

- 4) cells and batteries must be manufactured under a quality management programme as described in 2:9.3.1 e).

Devices such as radio frequency identification (RFID) tags, watches and temperature loggers, which are not capable of generating a dangerous evolution of heat, may be transported when intentionally active. When active, these devices must meet defined standards for electromagnetic radiation to ensure that the operation of the device does not interfere with aircraft systems.

Packing Instruction 970

Passenger and cargo aircraft for UN 3091 (contained in equipment) only

II.1 General requirements

Equipment containing batteries must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

See the DGP-WG-LB/1 report:

<i>Contents</i>	<i>Package quantity (Section II)</i>	
	<i>Passenger</i>	<i>Cargo</i>
<u>Net quantity of lithium metal cells or batteries per package</u>	<u>5 kg</u>	<u>5 kg</u>

II.2 Additional packing requirements

- The equipment must be secured against movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.
- Cells and batteries must be protected so as to prevent short circuits.
- The equipment must be packed in strong outer packagings constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use unless the battery is afforded equivalent protection by the equipment in which it is contained.
- Each package containing more than four cells or more than two batteries installed in equipment must be labelled with a lithium battery handling label (Figure 5-31) (except button cell batteries installed in equipment (including circuit boards)).
- Each consignment with packages bearing the lithium battery handling label must be accompanied with a document with an indication that:
 - the package contains lithium metal cells or batteries;
 - the package must be handled with care and that a flammability hazard exists if the package is damaged;
 - special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary;
 - a telephone number for additional information; and

See paragraph 5.1.12 of this report:

- the words "lithium metal batteries", "~~not restricted~~" and "in compliance with Section II of PI970" must be placed on the air waybill, when an air waybill is used.
- Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.

II.3 Outer packagings

Boxes

Drums

Jerricans

Strong outer packagings

See paragraph 5.1.15 of this report:

II.4 Overpacks

When packages are placed in an overpack, the lithium battery handling label required by this packing instruction must either be clearly visible or the label must be affixed on the outside of the overpack and the overpack must be marked with the word "Overpack".

Part 5

SHIPPER'S RESPONSIBILITIES

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Chapter 3

LABELLING

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3.5.2 Handling labels

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3.5.2.2 Lithium battery handling label

See paragraph 2.2.2 of this report and the DGP-WG-LB/1 report:

Packages containing lithium batteries that meet the requirements of Section II ~~packed according to~~ of Packing Instructions 965 to 970 ~~that are not subject to other additional requirements of these Instructions~~ must bear a "Lithium battery" handling label shown in Figure 5-31, as required by the applicable packing instruction. The label must be a minimum dimension of 120 mm x 110 mm except labels of 74 mm x 105 mm may be used on packages containing lithium batteries where the packages are of dimensions such that they can only bear smaller labels. The label must show "Lithium metal batteries" or "Lithium ion batteries", as applicable. Where the package contains both types of batteries, the label must show "Lithium metal and lithium ion batteries". Packages containing lithium batteries that meet the requirements of Section IB of Packing Instructions 965 and 968 must bear both a "Lithium battery" handling label shown in Figure 5-31 and a Class 9 hazard label (Figure 5-23).

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Part 7

OPERATOR'S RESPONSIBILITIES

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See paragraph 3.2.42 and the DGP-WG-LB/1 report::

4.4011 RETENTION OF DOCUMENTS OR INFORMATION

4.11.1 The operator must ensure that at least one copy of the documents or information appropriate to the transport by air of a consignment of dangerous goods is retained for a minimum period of three months after the flight on which the dangerous goods were transported. As a minimum, the documents or information which must be retained are the dangerous goods transport documents, the acceptance checklist (when this is in a form which requires physical completion), ~~and the~~ written information to the pilot-in-command and, for shipments offered under Section IB of Packing Instructions 965 and 968, the alternative documentation, if applicable, or information provided on it. These documents or the information must be made available to the appropriate national authority upon request.

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Part 8

PROVISIONS CONCERNING PASSENGERS AND CREW

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1.1 DANGEROUS GOODS CARRIED BY PASSENGERS OR CREW

The amendments to Part 8 are based on the new structure agreed under discussions of Agenda Item 2 (See paragraph 2.9.1 of this report).

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

Items or Articles	Location			Approval of the operator(s) is required	The pilot-in-command must be informed	Restrictions
	Checked Baggage	Carry-on Baggage	On the person			

Medical necessities

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See paragraphs 2.9.4, 5.1.8 and 5.1.9 of this report:

<p>e5) Battery-powered wheelchairs or other similar mobility aids with non-spillable wet batteries or with batteries which comply with Special Provision A123</p>	Yes	No	No	Yes	<p>(see 5 e) iv)</p>	<p>4a) 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>2b) non-spillable batteries must comply with Special Provision A67 or the vibration and pressure differential tests of Packing Instruction 872;</p> <p>3c) the operator must verify that:</p> <p style="padding-left: 20px;">Reorder paragraphs i), ii) and iii) as indicated:</p> <p>ii) the battery terminals must be <u>are</u> protected from short circuits (e.g. by being enclosed within a battery container);</p> <p>4i) the battery must be <u>is</u> securely attached to the wheelchair or mobility aid;</p> <p>5iii) electrical circuits have been isolated. the operator(s) must ensure that:</p> <ul style="list-style-type: none"> — wheelchairs or other battery-powered mobility aids are carried in such a manner so as to prevent unintentional activation; and — they are protected from being damaged by the movement of baggage, mail, stores or other cargo;
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Items or Articles	Location			Approval of the operator(s) is required	The pilot-in-command must be informed	Restrictions
	Checked Baggage	Carry-on Baggage	On the person			
						<p>d) <u>devices must be carried in a manner such that they are protected from being damaged by the movement of baggage, mail, stores or other cargo;</u></p> <p>e) <u>where a battery-powered wheelchair or other similar mobility aid is specifically designed to allow its battery(ies) to be removed by the user (e.g. collapsible):</u></p> <p>i) <u>the battery(ies) must be removed. The wheelchair or mobility aid may then be carried as checked baggage without restriction;</u></p> <p>ii) <u>the removed battery(ies) must be carried in strong, rigid packagings which must be stowed in the cargo compartment;</u></p> <p>iii) <u>the battery(ies) must be protected from short circuit;</u></p> <p>iv) <u>the pilot-in-command must be informed of the location of the packed battery; and</u></p> <p>f) it is recommended that passengers make advance arrangements with each operator.</p>

See paragraphs 2.9.4, 5.1.8 and 5.1.9 of this report:

f6) Battery-powered wheelchairs or other similar mobility aids with spillable batteries	Yes	No	No	Yes	Yes	<p>4a) 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>2b) the wheelchair or mobility aid can be loaded, stowed, secured and unloaded always in an upright position and the;</p> <p>c) <u>the operator must verify that:</u></p> <p style="padding-left: 20px;">Reorder paragraphs i), ii) and iii) as indicated:</p> <p>ii) <u>battery terminals are protected from short circuits (e.g. by being enclosed within a battery container);</u> <u>and</u></p> <p>i) <u>and the battery is securely attached to the wheelchair or mobility aid;</u></p> <p>iii) <u>electrical circuits have been isolated;</u></p> <p>3d) <u>the operator(s) devices must ensure that wheelchairs or other battery-powered mobility aids are be</u></p>
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Items or Articles	Location			Approval of the operator(s) is required	The pilot-in-command must be informed	Restrictions
	Checked Baggage	Carry-on Baggage	On the person			
						<p>carried in such a manner so as to prevent unintentional activation and <u>such</u> that they are protected from being damaged by the movement of baggage, mail, stores or other cargo;</p> <p>4e) if the wheelchair or mobility aid cannot be loaded, stowed, secured and unloaded always in an upright position, the battery(ies) must be removed and. The wheelchair or mobility aid may then be carried as checked baggage without restriction;</p> <p>5f) the removed battery must be carried in strong, rigid packagings as follows:</p> <ul style="list-style-type: none"> — the packagings must be leaktight, impervious to battery fluid and be protected against upset by securing them to pallets or by securing them in cargo compartments using appropriate means of securement (other than by bracing with freight or baggage) such as by use of restraining straps, brackets or holders; — batteries must be protected against short circuits, secured upright in these packagings and surrounded by compatible absorbent material sufficient to absorb their total liquid contents; <hr/> <p>See paragraph 3.2.29 of DGP/23-WP/2:</p> <hr/> <ul style="list-style-type: none"> — these packagings must be marked “Battery, wet, with wheelchair” or “Battery, wet, with mobility aid” and be labelled with a “Corrosive” label (Figure 5-22) and with a package orientation labels (Figure 5-26) <u>as required by 5.3.3</u>; <p>6g) <u>the pilot-in-command must be informed of the location of the wheelchair or mobility aid with an installed battery or the location of a packed battery.</u></p> <p>h) it is recommended that passengers make advance arrangements with each operator; also unless batteries are nonspillable they should be fitted, where feasible, with spill-resistant vent caps.</p>

<i>Items or Articles</i>	<i>Location</i>			<i>Approval of the operator(s) is required</i>	<i>The pilot-in-command must be informed</i>	<i>Restrictions</i>
	<i>Checked Baggage</i>	<i>Carry-on Baggage</i>	<i>On the person</i>			

See paragraph 3.2.51 of DGP/23-WP/3 and paragraphs 2.9.4, 5.1.8 and 5.1.9 of this report:

<p>g7) Lithium-ion battery-powered wheelchairs or other similar mobility aids</p>	<p><u>Yes</u></p>	<p><u>(see 7 e)</u></p>	<p>No</p>	<p>Yes</p>	<p>Yes</p>	<p>4a) 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>2b) the batteries must be of a type which meets the requirements of each test in the UN <i>Manual of Tests and Criteria</i>, Part III, <u>sub</u>-section 38.3;</p> <p>3c) <u>the operator must verify that:</u></p> <p style="padding-left: 20px;">Reorder paragraphs i), ii) and iii) as indicated:</p> <p style="padding-left: 20px;">ii) the battery terminals must be <u>are</u> protected from short circuits (e.g. by being enclosed within a battery container); and</p> <p style="padding-left: 20px;">i) the battery is <u>securely attached to the wheelchair or</u> mobility aid; and</p> <p style="padding-left: 20px;">iii) electrical circuits have been <u>isolated;</u></p> <p>4d) the operator(s) devices <u>must ensure that such mobility aids are</u> be carried in a manner so as to prevent unintentional activation and such that they are protected from being damaged by the movement of baggage, mail, stores or other cargo; and</p> <p>e) where a battery-powered wheelchair or other similar mobility aid is specifically designed to allow its battery(ies) to be removed by the user (e.g. collapsible):</p> <p style="padding-left: 20px;">i) the battery(ies) must be removed and carried in the passenger cabin;</p> <p style="padding-left: 20px;">ii) the battery terminals must be protected from short circuit (by insulating the terminals e.g. by taping over exposed terminals);</p> <p style="padding-left: 20px;">iii) the battery must be protected from damage (e.g. by placing each battery in a protective pouch);</p> <p style="padding-left: 20px;">iv) removal of the battery from the device must be performed by following the instructions of the manufacturer or device owner;</p>
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DGP/23-WP/102
Addendum/Corrigendum

5A-36

Appendix A to the Report on Agenda Item 5

Items or Articles	Location			Approval of the operator(s) is required	The pilot-in-command must be informed	Restrictions
	Checked Baggage	Carry-on Baggage	On the person			
						<p>v) the battery must not exceed 300 Wh;</p> <p>vi) a maximum of one spare battery not exceeding 300 Wh or two spares not exceeding 160 Wh each may be carried; and</p> <p>e) the pilot-in-command must be informed of the location of the lithium ion battery(ies).</p> <p>5f) it is recommended that passengers make advance arrangements with each operator.</p>

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§19 Portable electronic devices (such as watches, calculating machines, cameras, cellular phones, laptop computers,) camcorders, etc.)

See paragraph 5.1.3 of this report:

Portable electronic devices containing lithium metal or lithium ion cells or batteries	Yes	Yes	Yes	No	No	<p>4a) carried by passengers or crew for personal use;</p> <p>2b) should be carried as carry-on baggage; and</p> <p>3c) each battery must not exceed the following:</p> <ul style="list-style-type: none"> — for lithium metal batteries, a lithium content of not more than 2 grams; or — for lithium ion batteries, a watt-hour rating of not more than 100 Wh. <p>See paragraph 5.1.3 of this report:</p> <p>d) if devices are carried in checked baggage, measures must be taken to prevent unintentional activation; and</p> <p>See paragraph 3.2.53 of DGP/23-WP/3:</p> <p>e) batteries and cells must be of a type which meets the requirements of each test in the UN Manual of Tests and Criteria, Part III, sub-section 38.3.</p>
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<i>Items or Articles</i>	<i>Location</i>			<i>Approval of the operator(s) is required</i>	<i>The pilot-in-command must be informed</i>	<i>Restrictions</i>
	<i>Checked Baggage</i>	<i>Carry-on Baggage</i>	<i>On the person</i>			
Spare batteries for portable electronic devices containing lithium <u>metal</u> or lithium ion cells or batteries	No	Yes	Yes	No	No	<p>1a) carried by passengers or crew for personal use;</p> <p>2b) must be individually protected so as to prevent short circuits (by placement in original retail packaging or by otherwise insulating terminals, e.g. by taping over exposed terminals or placing each battery in a separate plastic bag or protective pouch);</p> <p>3c) each battery must not exceed the following:</p> <ul style="list-style-type: none"> — for lithium metal batteries, a lithium content of not more than 2 grams; or — for lithium ion batteries, a watt-hour rating of not more than 100 Wh; <u>and</u> <p style="text-align: center;">See paragraph 3.2.53 of DGP/23-WP/3:</p> <p><u>d) batteries and cells must be of a type which meets the requirements of each test in the UN Manual of Tests and Criteria, Part III, sub-section 38.3.</u></p>

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**PROPOSED AMENDMENTS TO THE PROVISIONS IN THE
SUPPLEMENT TO THE TECHNICAL INSTRUCTIONS RELATED TO
LITHIUM BATTERIES IN THE POST**

Part S-1

GENERAL

**(ADDITIONAL INFORMATION
FOR PART 1 OF THE
TECHNICAL INSTRUCTIONS)**

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See the DGP-WG-LB/1 report:

Chapter 3

GUIDANCE TO STATES ON THE TRANSPORT OF DANGEROUS GOODS BY POST

3.1 INTRODUCTION

3.1.1 Annex 18 to the Chicago Convention, *The Safe Transport of Dangerous Goods by Air*, requires States, inter alia, to establish procedures with a view to controlling the introduction of dangerous goods into air transport through its designated postal operators. These procedures must be approved by the civil aviation authority of a State where mail containing dangerous goods is to be accepted by a designated postal operator, prior to the introduction of dangerous goods into air transport through the designated postal operator. The following guidance is offered to assist civil aviation authorities to assess and approve the procedures established by designated postal operators in their State.

3.1.2 Part 1,2,3 of the Technical Instructions outlines those dangerous goods that may be acceptable in mail for carriage by air subject to the provisions of appropriate national authorities, including civil aviation authorities, and the Technical Instructions.

3.2 ASSESSMENT OF PROCEDURES

3.2.1 The aim of the assessment is to ensure the suitability of the procedures established by the designated postal operators that control the introduction of dangerous goods into air transport.

3.2.2 The assessment should ensure that designated postal operators have established the following procedures:

- a) training of staff in accordance with Part 1;4 of the Technical Instructions;
- b) reporting of dangerous goods accidents and incidents to civil aviation authorities;
- c) reporting of hidden and undeclared dangerous goods to civil aviation authorities;
- d) provision of information to customers at acceptance points (e.g. street post boxes, post offices, agencies, websites);
- e) provision of information to account customers regarding dangerous goods;

- f) inclusion of clauses in contracts with account customers regarding dangerous goods not permitted in the mail;
- g) emergency procedures;
- h) retention of documents (e.g. dry ice acceptance checklist);
- i) documented acceptance procedures for staff regarding the dangerous goods allowed by Part 1:2.3 of the Technical Instructions.
- j) procedures for requiring the senders name, address and signature on packages containing dangerous goods;
- k) procedures for ensuring that any State or Operator variations in Attachment 3 of the Technical Instructions are complied with;
- l) procedures for ensuring that any changes to the Technical Instructions are incorporated into existing procedures; and
- m) procedures for the handling of packages rejected from transport.

3.3 TRAINING

3.3.1 The staff of a designated postal operator are required to be trained in the requirements commensurate with their responsibilities.

3.3.2 Depending on the responsibilities of the person, the aspects of training to be covered may vary from those shown in Table 1-6 of the Technical Instructions. Therefore, in respect to the acceptance of the dangerous goods permitted by Part 1:2.3.2 of the Technical Instructions, staff of designated postal operators need only be trained in the requirements specific to those items permitted in air mail and not the acceptance of all classes of dangerous goods.

3.3.3 The categories of personnel identified in Table 1-6 of the Technical Instructions are not all encompassing. For example, staff of a designated postal operator who have responsibilities that only involve the handling of letters, correspondence or printed materials that are not capable of containing dangerous goods do not require training.
