危险品航空运输管理信息

第4期

民航局运输司　　2012年3月22日

编者按：锂电池在航空运输中被划分为危险品，它不仅有起火的危险，而且一旦起火，所产生的火焰在短时间内难以扑灭。这对航空安全造成了巨大的威胁。有鉴于此，为了进一步规范锂电池的航空运输，保障航空安全，国际民航组织于2012年2月6日至10日在加拿大蒙特利尔召开国际民航组织危险品专家组锂电池工作组全体会议，就与锂电池航空运输有关的规定展开专题讨论，并最终形成了《2013－2014年版＜危险物品安全航空运输技术细则＞有关锂电池运输规定的修订意见》（简称《修订意见》）。目前此《修订意见》已上报国际民航组织空中航行委员会并获得了批准。民航局派员参加了此次会议并撰写了《国际民航组织危险品专家组锂电池工作组全体会议情况介绍》，并组织翻译了《修订意见》，供各位领导及业内人士参考。

需要说明的是，此刊的附录2是由附录1直接翻译而来。由于时间较短，在翻译上难免有疏漏之处。如果您对此有任何意见或建议，请发邮件至 dgminfo@qq.com。

国际民航组织危险品专家组
锂电池工作组全体会议情况介绍

国际民航组织危险品专家组锂电池工作组全体会议(简称DGP WG LB/1)于2012年2月6日-10日在加拿大蒙特利尔召开。我国专家组成员运输司综合处及来自民航科学技术研究院、北京迪捷姆空运咨询服务有限公司、国泰航空等单位的4人参加了此次全体会议。本次会议共讨论了14份不同国家、国际组织、行业协会提交的工作文件、4份说帖和2份信息文件,其中12份工作文件,所有说帖和信息文件都与锂电池有关,这是一次针对锂电池航空运输规定的专题会议。

一、本次会议基本概况

DGP WG LB/1由英国民航局危险品专家组成员Geoff. Leach先生担任会议主席。有16名危险品专家组成员(包括14个国家和2个国际组织,有表决权)和非专家组成员(均为国际组织,作为危险品专家组顾问及观察员,无表决权)近70人出席会议。

本次会议讨论的14份工作文件主要由国际民航组织危险品专家组秘书处、美国、英国、国际航协等成员提交。鉴于大多数工作文件均与锂电池有关,会议将相关提案结合在一起进行了讨论,

并最终形成了对2013－2014年版《危险物品安全航空运输技术细则》(简称《技术细则》)有关锂电池运输规定的修订意见。目前此《修订意见》已上报国际民航组织空中航行委员会并获得了批准，具体内容将在2013－2014年版《技术细则》体现。

二、会议涉及的主要议题

在2011年10月召开的国际民航组织危险品专家组第23次大会(简称DGP/23)上，有工作文件提出降低目前《技术细则》中包装说明965和968第二部分规定的单个包装件锂电池最大数量限制。此工作文件虽然未获通过，但专家组成员一致认为有关锂电池的议题应进行进一步讨论，重点关注大批量运输的非限制性锂电池。为此，国际民航组织危险品专家组特别召开此次锂电池工作组全体会议，希望可以进一步加强锂电池的管理，明确非限制性锂电池的航空运输规定。此会议涉及的议题有以下几项主要内容：

(一)针对包装说明965、968的修订

在DGP/23上，美国代表提出第72号工作文件，建议删除《技术细则》中包装说明965和968第二部分关于锂离子电池和锂金属电池可以作为非限制性货物运输的条款，要求锂离子电池和锂金属电池只能按危险品运输。之后，美方在会议期间又提出11号信息文件及9号说帖，试图降低包装说明965及968第二部分的包装限重。这些工作文件均未获得通过。

在此次会议上，秘书处对上次会议的讨论情况进行了汇总并将工作文件再次提出，希望代表能进行进一步的讨论。秘书处提醒各

位代表，美方之所以希望代表能够对此工作文件进行再次讨论，是因为基于美国联邦航空局(FAA)技术中心的数据模型。该模型表明，随着锂电池航空运输量的不断增长和锂电池能量的不断增大，锂电池航空运输的风险越来越大。考虑到这些风险，目前包装说明965及968第二部分对锂电池的例外规定是不恰当的。而如果美方的工作文件能够通过，由于将针对锂电池采取诸多安全措施，如托运人接受严格的培训，航空公司进行收运检查并填制机长通知单(NOTOC)等，将会有效的提高锂电池航空运输的安全性。

对于美方工作文件中针对锂电池所应采取的安全措施，专家组的专家们基本达成一致，认为这些措施都是有效和必须的。但也有一些专家表示，若同意美方的工作文件，对于目前遵守规章的托运人将增加额外的成本和负担，可能导致瞒报锂电池进行航空运输的情况出现。国际航协(IATA)的专家认为应该采取折中方案，既不大幅增加托运人的运输成本，也要达到对锂电池航空运输增加安全措施的目的。此提议得到专家组的一致认可。经过讨论，专家组认为应对包装说明965和968进行如下修订(具体的修订内容见附录1)。

主要将这两个包装说明由原先的两部分划分为三部分：

第IA部分适用于额定能量超过100Wh或锂含量超过2g的锂电池。按此部分运输的锂电池需完全满足《技术细则》有关危险品包装、标记标签、申报等的要求。

第IB部分适用于额定能量不超过100Wh或锂含量不超过

2g,但单个包装件内数量超过第II部分规定的锂电池。按照IB部分运输的锂电池将受《技术细则》大部分条款的约束,如托运人需接受培训,航空公司需进行收运检查并填制机长通知单(NOTOC)等,但不需要使用联合国规格包装,不填写专用申报单。按照此条规定运输的锂电池除了要粘贴第9类危险性标签之外,还需要粘贴锂电池操作标签。

第II部分适用内含不超过8个锂电池芯(额定能量在2.7Wh至20Wh之间的锂离子电池芯或锂含量在0.3g至1g之间的锂金属电池芯)或2块锂电池(额定能量在2.7Wh至100Wh之间的锂离子电池或锂含量在0.3g至2g之间的锂金属电池)的包装件,考虑到额定能量不超过2.7Wh锂离子电池/电池芯及锂含量不超过0.3g锂金属电池/电池芯危险性较小,此条款允许单个包装件内装有上述电池的数量超过2块(电池芯的数量超过8个)。按照此条规定运输的锂电池只需粘贴锂电池操作标签即可,无需使用联合国规格包装,不需要填写机长通知单。。

专家组认为这些修订将提高锂电池航空运输的安全性,但大家也一致认为这些修订并不能杜绝与锂电池相关的危险品事故、事故征候的发生,因为托运人不按照规定运输锂电池的情况仍然会存在。各国民航主管当局应考虑采取更多措施,加强对托运人的监管,减少不按规定运输锂电池情况的出现。

(二)邮件中锂电池的运输

在DGP/23上,万国邮联(UPU)提出工作文件,建议允许含有

不超过4个锂电池芯或2块锂电池的设备在国际邮件中运输。由于担心邮政部门执行《技术细则》的能力及员工的培训问题，此工作文件未获通过，但很多与会专家表示UPU与ICAO应该加强联系和沟通，对此问题进行进一步的研究。

DGP/23结束后，UPU与ICAO成立了临时工作小组，专门对邮件中运输含锂电池设备的问题进行研究。临时工作小组内UPU的专家介绍了邮政部门已经采取的防止危险品进入邮件的措施以及针对锂电池的运输邮政部门准备采取的措施，ICAO的专家对此表示欢迎，但对这些措施是否能够真正落实表示关切。

临时工作小组的专家最后达成共识并形成了一份工作文件。这份工作文件的核心是允许邮件中运输符合规定的含锂电池设备，但有两个前提：

一是指定邮政经营人用以控制危险品装入邮件并进行航空运输的程序应交由邮件接收地国家的民用航空主管当局进行审查和批准；

二是邮政部门应依据《技术细则》1;4建立危险品培训大纲并报民用航空主管当局进行审查和批准。

此份工作文件涉及的对《技术细则》及补篇的主要修订有：

1.修订《技术细则》1;2.3.2，允许符合要求的含锂电池设备在邮件中运输。增加1;2.3.3和2.3.4，要求指定邮政经营人必须制定用以控制危险品装入邮件并进行航空运输的程序并交由邮件接收地国家的民用航空主管当局进行审查和批准。在民用航空主

管当局批准后，指定邮政经营人方可接收符合规定的含锂电池设备并使用邮件进行航空运输；

2. 在《技术细则》1;3 中增加了指定邮政经营人的定义；

3.《技术细则》1;4 中增加了对指定邮政经营人员工的危险品培训要求。考虑到邮政员工工作的特殊性，1;4 中专门增加了表 1-6，将邮政员工分为 A、B、C 三类，分别是从事收运含危险物品邮件的指定邮政经营人的员工，从事邮件（非危险物品）收运工作的指定邮政经营人的员工以及从事邮件搬运、储存和装载工作的指定邮政经营人的员工，同时针对不同的人员类别，制定了不同的培训内容。

（三）与锂电池有关的危险品事故、事故征候报告

在会议期间，加拿大民航局向与会代表通报了一起与锂电池有关的危险品事故征候。一票含有锂离子电池（UN3481）的货物在多伦多机场停机坪起火。与会代表对加拿大民航局积极通报的态度表示欢迎，并认为在与锂电池有关的危险品事故、事故征候报告方面，ICAO 应该做出更多努力。有专家提议各国应将与锂电池有关的危险品事故、事故征候通报给 ICAO，并由 ICAO 在其网站对外公布。此提议得到大多数代表的支持，大家认为公开这些事故、事故征候的信息有助于识别这些事件中的偶然因素，以便发现危险品运输规则中的缺陷。危险品专家组秘书表示将确认 ICAO 能否提供足够的资源，以便建立此系统。此问题将进行进一步的讨论。

（四）其他事宜

会议还对托运人的培训和监管、豁免程序中的飞越国批准、将SMS引入危险品运输管理等问题进行了讨论。

三、下一步工作思考

通过了解国际危险品航空运输管理规则的变化，结合我国危险品运输的实际情况，运输司将在今年着重做好以下几项工作：

一是继续深入开展锂电池航空运输专项治理工作。在民航局的部署下，2011年全行业开展了危险品违规运输专项治理工作。经过八个月的专项治理，全行业危险品航空运输安全管理水平总体有所提高，但也暴露出我国危险品运输管理目前存在的一些问题，比如旅客违规携带锂电池登机，航空邮件、快递中夹带锂电池现象不断发生等。为此，民航局已将深入开展锂电池航空运输专项治理工作列入2012年度重点工作。运输司将按照民航局统一部署，继续加强旅客行李中锂电池安全航空运输管理的宣传告知和监督检查，加强对货运领域锂电池违规运输行为的治理，加大对外国航空公司危险品运输，特别是锂电池运输的监管力度。将从今年5月份开始，在行业内开展锂电池专项治理工作，通过要求航空公司自查，政府持续监察，切实落实锂电池运输管理的安全主体责任和安全监管责任。

二是与邮政部门加强联系和沟通，加大对利用邮件违规运输危险品行为的查处。目前国际民航组织已经原则同意使用邮件运输符合要求的锂电池，但要求邮政部门在收运锂电池前获得民航

主管部门的同意。运输司将以此为契机，加强与邮政部门的联系和沟通，通过与邮政部门进行联合监察，加强对邮政部门员工危险品航空运输知识的培训，建立邮件违规运输危险品事件通报制度等形式，切实减少利用邮件违规运输危险品行为的发生。

三是修订锂电池航空运输标准。目前的《锂电池航空运输规范》(MH/T 1020－2009)是民航局2009年颁布实施的，所参考的国际标准是2009－2010版的《技术细则》。随着2013－2014版《技术细则》的推出，锂电池航空运输的要求有了较大的变化，原有标准已经不再适应形势发展的需要。运输司计划今年5月份启动对标准的修订工作，争取在下半年修订完成并在全行业内进行宣贯，做好2013年按照新标准进行锂电池航空运输的实施准备。运输司也将要求各培训机构在实施危险品培训时，增加锂电池航空运输标准的内容，以便该标准在实际工作中得到贯彻和落实。

为使大家进一步了解2013－2014版《技术细则》有关锂电池运输规定的修订情况，我们将已经确定的对2013－2014版《技术细则》有关锂电池运输规定的修订内容作为本信息的附录，供大家参考使用。

附录1:2013－2014年版《技术细则》有关锂电池运输规定的修订(英文)

附录2:2013－2014年版《技术细则》有关锂电池运输规定的修订(中文)

附录1 2013-2014版《技术细则》有关锂电池运输规定的修订

DGP-WG/LB/1-WP/15
Appendix A

APPENDIX A

PROPOSED AMENDMENTS TO THE PROVISIONS RELATED TO LITHIUM BATTERIES IN THE TECHNICAL INSTRUCTIONS

Part 3

DANGEROUS GOODS LIST, SPECIAL PROVISIONS AND LIMITED AND EXCEPTED QUANTITIES

Table 3-1. Dangerous Goods List

Name	*UN No.*	*Class or divi-sion*	*Sub-sidiary risk*	*Labels*	*State varia-tions*	*Special provi-sions*	*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	~~965~~See	~~5 kg~~965	~~965~~See	~~35 kg~~965
Lithium metal batteries (including lithium alloy batteries)	3090	9		Miscellaneous	US 2 US 3	A88 A99 A154 A164 A183	II	E0	~~968~~See	~~2.5 kg~~968	~~968~~See	~~35 kg~~968

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Part 4

PACKING INSTRUCTIONS

Editorial Note.— Amendments agreed at DGP-WG/LB/1 are designated with redline/strikeout text. Amendments agreed at DGP/23 have been incorporated in the text without redline/strikeout.

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See paragraph 3.1.1 of this 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:

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).

Waste lithium batteries and lithium batteries being shipped for recycling or disposal are 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.

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;

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.

Table 965-IA

~~Contents~~*UN number and proper shipping name*	*Net quantity per p~~P~~ackage ~~quantity (Section I)~~*	
	Passenger	*Cargo*
UN 3480 **Lithium ion ~~cells and~~ batteries**	5 kg	35 kg

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, 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.

IA.3 **Outer packagings**

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

Packing Instruction 965

Passenger and cargo aircraft for UN 3480

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).

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

Contents	*Package quantity*	
	Passenger	*Cargo*
Lithium ion cells and batteries	10 kg G	10 kg G

Packing Instruction 965

Passenger and cargo aircraft for UN 3480

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

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.

~~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).~~

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

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

II.1 **General requirements**

Cells and Bbatteries 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 ion cells and batteries~~	~~10 kg G~~	~~10 kg G~~

Table 965-II

Contents	*Lithium ion cells and/or batteries with a Watt-hour rating not more than 2.7 Wh*	*Lithium ion cells with a Watt-hour rating more than 2.7 Wh, but not more than 20 Wh*	*Lithium ion batteries with a Watt-hour rating more than 2.7 Wh, but not more than 100 Wh*
1	*2*	*3*	*4*
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 965-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 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
  - the words "lithium ion batteries", "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

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:

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.

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;

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.

UN Number and Name	*Package quantity (Section I)*	
	Passenger	*Cargo*
UN 3481 **Lithium ion batteries packed with equipment**	5 kg of lithium ion cells or batteries	35 kg of lithium ion cells or batteries

Packing Instruction 966

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

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	*Drums*	*Jerricans*
Aluminium (4B)	Aluminium (1B2)	Aluminium (3B2)
Fibreboard (4G)	Fibre (1G)	Plastics (3H2)
Natural wood (4C1, 4C2)	Plastics (1H2)	Steel (3A2)
Plastics (4H2)	Plywood (1D)	
Plywood (4D)	Steel (1A2)	
Reconstituted wood (4F)		
Steel (4A)		

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.

~~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).~~

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 ~~B~~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).

Packing Instruction 966

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

See paragraph 3.1.1.10 of this report:

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

See paragraph 3.1.1 of this report:

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
  - the words "lithium ion batteries", "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	

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:

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.

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;

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).

UN number and name	*Package quantity (Section I)*	
	Passenger	*Cargo*
UN 3481 **Lithium ion batteries contained in equipment**	5 kg of lithium ion cells or batteries	35 kg of lithium ion cells or batteries

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.

Packing Instruction 967

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

I.3 **Outer packagings**

Boxes *Drums* *Jerricans*

Strong outer packagings

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.

~~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).~~

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.

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 paragraph 3.1.1.10 of this report:

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

Packing Instruction 967

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

See paragraph 3.1.1 of this report:

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
  - the words "lithium ion batteries", "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	

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 paragraph 3.1.1 of this 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:~~.~~

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).

Waste lithium batteries and lithium batteries being shipped for recycling or disposal are 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.

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;

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.

Table 968-IA

~~Contents~~*UN number and proper shipping name*	*Net quantity per p~~Package quantity (Section I)~~*	
	Passenger	*Cargo*
UN 3090 **Lithium metal ~~cells and~~ batteries**	2.5 kg	35 kg

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, 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.

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)

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.

Packing Instruction 968

Passenger and cargo aircraft for UN 3090

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

Contents	*Package quantity*	
	Passenger	*Cargo*
Lithium metal cells and batteries	2.5 kg G	2.5 kg G

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

Packing Instruction 968

Passenger and cargo aircraft for UN 3090

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.

~~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).~~

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

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).

II.1 **General requirements**

Cells and Bbatteries 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	*Lithium metal cells and/or batteries with a lithium content not more than 0.3 g*	*Lithium metal cells with a lithium content more than 0.3 g but not more than 1 g*	*Lithium metal batteries with a lithium content more than 0.3 g but not more than 2 g*
1	*2*	*3*	*4*
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.

Packing Instruction 968

Passenger and cargo aircraft for UN 3090

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
  - the words "lithium metal batteries", "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		

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:

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.

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.

UN number and name	*Package quantity (Section I)*	
	Passenger	*Cargo*
UN 3091 **Lithium metal batteries packed with equipment**	5 kg of lithium metal cells or batteries	35 kg of lithium metal cells or batteries

Packing Instruction 969

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

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	*Drums*	*Jerricans*
Aluminium (4B)	Aluminium (1B2)	Aluminium (3B2)
Fibreboard (4G)	Fibre (1G)	Plastics (3H2)
Natural wood (4C1, 4C2)	Plastics (1H2)	Steel (3A2)
Plastics (4H2)	Plywood (1D)	
Plywood (4D)	Steel (1A2)	
Reconstituted wood (4F)		
Steel (4A)		

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.

~~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).~~

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).

Packing Instruction 969

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

II.1 **General requirements**

Cells and ~~B~~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 paragraph 3.1.1.10 of this report:

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

See paragraph 3.1.1 of this report:

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).
- 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
  - the words "lithium metal batteries", "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		

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:

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.

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;

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).

UN number and name	*Package quantity (Section I)*	
	Passenger	*Cargo*
UN 3091 **Lithium metal batteries contained in equipment**	5 kg of lithium metal cells or batteries	35 kg of lithium metal cells or batteries

Packing Instruction 970

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

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	

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.

~~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).~~

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.

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 paragraph 3.1.1.10 of this report:

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

Packing Instruction 970

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

See paragraph 3.1.1 of this report:

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

  the words "lithium metal batteries", "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	

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

Chapter 3

LABELLING

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3.5.2 Handling labels

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See paragraph 3.1.1.6 b) of this report:

3.5.2.2 Lithium battery handling label

Packages containing lithium batteries that meet the requirements of Section II of Packing Instructions 965 to 970 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 × 110 mm except labels of 74 mm × 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).

• • •

Part 7

OPERATOR'S RESPONSIBILITIES

4.11 RETENTION OF DOCUMENTS OR INFORMATION

See paragraph 3.1.1.6 b) of this report:

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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APPENDIX B

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

See paragraph 3.7.1 of this report:

Part 1

GENERAL

. . .

Chapter 2

LIMITATION OF DANGEROUS GOODS ON AIRCRAFT

. . .

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

...

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.

...

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

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

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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APPENDIX C

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 paragraph 3.7.1.4 of this 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.

— END —

附录 2　2013-2014 版《技术细则》有关锂电池运输规定的修订

附录 A

建议对《技术细则》中与锂电池相关条款的修订

第三部分
危险品物品表，特殊规定、限制数量和例外数量

表 3-1. 危险物品表

名称	UN 编号	类别或项别	次要危险性	标签	国家差异条款	特殊规定	UN 包装等级	例外数量	客机		货机	
									包装说明	每个包装件最大净重	包装说明	每个包装件最大净重
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*
Lithium ion batteries (including lithium ion polymer batteries)	3480	9		Miscellaneous 杂项危险品	US 3	A51 A88 A99 A154 A164 A183	II	E0	~~965~~See 见	~~5 kg~~965	~~965~~See 见	~~35 kg~~965
Lithium metal batteries (including lithium alloy batteries)	3090	9		Miscellaneous 杂项危险品	US 2 US 3	A88 A99 A154 A164 A183	II	E0	~~968~~See 见	~~2.5 kg~~968	~~968~~See 见	~~35 kg~~968

第四部分

包装说明

包装说明 965

客机和货机运输 UN 3480

1. 介绍

本条目适用于锂离子或锂聚合物电池。本包装说明结构如下：

— 第IA节适用于瓦时额定值超过20Wh的锂离子电池芯，以及瓦时额定值超过100Wh的锂离子电池，必须被归为第9类并且受本细则全部适用条款的限制；

— 第IB节适用于瓦时额定值不超过20Wh的锂离子电池芯，以及瓦时额定值不超过100Wh的锂离子电池，其数量超过了第II节中表965-II规定的数量；

— 第II节适用于瓦时额定值不超过20Wh的锂离子电池芯，以及瓦时额定值不超过100Wh的锂离子电池，其数量不超过第II节中表965-II规定的数量。

2. 禁止运输的锂电池

以下部分适用于本包装说明涉及的所有锂离子电池芯和锂离子电池：

禁止运输由制造商查明为具有安全方面缺陷、或已经受损、可能会产生导致危险的热量、造成火情或短路的锂电池（例如那些出于安全原因退还给制造商的锂电池）。

除非得到始发国和运营人所属国的国家有关当局批准，禁止航空运输废弃锂电池，以及为回收或处置目的运输的锂电池。

IA 第IA节

第IA节适用于符合划入第 9 类标准的瓦时额定值超过 20Wh的电池芯，以及瓦时额定值超过 100Wh的电池。

每个电池芯或电池必须满足下列要求：

1) 每个电池芯或电池的所属类型证明满足《联合国试验和标准手册》第 III 部分 38.3 小节规定的每项试验的要求；

注：无论电池所含的电池芯是否经受了此类试验，电池必须接受这些试验。

2) 装有安全排气装置，或其设计能防止在正常运输中难免发生的条件下猛烈破裂，并装有防止外部短路的有效装置。

3) 其制造必须按照 2：9.3.1 e）规定的质量管理体系进行。

包含并联的多个电池芯或电池芯系列的每个电池必须装有防止危险的反向电流所需的有效装置(例如二极管、保险丝等)。

IA. 1 一般要求

必须符合 4：1 的要求。

表 965-IA

UN编号和运输专用名词	每个包装件的净数量	
	客机	货机
UN3480 锂离子电池	5 kg	35 kg

IA.2 补充要求

— 必须保护锂离子电池芯和电池免于短路。
— 锂离子电池芯和电池必须放入能将电池芯或电池完全封装的内包装内，然后再放入外包装。电池芯或电池的完成包装件必须满足 II 级包装的性能要求。
— 经始发国有关当局批准，质量超过 12 kg 且具有耐冲撞坚固外壳的锂离子电池或此类电池组件，可以放在不受本细则第 6 部分要求限制的坚固外包装或保护封罩中（如完全封闭的箱子或木质板条箱）进行运输。批准文件必须随附托运货物。
— 2011 年 12 月 31 日之后生产的电池必须在外壳上标明瓦时额定值。

IA.3 外包装

箱	桶	方桶
铝（4B）	铝（1B2）	铝（3B2）
纤维板（4G）	纤维（1G）	塑料（3H2）
天然木（4C1，4C2）	塑料（1H2）	钢（3A2）
塑料（4H2）	胶合板（1D）	
胶合板（4D）	钢（1A2）	
再生木（4F）		
钢（4A）		

IB. 第IB节

第IB节适用于瓦时额定值不超过 20Wh的锂离子电池芯，以及瓦时额定值不超过 100Wh的锂离子电池，其数量超过了第II节表 965-II中的数量限制。

超过第II节表 965-II数量限制的锂离子电池芯或电池，必须划为第 9 类，并且受本细则所有适用条款的限制（包括本包装说明的第 2 段，以及本节），如下部分例外：

— 本细则第 6 部分；和

— 在托运人提供了其他书面文件描述了托运物的情况下，第 5：4 节的危险品运输文件要求。在经营人同意的情况下，托运人可以通过电子数据传递或电子数据交换的形式提供这些信息。要求提供的信息要素及显示顺序如下：

1） 托运人及收货人的名称及地址

2） UN3480

3） 锂离子电池 PI965 IB

4） 包装件的数量，以及每个包装件的毛重

锂离子电池芯和电池，若满足以下条件，可以运输：

1） 锂离子电池芯，瓦时额定值不超过 20Wh；

2） 锂离子电池，瓦时额定值不超过 100Wh；

— 2009 年 1 月 1 日后生产的锂电子电池，其外壳必须标出瓦时额定值；

3） 每个电池芯或电池的型号必须证明满足《联合国试验与标准手册》第III部分 38.3 节所有试验的要求。2014 年 1 月 1 日前生产的电池芯和电池，其型号符合《试验与标准手册》第 5 修订版 38.3 小节试验规定的，可以继续运输。

注 — 无论电池芯是否经过试验，其组成的电池必须经过试验。

4）电池芯和电池的生产，必须按照 2：9.3.1 e）款规定的质量管理体系进行。

IB.1 一般要求

电池芯和电池必须装入坚固的外包装中，外包装符合 4：1.1.1, 1.1.3.1 以及 1.1.10（不包括 1.1.10.1）

表 965-IB

内装物	包装件内的 量	
	客机	货机
锂离子电池芯和电池	10kg G	10kg G

IB.2 补充要求

— 电池芯和电池必须装入能够将电池芯或电池完全封装的内包装内，然后装入坚固的外包装中。

— 必须保护电池芯和电池防止发生短路。这包括防止在同一包装内与导电材料接触，导致发生短路。

— 每个包装件都必须能够承受从任何方向进行的1.2米跌落试验，而不会发生下列情况：

  — 使其中所装的电池芯或电池受损；

  — 使内装物移动，以致电池与电池(或电池芯与电池芯)互相接触；

  — 内装物释出。

— 每个包装件除必须粘贴9类危险性标签外，还必须粘贴锂电池操作标签（图5-31）。

— 每批托运货物必须附带一份包括以下内容的文件：

  — 标明包装件内装有锂离子电池芯或电池；

  — 标明包装件必须小心轻放，如果包装件损坏，有着火的危险；

  — 标明如包装件受到损坏，必须遵守的特别程序，包括检查和必要时重新包装；和

  — 了解其他情况的电话号码；

IB.3 外包装

箱子	圆形桶	方形桶
坚固的外包装		

II 第II节

除应满足 1；2.3（邮件运输危险品），7；4.4（危险品事故事件的报告）以及 8；1.1（旅客和机组携带危险品的规定）外，交运的锂离子电池芯和电池如果满足本包装说明第 2 段以及本节的要求，则不受本细则其他要求的限制。

锂离子电池芯和电池如果符合下列全部条件，则可交运：

1) 锂离子电池芯的瓦时额定值（见附录2的术语表）不超过20 Wh；

2) 锂离子电池的瓦时额定值不超过100 Wh；

  — 2009年1月1日后制造的电池，必须在电池盒外壳上标明瓦时额定值。

3) 每个电池芯或电池的所属类型证明满足《联合国试验和标准手册》第 III 部分 38.3 小节规定的每项试验的要求。2014 年 1 月 1 日前生产的电池芯和电池，其型号符合《试验与标准手册》第 5 修订版 38.3 小节试验规定的，可以继续运输。

  注：无论电池所含的电池芯是否经受了此类试验，电池必须接受这些试验。

4) 电池芯和电池的生产，必须按照 2；9.3.1e）规定的质量管理体系进行。

II.1 一般要求

电池芯和电池必须装在符合 4;1.1.1, 1.1.3.1 和 1.1.10 (但 1.1.10.1 除外) 规定的坚固外包装当中。

表 965-II

内装物	瓦时额定值不超过 2.7Wh的锂离子电池芯和/或电池	瓦时额定值超过 2.7Wh但不超过 20Wh的锂离子电池芯	瓦时额定值超过 2.7Wh但不过 100 h的锂离子电池
1	2	3	4
每个包装件内电池芯/电池的最大数量	不限制	8 块电池芯	2 块电池
每个包装件的最大净数量（质量）	2.5kg	不适用	不适用

表 965-II第 2,3,4 栏所列的数量限制，不得合并用于同一个包装件。

II.2 补充要求

— 电池芯和电池必须装在能够将电池芯或电池完全封装的内包装内，然后再放入坚固的外包装当中。
— 必须保护电池芯和电池防止发生短路。这包括防止在同一包装内与导电材料接触，导致发生短路。
— 每个包装件都必须能够承受从任何方向进行的1.2米跌落试验，而不会发生下列情况：
  — 使其中所装的电池芯或电池受损；
  — 使内装物移动，以致电池与电池(或电池芯与电池芯)互相接触；
  — 内装物释出。
— 每个包装件必须贴有锂电池操作标签（图5-31）。
— 每批托运货物必须附带一份包括以下内容的文件：
  — 标明包装件内装有锂离子电池芯或电池；
  — 标明包装件必须小心轻放，如果包装件损坏，有着火的危险；
  — 标明如包装件受到损坏，必须遵守的特别程序，包括检查和必要时重新包装；
  — 了解其他情况的电话号码；和
  — 如果使用航空货运单，则必须在货运单上写明“锂离子电池”、“符合包装说明965第II部分”的字样。
— 为电池芯或电池进行运输准备或将其交付运输的人员，必须接受与其责任相符的关于这些要求的适当指示。

II.3 外包装

箱　　桶　　方桶

坚固的外包装

II.4 集合包装

若将包装件集合为集合包装，本包装说明中要求的锂电池操作标签必须清晰可见；或者粘贴在集合包装外，同时在集合包装外标注 OVERPACK 字样。

包装说明 966

仅限于 UN 3481（与设备包装在一起）的客机和货机运输

1 介绍

本条目适用于与设备包装在一起的锂离子或锂聚合物电池。

本包装说明第I节适用于归为第 9 类的锂离子和锂聚合物电池。符合本包装说明第II部分规定的锂离子和锂聚合物电池，在满足以下第 2 段的要求下，不受本细则其他规定的限制。

2 禁止运输的锂电池

以下规定适用于本包装说明涉及的所有锂离子电池芯和电池：

禁止运输由制造商查明为具有安全方面缺陷、或已经受损、可能会产生导致危险的热量、造成火情或短路的锂电池（例如那些出于安全原因退还给制造商的锂电池）。

I 第I节

第 I 节的要求适用于划入第 9 类的标准的每种电池芯或电池型号。

每个电池芯或电池必须满足下列要求：

1) 每个电池芯或电池的所属类型证明满足《联合国试验和标准手册》第 III 部分 38.3 小节规定的每项试验的要求；和

注：无论电池所含的电池芯是否经受了此类试验，电池必须接受这些试验。

2) 装有安全排气装置，或其设计能防止在正常运输中难免发生的条件下猛烈破裂，并装有防止外部短路的有效装置。

3) 其制造要按照 2；9.3.1e）规定的质量管理体系进行。

包含并联的多个电池芯或电池芯系列的每个电池必须装有防止危险的反向电流所需的有效装置(例如二极管、保险丝等)。

I.1 一般要求

必须符合 4;1 的要求。

UN 编号及运输专用名词	包装件数量（第 I 节）	
	客机	货机
UN3481 锂离子电池与设备包装在一起	锂离子电池芯或电池 5 kg	锂离子电池芯或电池 35 kg

I.2 补充要求

— 必须保护锂离子电池芯和电池防止短路。
— 锂离子电池芯或电池必须：
  — 放入能将电池芯或电池完全封装的内包装内，然后再放入外包装当中。电池芯或电池的完成包装件必须满足II级包装的性能要求；或
  — 放入能将电池芯或电池完全封装的内包装内，然后与设备一起放入满足II级包装的性能要求的包装件内。
— 设备必须在外包装内得到固定以免移动，并配备防止发生意外启动的有效装置。
— 为本包装说明之目的，“设备”系指需要与其包装在一起的锂离子电池方可运行的装置。
— 2011 年 12 月 31 日之后生产的电池必须在外壳上标明瓦时额定值。

I.3 外包装

箱	圆形桶	方型桶
铝（4B）	铝（1B2）	铝（3B2）
纤维板（4G）	纤维（1G）	塑料（3H2）
天然木（4C1，4C2）	塑料（1H2）	钢（3A2）
塑料（4H2）	胶合板（1D）	
胶合板（4D）	钢（1A2）	
再生木（4F）		
钢（4A）		

II 第II节

除应遵守1；2.3（邮件运输危险品），7；4.4（危险品事故事件的报告）以及8；1.1（旅客和机组携带危险品的规定）外，与设备包装在一起交运的锂离子电池芯和电池，如果满足本包装说明第2段以及本节的要求，则不受本细则其他规定的限制。

锂离子电池芯和电池如果符合下列全部条件，则可交运：

1) 锂离子电池芯的瓦时额定值（见附录2的术语表）不超过20 Wh；

2) 锂离子电池的瓦时额定值不超过100 Wh；

— 必须在电池盒外壳上标明瓦时额定值，但在2009年1月1日之前制造的电池除外。

3) 每个电池芯或电池的所属类型证明满足《联合国试验和标准手册》第 III 部分 38.3 小节规定的每项试验的要求。2014 年 1 月 1 日前生产的电池芯和电池，其型号符合《试验与标准手册》第 5 修订版 38.3 小节试验规定的，可以继续运输。

注：无论电池所含的电池芯是否经受了此类试验，电池必须接受这些试验。

4）电池芯和电池的制作必须按照 2；9.3.1e）规定的质量管理体系进行。

II.1 一般要求

电池芯和电池必须装在符合4;1.1.1, 1.1.3.1 和 1.1.10 (但 1.1.10.1 除外) 规定的坚固外包装当中。

内装物	包装件内的数量（第II节）	
	客机	货机
每个包装件内的锂离子电池芯或电池的净数量	5kg	5kg

II.2 补充要求

— 电池芯和电池必须装在能够将电池芯或电池完全封装的内包装内。
— 必须保护电池芯和电池防止发生短路。这包括防止在同一包装内与导电材料接触，导致发生短路。
— 设备必须在外包装内得到固定以免移动，并配备防止发生意外启动的有效装置。
— 每个包装件内的电池数目不得超过为设备供电所需的电池最小数量加上两个备用电池。
— 锂离子电池芯或电池必须：
  — 放入能将电池芯或电池完全封装的内包装内，然后再放入坚固的外包装当中；或
  — 放入能将电池芯或电池完全封装的内包装内，然后与设备一起放入坚固的外包装当中。
— 每个电池芯或电池包装件，或完成包装件，都必须能够承受从任何方向进行的1.2米跌落试验，而不会发生下列情况：
  — 使其中所装的电池芯或电池受损；
  — 内装物移动，以致电池与电池(或电池芯与电池芯)互相接触；
  — 内装物释出。

— 每个包装件必须贴有锂电池操作标签（图5-31）。
— 每批托运货物必须附带一份包括以下内容的文件：
  — 标明包装件内装有锂离子电池芯或电池；
  — 标明包装件必须小心轻放，如果包装件损坏，有着火的危险；
  — 标明如包装件受到损坏，必须遵守的特别程序，包括检查和必要时重新包装；和
  — 了解其他情况的电话号码；和
  — 如果使用了航空货运单，货运单上必须写明“锂离子电池 符合包装说明966第II部分”的字样。
— 为电池芯或电池进行运输准备或将其交付运输的人员，必须接受与其责任相符的关于这些要求的适当指示。

II.3 外包装

箱　　圆形桶　　方形桶

坚固的外包装

II.4 集合包装件

若将包装件集合成集合包装件，本包装说明要求的锂电池操作标签必须清晰可见；或者在集合包装件上粘贴锂电池操作标签，并标注 OVERPACK 字样。

包装说明 967

仅限于 UN 3481（安装在设备中）的客机和货机运输

1. 介绍

本条目适用于安装在设备中的锂离子或锂聚合物电池。

本包装说明第I节适用于归为第 9 类的锂离子和锂聚合物电池。符合本包装说明第II部分规定的锂离子和锂聚合物电池，在满足以下第 2 段的要求下，不受本细则其他规定的限制。

2 禁止运输的锂电池

以下规定适用于本包装说明涉及的所有锂离子电池芯和电池。

禁止运输由制造商查明为具有安全方面缺陷、或已经受损、可能会产生导致危险的热量、造成火情或短路的锂电池（例如那些出于安全原因退还给制造商的锂电池）。

I 第I节

第 I 节的要求适用于确定符合划入第 9 类的标准的每种电池芯或电池。

每个电池芯或电池必须满足下列要求：

1) 每个电池芯或电池的所属类型证明满足《联合国试验和标准手册》第 III 部分 38.3 小节规定的每项试验的要求；

注：无论电池所含的电池芯是否经受了此类试验，电池必须接受这些试验。

2) 装有安全排气装置，或其设计能防止在正常运输中难免发生的条件下猛烈破裂，并装有防止外部短路的有效装置。

3) 其制造要按照 2：9.3.1c）规定的质量管理体系进行。

包含并联的多个电池芯或电池芯系列的每个电池必须装有防止危险的反向电流所需的有效装置(例如二极管、保险丝等)。

I.1 一般要求

设备必须装在符合第 4;1.1.1, 1.1.3.1 和 1.1.10（但 1.1.10.1 除外）的坚固外包装当中。

UN 编号和运输专用名词	每个包装件的净量 (第 I 节)	
	客机	货机
UN3481 安装在设备中的锂离子电池	锂离子电池芯或电池 5 kg	锂离子电池芯或电池 35 kg

I. 2 补充要求

— 设备必须在外包装内得到固定以免移动，并配备防止发生意外启动的有效装置。
— 设备必须装入由适当材料构造的坚固外包装内，材料的强度和设计应与包装的容量和用途相符，除非装有电池的设备对电池提供了等效保护。
— 2011 年 12 月 31 日之后生产的电池必须在外壳上标明瓦时额定值。

I. 3 外包装

箱　　桶　　方桶

坚固的外包装

II. 第II节

除应遵守 1；2. 3（邮件运输危险品），7；4. 4（危险品事故事件的报告）以及 8；1. 1（旅客和机组携带危险品的规定）外，交运的装在设备中的锂离子电池芯和电池如果满足本包装说明第II节的要求，则不受本细则其他规定的限制。

锂离子电池芯和电池如果符合下列全部条件，则可交运：

1) 锂离子电池芯的瓦时额定值（见附录2的术语表）不超过20 Wh；
2) 锂离子电池的瓦时额定值不超过100 Wh；
   — 必须在电池盒外壳上标明瓦时额定值，但在2009年1月1日之前制造的电池除外。
3) 每个电池芯或电池的所属类型证明满足《联合国试验和标准手册》第 III 部分 38.3 小节规定的每项试验的要求。2014 年 1 月 1 日前生产的电池芯和电池，其型号符合《试验与标准手册》第 5 修订版 38.3 小节试验规定的，可以继续运输。

   注：无论电池所含的电池芯是否经受了此类试验，电池必须接受这些试验。

4）电池芯和电池的制造必须按照 2；9. 3. 1e）规定的质量管理体系进行。

射频识别（RFID）标签、手表和温度记录仪等不会产生危险热量的装置，在故意激活状态下可以运输。这些装置在激活状态下，必须满足规定的电磁辐射标准，确保装置的运行不会对航空器系统产生干扰。

II.1 一般要求

设备必须装在符合 4;1.1.1, 1.1.3.1 和 1.1.10(但 1.1.10.1 除外) 规定的坚固外包装当中。

内装物	包装件数内的数量	
	客机	货
每个包装件内的锂离子电池芯或电池净数量	5kg	5kg

II.2 补充要求

— 设备必须在外包装内加以固定，以免发生移动，并且配备防止发生意外启动的有效装置。
— 必须保护电池芯和电池防止发生短路。

— 设备必须装入由适当材料构造的坚固外包装内，材料的强度和设计应与包装的容量和用途相符，除非装有电池的设备对电池提供了等效保护。
— 每个包装件，如含有超过四个装在设备中的电池芯，或超过两个装在设备中的电池，则必须贴有锂电池操作标签（图5-31），但装在设备（包括线路板）中的纽扣式电池除外。
— 每批托运货物，如包含贴有锂电池操作标签的包装件，则必须附带一份包括以下内容的文件：
  — 标明包装件内装有锂离子电池芯或电池；
  — 标明包装件必须小心轻放，如果包装件损坏，有着火的危险；
  — 标明如包装件受到损坏，必须遵守的特别程序，包括检查和必要时重新包装；
  — 了解其他情况的电话号码；和
  — 如果使用了航空货运单，货运单上必须写明“锂离子电池，符合包装说明967第II部分”的字样。
— 为电池芯或电池进行运输准备或将其交付运输的人员，必须接受与其责任相符的关于这些要求的适当指示。

II.3 外包装

箱　　桶　　方桶

坚固的外包装

II.4 集合包装件

若将包装件集合成集合包装件，本包装说明要求的锂电池操作标签必须清晰可见；或者在集合包装件上粘贴锂电池操作标签，并标注 OVERPACK 字样。

包装说明 968

客机和货机运输 UN 3090

1 介绍

本条目适用于锂金属和锂合金电池。本包装说明结构如下：

第IA节适用于锂金属含量超过 1g的电池芯，以及锂金属含量超过 2g的电池，必须分类为第 9 类危险品并受本细则全部规定的限制；

第IB节适用于锂金属含量不超过 1g的电池芯，以及锂金属含量不超过 2g的电池，其数量超过了第II部分表 968-II中允许的数量；

第II节适用于锂金属含量不超过 1g的电池芯，以及锂金属含量不超过 2g的电池，其数量未超过第II部分表 968-II允许的数量。

2 禁止运输的锂电池

如下要求适用于本包装说明涉及的所有锂金属电池芯和电池。

禁止运输由制造商查明为具有安全方面缺陷、或已经受损、可能会产生导致危险的热量、造成火情或短路的锂电池（例如那些出于安全原因退还给制造商的锂电池）。

除非得到始发国和运营人所属国的国家有关当局批准，禁止航空运输废弃锂电池，以及为回收或处置目的运输的锂电池。

IA 第IA节

第IA节适用于锂金属含量超过 1g的电池芯，以及锂金属含量超过 2g的电池，必须分类为第 9 类危险品。

每个电池芯或电池必须满足下列要求：

1) 每个电池芯或电池的所属类型证明满足《联合国试验和标准手册》第 III 部分 38.3 小节规定的每项试验的要求；和

注：无论电池所含的电池芯是否经受了此类试验，电池必须接受这些试验。

2) 装有安全排气装置，或其设计能防止在正常运输中难免发生的条件下猛烈破裂，并装有防止外部短路的有效装置。

3) 其制造按照 2：9.3.1.e）要求的质量管理体系进行。

包含并联的多个电池芯或电池芯系列的每个电池必须装有防止危险的反向电流所需的有效装置（例如二极管、保险丝等）。

IA.1 一般要求

必须符合 4;1 的要求。

表 968-IA

UN编号和运输专用名词	每个包装件净数量	
	客机	货机
UN3090 锂金属电池	2.5 kg	35 kg

IA.2 补充要求

— 必须保护锂金属电池芯和电池以防短路。
— 锂金属电池芯和电池必须放入能将电池芯或电池完全封装的内包装内，然后再放入外包装。电池芯或电池的完成包装件必须符合II级包装的性能要求。
— 经始发国有关当局批准，质量超过 12 kg 且具有耐冲撞坚固外壳的锂金属电池或此类电池组件，可以放在不受本细则第 6 部分要求限制的坚固外包装和保护封罩中（如完全密闭的箱子或木质板条箱）进行运输。批准文件必须随附托运货物。
— 准备作为第 9 类用客机运输的锂金属电池芯和电池：
  — 交付客机运输的电池芯和电池必须装入中层或外层硬金属包装。
  — 必须用不燃烧、不导电的衬垫材料将电池和电池芯衰好，然后将其放入一个外包装内。

IA.3 外包装

箱	桶	方桶
铝（4B）	铝（1B2）	铝（3B2）
纤维板（4G）	纤维（1G）	塑料（3H2）
天然木（4C1，4C2）	塑料（1H2）	钢（3A2）
塑料（4H2）	胶合板（1D）	
胶合板（4D）	钢（1A2）	
再生木（4F）		
钢（4A）		

IB 第IB节

第IB节适用于锂金属含量未超过 1g的电池芯，以及锂金属含量未超过 2g的电池，但其数量超过了第II节表 968-II的数量限制。

超过第II节表 968-II数量限制的锂金属电池芯或电池，必须划为第 9 类，并且受本细则所有适用条款的限制（包括本包装说明的第 2 段，以及本节），如下部分例外：

— 本细则第 6 部分；和

— 在托运人提供了其他书面文件描述了托运物的情况下，第 5：4 节的危险品运输文件要求。在经营人同意的情况下，托运人可以通过电子数据传递或电子数据交换的形式提供这些信息。要求提供的信息要素及显示顺序如下：

1） 托运人和收获人得名称及地址

2） UN3090

3） 锂金属电池 PI 968 IB

4） 包装件的数量及每个包装件的毛重。

锂金属或锂合金电池芯和电池，若满足以下全部条件，可以交运。

1） 锂金属电池芯，锂含量不超过 1g

2） 锂金属或锂合金电池，合计锂含量不超过 2g；

3） 每个电池芯或电池型号应证明符合《联合国试验与标准手册》第III节第 38.3 小节的每项试验要求。2014 年 1 月 1 日前生产的电池芯和电池，其型号符合《试验与标准手册》第 5 修订版 38.3 小节试验规定的，可以继续运输。

注：无论电池性是否经过测试，其组成的电池必须经过测试。

4） 电池芯和电池的制造必须按照 2；9.3.1e）规定的质量管理体系进行。

IB.1 一般要求：

电池芯和电池必须装入符合 4；1.1.1， 1.1.3.1 以及 1.1.10（1.1.10.1 除外）的坚固外包装中。

表 968-IB

内装物	包装件内的数量	
	客机	货机
锂金属电池芯和电池	2.5kg G	2.5kg G

IB.2 补充要求

— 电池芯和电池必须装入能够将电池芯或电池完全封装的内包装内，然后装入坚固的外包装中。
— 必须保护电池芯和电池防止发生短路。这包括防止在同一包装内与导电材料接触，导致发生短路。
— 每个包装件都必须能够承受从任何方向进行的1.2米跌落试验，而不会发生下列情况：
  — 使其中所装的电池芯或电池受损；
  — 使内装物移动，以致电池与电池(或电池芯与电池芯)互相接触；
  — 内装物释出。
— 每个包装件除必须粘贴9类危险性标签外，还必须粘贴锂电池操作标签（图5-31）。
— 每批托运货物必须附带一份包括以下内容的文件：
  — 标明包装件内装有锂离子电池芯或电池；
  — 标明包装件必须小心轻放，如果包装件损坏，有着火的危险；
  — 标明如包装件受到损坏，必须遵守的特别程序，包括检查和必要时重新包装；和
  — 了解其他情况的电话号码；

IB.3 外包装

箱子 圆形桶 方形桶

坚固外包装

II 第II节

除应遵守 1；2.3（邮件运输危险品），7；4.4（危险品事故事件的报告）以及 8；1.1（旅客及机组携带危险品的规定）外， 交运的锂金属或锂合金电池芯和电池如果满足本包装说明第 2 段以及本节的要求，则不受本细则其他要求的限制。

锂金属或锂合金电池芯和电池如果符合下列全部条件，则可交运：

1) 对于锂金属电池芯，锂含量不超过1克；
2) 对于锂金属或锂合金电池，合计锂含量不超过2克；
3) 每一电池芯或电池所属类型证明满足《联合国试验和标准手册》第 III 部分 38.3 小节规定的每项试验的要求。2014 年 1 月 1 日前生产的电池芯和电池，其型号符合《试验与标准手册》第 5 修订版 38.3 小节试验规定的，可以继续运输。

注：无论电池所含的电池芯是否经受了此类试验，电池必须接受这些试验。

4) 电池芯与电池的制造应按照 2；9.3.1e）规定的质量管理体系进行。

II.1 一般要求

电池芯和电池必须装在符合 4;1.1.1, 1.1.3.1 和 1.1.10 (但 1.1.10.1 除外) 规定的坚固外包装当中。

表 968-II

内装物	锂含量不超过 0.3g的锂金属电池芯和/或电池	锂含量超过 0.3g但不超过1g的锂金属电池芯	锂含量超过 0.3g但不超过2g的锂金属电池
1	2	3	4
每个包装件内电池芯/电池的最大数量	不限制	8 块电池芯	2 块电池
每个包装件最大净数量（质量）	2.5kg	不适用	不适用

表 968-II中第 2,3,4 栏所列数量限制，不得在一个包装件内合并适用。

II.2 补充要求

— 电池芯和电池必须装在能够将电池芯或电池完全封装的内包装内，然后再放入坚固的外包装当中。
— 必须保护电池芯和电池防止发生短路。这包括防止在同一包装内与导电材料接触，导致发生短路。
— 每个包装件都必须能够承受从任何方向进行的1.2米跌落试验，而不会发生下列情况：
  — 使其中所装的电池芯或电池受损；
  — 使内装物移动，以致电池与电池(或电池芯与电池芯)互相接触；
  — 内装物释出。
— 每个包装件必须贴有锂电池操作标签（图5-31）。
— 每批托运货物必须附带一份包括以下内容的文件：
  — 标明包装件内装有锂金属电池芯或电池；
  — 标明包装件必须小心轻放，如果包装件损坏，有着火的危险；
  — 标明如包装件受到损坏，必须遵守的特别程序，包括检查和必要时重新包装；
  — 了解其他情况的电话号码；和
  — 如果使用了航空货运单，货运单上必须写明“锂金属电池，符合包装说明968第II部分”的字样。
— 为电池芯或电池进行运输准备或将其交付运输的人员，必须接受与其责任相符的关于这些要求的适当指示。

II.3 外包装

箱　　桶　　方桶

坚固的外包装

II.4 集合包装件

若将包装件集合成集合包装件，本包装说明要求的锂电池操作标签必须清晰可见；或者在集合包装件外粘贴锂电池操作标签及 OVERPACK 字样。

包装说明 969

仅限于 UN 3091（与设备包装在一起）的客机和货机运输

1 介绍

本条目适用于与设备包装在一起的锂金属或锂合金电池。

本包装说明第I部分适用于归为第 9 类的锂金属和锂合金电池芯及电池。一些交运的符合本包装说明第II部分的锂金属和锂合金电池芯及电池，若满足以下第 2 段的规定，则不受本细则其他规定的约束。

2 禁止运输的锂电池

如下规定适用于本包装说明涉及的所有锂金属电池芯和电池。

禁止运输由制造商查明为具有安全方面缺陷、或已经受损、可能会产生导致危险的热量、造成火情或短路的锂电池（例如那些出于安全原因退还给制造商的锂电池）。

I 第I节

第 I 节适用于符合划入第 9 类的标准的每种电池芯或电池。

每个电池芯或电池必须满足下列要求：

1) 每个电池芯或电池的所属类型证明满足《联合国试验和标准手册》第 III 部分 38.3 小节规定的每项试验的要求；和

注：无论电池所含的电池芯是否经受了此类试验，电池必须接受这些试验。

2) 装有安全排气装置，或其设计能防止在正常运输中难免发生的条件下猛烈破裂，并装有防止外部短路的有效装置。

3) 其制造按照 2；9.3.1e)规定的质量管理体系进行。

包含并联的多个电池芯或电池芯系列的每个电池必须装有防止危险的反向电流所需的有效装置（例如二极管、保险丝等）。

I.1 一般要求

必须符合 4;1 的要求。

UN 编号及运输专用名词	包装件内的数量（第 I 节）	
	客机	货机
UN3091 与设备包装在一起的锂金属电池	5 kg	35 kg

I.2 补充要求

— 必须保护锂金属电池芯和电池防止短路。
— 锂金属电池芯或电池必须：
  — 放入能将电池芯或电池完全封装的内包装内，然后再放入外包装当中。完成包装件必须满足II级包装的性能要求；或
  — 放入能将电池芯或电池完全封装的内包装内，然后与设备一起放入一个满足II级包装性能要求的包装件当中。
— 设备在外包装内必须加以固定，以免发生移动，并且必须配备防止发生意外启动的有效装置。

— 为本包装说明之目的，“设备”系指需要与其包装在一起的锂电池方可运行的装置。
— 对于准备作为第 9 类用客机运输的锂金属电池芯和电池：

— 交付客机运输的电池芯和电池必须放入中层包装或硬金属外壳包装，并用不燃烧、不导电的衬垫材料裹好，放入一个外包装内。

I.3 外包装

箱	桶	方桶
铝（4B）	铝（1B2）	铝（3B2）
纤维板（4G）	纤维（1G）	塑料（3H2）
天然木（4C1，4C2）	塑料（1H2）	钢（3A2）
塑料（4H2）	胶合板（1D）	
胶合板（4D）	钢（1A2）	
再生木（4F）		
钢（4A）		

II 第II节

除应遵守 1；2.3（邮件运输危险品）， 7；4.4（危险品事故事件的报告）以及 8；1.1（旅客与机组携带危险品的规定）外，与设备包装在一起交运的锂金属电池芯和电池如果满足本包装说明第 2 段以及本节的要求，则不受本细则其他要求的限制。

锂金属电池芯和电池如果符合下列全部条件，则可交运：

1) 对于锂金属电池芯，锂含量不超过1克；
2) 对于锂金属或锂合金电池，合计锂含量不超过2克；
3)每一电池芯或电池所属类型证明满足《联合国试验和标准手册》第 III 部分 38.3 小节规定的每项试验的要求。2014 年 1 月 1 日前生产的电池芯和电池，其型号符合《试验与标准手册》第 5 修订版 38.3 小节试验规定的，可以继续运输。

注：无论电池所含的电池芯是否经受了此类试验，电池必须接受这些试验。

4）电池芯和电池的制造应按照 2；9.3.1e）规定的质量管理体系进行。

II.1 一般要求

电池芯和电池必须装在符合 4;1.1.1, 1.1.3.1 和 1.1.10 (但 1.1.10.1 除外) 规定的坚固外包装当中。

内装物	包装件内的数量（第II节）	
	客机	货机
每个包装件内的锂金属电池芯或电池的净数量	5kg	5kg

II.2 补充要求

— 电池芯和电池必须装在能够将电池芯或电池完全封装的内包装内。
— 必须保护电池芯和电池防止发生短路。这包括防止在同一包装内与导电材料接触，导致发生短路。
— 必须对设备加以固定，防止其在外包装内移动，并必须采取防止意外启动的有效措施。
— 每个包装件内的电池数目不得超过为设备供电所需的电池最小数量加上两个备用电池。
— 锂金属电池芯或电池必须：
  — 放入能将电池芯或电池完全封装的内包装内，然后再放入坚固的外包装当中；或
  — 放入能将电池芯或电池完全封装的内包装内，然后与设备一起放入坚固的外包装当中。
— 每个电池芯或电池包装件，或完成包装件，都必须能够承受从任何方向进行的1.2米跌落试验，而不会发生下列情况：
  — 使其中所装的电池芯或电池受损；
  — 使内装物移动，以致电池与电池(或电池芯与电池芯)互相接触；
  — 内装物释出。
— 每个包装件必须贴有锂电池操作标签（图5-31）。
— 每批托运货物必须附带一份包括以下内容的文件：
  — 标明包装件内装有锂金属电池芯或电池；

— 标明包装件必须小心轻放，如果包装件损坏，有着火的危险；
— 标明如包装件受到损坏，必须遵守的特别程序，包括检查和必要时重新包装；
— 了解其他情况的电话号码；和
— 如果使用了航空货运单，货运单上必须写明“锂金属电池， 符合包装说明969第II部分”的字样。
— 为电池芯或电池进行运输准备或将其交付运输的人员，必须接受与其责任相符的关于这些要求的适当指示。

II.3 外包装

箱　　桶　　方桶

坚固的外包装

II. 4 集合包装件

若包装件集合成集合包装件，本包装说明要求的锂电池操作标签必须清晰可见；或者在集合包装外粘贴锂电池操作标签及OVERPACK 字样。

包装说明 970

仅限于 UN 3091（装在设备中）的客机和货机运输

1 介绍

本条目适用于安装在设备中的锂金属或锂合金电池。

本包装说明第I部分适用于归为第9类的安装在设备中的锂金属或锂合金电池。某些交运的符合本包装说明第II部分的锂金属或锂合金电池或电池芯，若符合以下第2段的要求，则不受本细则其他规定的限制。

2 禁止运输的锂电池

以下要求适用于本包装说明涉及的所有锂金属电池芯和电池。

禁止运输由制造商查明为具有安全方面缺陷、或已经受损、可能会产生导致危险的热量、造成火情或短路的锂电池（例如那些出于安全原因退还给制造商的锂电池）。

I 第I节

第 I 节的要求适用于确定符合划入第 9 类的标准的每种电池芯或电池。

每个电池芯或电池必须满足下列要求：

1) 每个电池芯或电池的所属类型证明满足《联合国试验和标准手册》第 III 部分 38.3 小节规定的每项试验的要求；

注：无论电池所含的电池芯是否经受了此类试验，电池必须接受这些试验。

2) 装有安全排气装置，或其设计能防止在正常运输中难免发生的条件下猛烈破裂，并装有防止外部短路的有效装置。

3) 其制造应按照 2；9.3.1e）的质量管理体系进行。

包含并联的多个电池芯或电池芯系列的每个电池必须装有防止危险的反向电流所需的有效装置(例如二极管、保险丝等)。

I.1 一般要求

设备必须装在符合第 4;1.1.1, 1.1.3.1 和 1.1.10（但 1.1.10.1 除外）的坚固外包装当中。

UN 编号和运输专用名词	每件设备的净量（第 I 节）	
	客机	货机
UN3091 安装在设备中的锂金属电池	锂金属电池芯或电池 5 kg	锂金属电池芯或电池 35 kg

I.2 补充要求

— 设备必须在外包装内得到固定以免移动，并且必须配备防止发生意外启动的有效装置。
— 设备必须装入由适当材料构造的坚固外包装内，材料的强度和设计应与包装的容量和用途相符，除非装有电池的设备对电池提供了等效保护。
— 任何一件设备中的锂金属含量，对于每个电池芯而言不得超过 12 克，对于每个电池而言不得超过 500 克。

I.3 外包装

箱　　桶　　方桶

坚固的外包装

II 第II节

除应遵守 1；2.3（邮件运输危险品）， 7；4.4（危险品事故事件的报告）以及 8；1.1（旅客和机组携带危险品的规定）外， 装在设备中交运的锂金属电池芯和电池如果满足本包装说明第 2 段以及本节的要求，则不受本细则其他要求的限制。

锂金属电池芯和电池如果符合下列全部条件，则可交运：

1) 对于锂金属电池芯，锂含量不超过1克；
2) 对于锂金属或锂合金电池，合计锂含量不超过2克；
3)每个电池芯或电池所属类型证明满足《联合国试验和标准手册》第 III 部分 38.3 小节规定的每项试验的要求。2014 年 1 月 1 日前生产的电池芯和电池，其型号符合《试验与标准手册》第 5 修订版 38.3 小节试验规定的，可以继续运输。注：无论电池所含的电池芯是否经受了此类试验，电池必须接受这些试验。

4) 电池芯和电池的制造必须按照 2；9.3.1e）规定的质量管理体系进行。

射频识别（RFID）标签、手表和温度记录仪等无法产生危险热量的装置，在故意激活状态下可以运输。这些装置在激活状态下，必须满足规定的电磁辐射标准，确保装置的运行不会对航空器系统产生干扰。

II.1 一般要求

含有电池的设备必须装在符合 4;1.1.1, 1.1.3.1 和 1.1.10 (但 1.1.10.1 除外) 规定的坚固外包装当中。

内装物	包装件内数量（第II节）	
	客机	货机
每个包装件内锂金属电池芯或电池的净数量	5kg	5kg

II.2 补充要求

— 设备必须在外包装内得到固定以免移动，并且必须配备防止发生意外启动的有效装置。
— 必须保护电池芯和电池防止发生短路。
— 设备必须装入由适当材料构造的坚固外包装内，材料的强度和设计应与包装的容量和用途相符，除非装有电池的设备对电池提供了等效保护。
— 每个包装件，如含有超过四个装在设备中的电池芯，或超过两个装在设备中的电池，则必须贴有锂电池操作标签（图 5-31）（但装在设备（包括线路板）中的纽扣式电池除外）。

— 每批托运货物，如包含贴有锂电池操作标签的包装件，则必须附带一份包括以下内容的文件：
  — 标明包装件内装有锂金属电池芯或电池；
  — 标明包装件必须小心轻放，如果包装件损坏，有着火的危险；
  — 标明如包装件受到损坏，必须遵守的特别程序，包括检查和必要时重新包装；
  — 了解其他情况的电话号码；和
  — 如果使用了航空货运单，货运单上必须写明“锂金属电池，符合包装说明970第II部分”的字样。
— 为电池芯或电池进行运输准备或将其交付运输的人员，必须接受与其责任相符的关于这些要求的适当指示。

11.3 外包装

箱　　桶　　方桶

坚固的外包装

11.4 集合包装件

若包装件集合成集合包装件，本包装说明要求的锂电池操作标签必须清晰可见；或者在集合包装件外粘贴锂电池操作标签及 PVERPACK 字样。

第 5 部分 托运人责任

第 3 章 标记

3.5.2.2 锂电池操作标签

按照包装说明 965 至 970 包装且不受本细则其他要求限制的含有锂电池的包装件，必须按照有关包装说明的要求，粘贴图 5-31 所示的“锂电池”操作标签。标签的最小尺寸必须为 120 mm x 110 mm，但如果含有锂电池的包装件尺寸仅允许粘贴较小的标签，可以在这些包装件上粘贴 74 mm x 105 mm 的标签。标签必须酌情标明“锂金属电池”或“锂离子电池”。如果包装件含有这两种类型的电池，则标签必须标明“锂金属和锂离子电池”。含有符合包装说明 965 和 968 第 IB 节锂电池的包装件，必须粘贴锂电池操作标签图 5-31 及第 9 类危险品标签图 5-23。

第 7 部分 经营人责任

4.11 文件或信息的保留

4.11.1 经营人必须保证将至少一份危险品货物空运的相关文件或信息保存至危险物品运输后最短三个月。最低限度必须保存的文件或信息包括危险物品运输文件、收运检查单（如检查单为需要具体填写的表格形式），书面的机长通报单，对于按照包装说明 965 和 968 第 IB 节运输货物的替代文件，或文件上提供的信息。这些文件或信息，在有关国家当局要求时，必须予以提供。

附录 B

建议对《技术细则》与锂电池在邮件中运输相关条款的修订

第一部分
概论

.....

第二章
对航空器上危险物品的限制

.....

2.3 危险物品的邮寄运输

2.3.1 根据《万国邮政联盟公约》，除以下列明的危险物品外，本细则定义的危险物品不允许在邮件中运输。国家有关当局应确保在危险物品航空运输方面遵守有关规定。

2.3.2 以下危险物品可作为邮件进行航空运输，但须受国家有关当局的规定和本细则有关这些物品的规定的限制：

a) 2; 6.3.1.4 所规定的病原标本，但它们必须按照 2; 6.3.2.3.6 的要求加以分类、包装和加标记；

b) 仅划入 B 类（UN 3373）并按照包装说明 650 的要求包装的感染性物质和用作 UN 3373 冷冻剂的固体二氧化碳 (干冰) ；和

c) 放射性活度未超过表 2-15 中所列活度 1/10 的放射性物质。

d) 符合包装说明 967 第二部分要求的安装在设备中的锂离子电池（UN3481）。单个包装件中装有不超过 4 个电池芯或 2 块电池时可以进行邮寄。

e) 符合包装说明 970 第二部分要求的安装在设备中的锂金属电池（UN3091）。单个包装件中装有不超过 4 个电池芯或 2 块电池时可以进行邮寄。

2.3.3 指定邮政经营人用以控制危险品装入邮件并进行航空运输的程序应交由邮件接收地国家的民用航空主管当局进行审查和批准。

2.3.4 只有在收到民用航空主管当局颁发的特殊许可后，指定邮政经营人方可接收本细则 2.3.2 d)及e)款列明的锂电池进行航空运输。

注 1：指定邮政经营人接收 2.3.2 a)， b)及c)款列明的危险品进行航空运输时，可无需获得民用航空主管当局的特殊批准。

注 2：供相关国家主管当局及民用航主管当局使用的指南在本细则补篇（S-1;3）中列明。

第三章
一般说明

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3.1 定义

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指定邮政经营人：由万国邮政联盟成员国官方指定的在其领土内提供邮政服务并履行万国邮政联盟公约条款规定的相关义务的政府或非政府的实体。

第四章
培训

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4.1 培训计划的制定

4.1.1 危险物品初训和复训的培训计划必须由如下人员和机构，或代表他们，制定和实施：

a) 危险物品的托运人，包括包装人和承担托运人责任的个人或组织；

b) 运营人；

c) 代表运营人从事货物、邮件或供应品的接收、搬运、装卸、转运或其他处理工作的地面服务代理机构；

d) 驻地在机场，代表运营人从事客运服务的地面服务代理机构；

e) 驻地不在机场，代表运营人办理旅客乘机手续的代理机构；

f) 货运代理人；和

g) 对旅客及其行李和/或货物、邮件或供应品进行安全检查的机构；和

h) 指定邮政经营人。

4.1.2 4.1.1 b) 所要求的危险物品培训计划必须经运营人所属国有关国家主管当局的审查和批准。4.1.1 h)要求的危险品培训计划必须由指定邮政经营人接收邮件所在地国家的民用航空主管当局进行审查和批准。对于非 4.1.1 b) 和 4.1.1 h)所要求的培训计划应按国家有关当局的决定进行审查和批准。

4.2 培训课程

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4.2.2 表 1-4、表 1-5 或表 1-6 规定类别的人员，在履行表 1-4、表 1-5或表 1-6规定的任何职责之前，必须受过培训，或者必须核实其受过培训。

……

4.2.8 指定邮政经营人所属员工必须接受与其职责相符的培训。表 1-6 列出了各类员工应该熟悉的课程内容。

表 1-6 指定邮政经营人员工的培训课程内容

关于危险物品航空运输，至少应熟悉的方面	指定邮政经营人		
	A	B	C
基本原理	×	×	×
限制条款	×	×	×
对托运人的一般要求	×		
分类	×		
危险物品表	×		
包装要求	×		
标签与标记	×	×	×
危险物品运输文件及其他有关文件	×	×	
1；2.3.2 列明危险品的收运	×		
对未申报危险物品的识别	×	×	×
储存及装载程序			×
对旅客及机组成员的规定	×	×	×
紧急程序	×	×	×

说明：

A — 从事收运含危险物品邮件的指定邮政经营人的员工
B — 从事邮件（非危险物品）收运工作的指定邮政经营人的员工
C — 从事邮件搬运、储存和装载工作的指定邮政经营人的员工

注 —在本细则补篇S-1；3 中列明了指定邮政经营人员工应接受培训内容的指南。

附录 C

建议对《技术细则》补篇与锂电池在邮件中运输相关条款的修订

第 S-1 部分

（《技术细则》第一部分的补充内容）

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第三章

邮件中运输危险品的国家指南

3.1 引言

3.1.1 芝加哥公约附件 18，《危险物品的安全航空运输》要求除其他外，国家应建立相应的程序，以控制其指定邮政经营人将危险品装入邮件并进行航空运输。在指定邮政经营人将危险品装入邮件进行航空运输之前，这些程序必须经指定邮政经营人接收含危险品邮件所在地国家的民用航空主管当局的批准。以下的指南将协助民用航空主管当局来评估和批准他们国家指定邮政经营人建立的程序。

3.1.2 《技术细则》第一部分 2.3 列明了在符合相关国家主管当局，包括民用航空主管当局及《技术细则》规定前提下，使用航空运输的邮件可以接收的危险品。

3.2 程序的评估

3.2.1 此评估的目的是确保指定邮政经营人建立的控制危险品装入邮件并进行航空运输的程序符合相关要求。

3.2.2 此评估应确保指定邮政经营人建立了如下程序：

a) 依据《技术细则》1；4 对员工进行培训；

b) 向民用航空主管当局报告危险品事故及事故征候；

c) 向民用航空主管当局报告隐含及未申报危险品；

d) 在收运点（如街头邮箱、邮局、代理点、网站）对客户进行信息告知的规定；

e) 向账户客户提供有关危险品信息的规定；

f) 与账户客户签订的合同内包括禁止在邮件中含有的危险品的条款；

g) 应急程序；

h)文件的保存（如干冰收运检查单）；

i) 为员工提供收运《技术细则》1；2.3 允许的危险品时的程序文件；

j) 要求含危险品的包装件附有发运人姓名、地址及签名的程序；

k) 确认《技术细则》附录 3 中列明的所有国家或运营人差异均得到遵守的程序；

l) 确保《技术细则》所有修订均可以被纳入现有程序的程序；和

m) 处理被拒绝运输的包装件的程序。

3.3 培训

3.3.1 指定邮政经营人的员工应接受与其职责相符的工作要求方面的培训。

3.3.2 根据人员的职责，培训课程可与表 1-6 中包括的内容有所不同。因此，在收运《技术细则》第一部分 2.3.2 中允许的危险物品时，指定邮政经营人的员工只需接受允许在邮件中接收的特定危险物品收运的培训即可，无需接受所有类别危险物品收运的培训。

3.3.3 《技术细则》表 1-6 所列各类人员并不完全。例如，仅负责处理信函、信件或印刷品等不可能含有危险品物品邮件的指定邮政经营人的员工无需接受培训。

报:局领导,总飞行师。

送:局内各部门,民航各地区管理局及各监管局,各航空公司,各机场公司,服务保障企业,民航科学技术研究院,民航报社。

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