



WORKING PAPER

**DANGEROUS GOODS PANEL (DGP)
MEETING OF THE WORKING GROUP OF THE WHOLE**

Atlantic City, United States, 4 to 8 April 2011

Agenda Item 5: Resolution, where possible, of the non-recurrent work items identified by the Air Navigation Commission or the panel:

5.2: Development of provisions for the carriage of dangerous goods on helicopters

**DEVELOPMENT OF PROVISIONS FOR THE CARRIAGE OF DANGEROUS GOODS BY
HELICOPTERS**

(Presented by G.A. Leach)

SUMMARY

This paper contains draft amendments to the Technical Instructions and the Supplement to the Technical Instructions as a result of DGP-WG/10-WP/27, DGP-WG/10-Flimsy No.4 and subsequent discussions.

Action by the DGP-WG is in paragraph 2.

1. INTRODUCTION

1.1 DGP-WG/10-WP/27 concerned the subject of the transport of dangerous goods by helicopters. That working paper was discussed by the Helicopter Working Group in Abu Dhabi, which resulted in DGP-WG/10-Flimsy No. 4 showing the decisions agreed in principle and where further work was required. Following DGP-WG/10, a meeting of a small number of members of the Helicopter Working Group was held to draft the proposed amendments to the applicable documents and these can be seen in the appendix to this working paper.

1.2 During the drafting of the appendix, there were some decisions made concerning the proposed text which differ from the text proposed in Flimsy No. 4. The reasons for these are explained in paragraph 2 below for consideration by the DGP, together with any areas that require further discussion.

2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to review the proposed text in the appendix together with the explanations below and consider any of the areas identified as requiring further discussion:

Part 1;1.1.1 The text that was originally proposed in DGP-WG/10-WP/27 referred to “both fixed wing aircraft and helicopters”. Flimsy No.4 noted that the terms “fixed wing aircraft” and “aeroplane” had been used in various places and suggested that a consistent approach should be adopted. It is proposed that simply stating “by any aircraft” will adequately describe what is intended.

Note 2 Unchanged from text previously agreed, except to add correct reference.

Part 1;1.1.4.1c) DGP-WG/10-WP/27 originally proposed the addition of “avalanche control” to the list of activities that are excepted from the requirements of the Technical Instructions. Discussions at the Working Group in Abu Dhabi suggested that there may be other activities that are equally relevant, but because they are not specifically listed in 1;1.1.4.1c), would not be excepted from the Technical Instructions, although it was also suggested that it would be difficult to list every possible eventuality. The Appendix to this working paper proposes two possible alternatives. The first includes the current list of exceptions, together with the addition of ‘avalanche control’ but also includes ‘other specialised activities’. The second alternative removes reference to any specific type of operation, and replaces them with the term ‘specialised activities’ on the basis that it should be for the State concerned to consider which other activities should fall within these exceptions. In addition, it is suggested that these specialised activities should be only those approved by the State of the Operator (as a State approves any such operation), although the DGP-WG is asked to discuss whether these exceptions should also be approved by the State of Origin.

Part 3;3.1 The definition of the term ‘external carriage’ was agreed in principle at DGP-WG/10, subject to it aligning with other ICAO publications if the term is used elsewhere. No other ICAO definition has been found (although the Secretary is asked to confirm this is correct). It is proposed that the words ‘beneath an aircraft’ are not needed. Although it was questioned in the Working Group in Abu Dhabi whether the term ‘sling-loading’ should be used in place of ‘underslung’, neither term appears to be used in Annex 6; the words ‘sling load force’ are used, but only in the context of the load force applied to a sling. Therefore, the proposed use of the word underslung has been retained throughout the Appendix as the term tends to be the one used in practice.

Part 4; Introductory Note 11 In DGP-WG/10-Flimsy No. 4, Note 11 referred to ‘carriage external to helicopters’. This has been amended to apply to ‘Open external carriage’ and to refer to the type of packaging used in order to address the comments of the Helicopter Working Group.

- Part 7;2.1.3 No change from the text previously agreed other than to include specific reference to Part 7;7.
- Part 7;2.4.1.1 The Helicopter Working Group pointed out that 7;2.4.1 currently refers to ‘carriage on a cargo aircraft’, which effectively prohibits carriage beneath/external to an aircraft. This has been addressed by referring to loading for carriage by an aircraft
- Part 7;2.4.1.1d) The text has been amended to simply refer to the term ‘external carriage’, which is defined.
- Part 7;2.4.1.1e) Both during and since DGP-WG/10, some discussions have taken place concerning the carriage of dangerous goods bearing ‘Cargo aircraft only’ labels in the cabin of helicopters where there is only one crew member on board. Although such dangerous goods could not be said to meet 7;2.4.1.1c) since the pilot would not be able to leave their seat, a helicopter generally has the ability to land quickly in the event of an emergency. Therefore, it is proposed that carriage be allowed in the cabin of single crew helicopters, with the approval of the State of the Operator. Additionally, the DGP-WG is invited to consider whether the approval of the States of Origin and/or Destination should also be required.
- Part 7;4.1.5 At DGP-WG/10, it was generally agreed that there are circumstances when it may not be possible to provide the pilot-in-command of a helicopter with written information (NOTOC) about the dangerous goods being carried. These circumstances were explained in paragraph 2.7.1 of the Appendix to DGP-WG/10-WP/27. The DGP-WG is invited to consider the proposed text and whether this should be with the approval of just the State of the Operator, or whether approval from the States of Origin and/or Destination should also be sought.
- Part 7;4.8 DGP-WG/10-Flimsy No. 4 noted that there was general agreement that there are some circumstances where the information provided in the Emergency Response Guidance Document would not be appropriate for helicopter operations and that it would be appropriate to allow for abbreviated information to be included in the Operations Manual. The DGP-WG is invited to consider the proposed text.
- Part 7;7 A new Chapter within Part 7, specific to helicopter operations, was agreed in principle at DGP-WG/10, subject to some amendments as noted in DGP-WG/10-Flimsy No.4. These have been addressed, although in paragraph 7.1.3, reference is made only to underslung loads rather than all external loads, since it is understood that consideration of static discharge would not apply to items in external compartments. In addition, the DGP-WG is invited to consider which States should need to grant the approval referred to in 7.1.1.
- Part S-7;2.2 DGP-WG/10-WP/27 (paragraph 2.6.1.1) raised the subject of whether the cargo/baggage holds of helicopters are considered to be ‘main deck

cargo compartments' and Flimsy No.4 asked that Panel Members discuss the matter within their States in preparation for WG/11. This still needs to be discussed, but whatever the conclusion, where particular helicopter compartments are deemed to be main deck cargo compartments that do not meet the requirements of a Class B or C compartment, the facility already exists for States to grant approval for some limited dangerous goods to be loaded, in accordance with Part S-7;2.2. It is suggested however, that whilst the list of dangerous goods in S-7;2.2.2 and the restriction to packing group III in S-7;2.2.3 may be appropriate for fixed wing aircraft, there is some justification for permitting additional types of dangerous goods and other packing groups in helicopters. The Appendix to this working paper therefore proposes 2 options for an additional paragraph S-7;2.2.4, the first one allowing the State to decide which additional types of dangerous goods and packing groups are appropriate for approval based upon the circumstances of the operation involved, and the second option being more specific as to which packing groups may be subject to approval. If the second option is preferred, the DGP-WG is invited to consider whether this should just be packing Group II, or should also include packing group I dangerous goods.

Part S-7;2.3

As a consequence of the proposed Part 7;2.4.1e), guidance to the applicable States for the granting of an approval for the carriage of dangerous goods bearing the "Cargo aircraft only" label in the cabin of a single-crew cargo helicopter is proposed.

Part S-7;4.8

As a consequence of the proposed Part 7;4.1.5, which provides for the ability for State(s) to grant approval where it is impractical for the pilot in command to be given a written or printed NOTOC, text is proposed to give guidance to States explaining the circumstances when such an approval would be appropriate.

*Emergency Response
Guidance for Aircraft
Incidents Involving Dangerous
Goods (Doc 9481)*

At DGP-WG/10, it was noted that further work would be carried out to review the need for specific reference to helicopter operations within Doc 9481. Having reviewed the existing text, and bearing in mind the proposed new text in Part 7;4.8 of the Technical Instructions, it is not proposed to amend Doc 9481 at this stage.

APPENDIX

DANGEROUS GOODS AND HELICOPTERS

1. ANNEX 18 – THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR

1.1. No amendments to Annex 18 – The Safe Transport of dangerous goods by Air are proposed.

2. TECHNICAL INSTRUCTIONS FOR THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR (DOC 9284)

2.1 Part 1; Chapter 1

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1.1 GENERAL APPLICABILITY

1.1.1 These *Technical Instructions for the Safe Transport of Dangerous Goods by Air*, referred to herein as the "Instructions", prescribe the detailed requirements applicable to the international civil transport of dangerous goods by air by any aircraft (including both internal and external carriage). Any addenda to this edition of the ICAO *Technical Instructions for the Safe Transport of Dangerous Goods by Air* issued by ICAO constitute part of these Instructions.

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1.1.3 In instances of extreme urgency or when other forms of transport are inappropriate or full compliance with the prescribed requirements is contrary to public interest, the States concerned may grant an exemption from the provisions of the Instructions provided that in such instances an overall level of safety in transport which is at least equivalent to the level of safety provided for in these Instructions is achieved. For the purposes of exemptions, "States concerned" are the States of Origin, Operator, transit, overflight and destination. For the State of overflight, if none of the criteria for granting an exemption are relevant, an exemption may be granted based solely on whether it is believed that an equivalent level of safety in air transport has been achieved.

Note 1.— Refer to 1;2.1 for dangerous goods forbidden for transport by air under any circumstance.

Note 2. – Due to the differences in the type of operations carried out by helicopters compared with aeroplanes, some additional considerations need to be made when dangerous goods are carried by helicopter, as described in 7:7.

1.1.4 General exceptions

1.1.4.1 Except for 7;4.2, these Instructions do not apply to dangerous goods carried on an aircraft where the dangerous goods are:

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c) for dropping in connection with agricultural, horticultural, forestry, avalanche control or pollution control activities or other specialised activities with the approval of the [State of Origin, and the State of the Operator];

or

- c) for dropping in connection with ~~agricultural, horticultural, forestry or pollution control activities~~ specialised activities with the approval of the [State of Origin, and the] State of the Operator;

2.2 Part 1; Chapter 3

3.1 DEFINITIONS

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External carriage. Any load carried underslung [beneath an aircraft] or in equipment attached to an aircraft

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2.3 Part 4; Introductory Notes

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Note 11. – Open External Carriage

When dangerous goods are prepared for open external carriage (i.e. underslung or in open external carrying devices), consideration should be given to the type of packaging used and protection of those packagings where necessary from the effects of weather (e.g. by damage from rain or snow).

2.4 Part 7; Chapter 2

Chapter 2

STORAGE AND LOADING

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2.1.2 Under the conditions specified in S-7;2.2 of the Supplement, the State of Origin and the State of the Operator may approve the transport of dangerous goods in main deck cargo compartments of passenger aircraft that do not meet the requirements in 2.1.1.

Note.— Cargo compartment classification is described in the ICAO document Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (Doc 9481).

2.1.3 For additional requirements concerning the loading of dangerous goods for carriage by helicopters, see Part 7;7.

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2.4 LOADING AND SECURING OF DANGEROUS GOODS

2.4.1 Loading ~~on~~ of cargo aircraft

2.4.1.1 Packages or overpacks of dangerous goods bearing the “Cargo aircraft only” label must be loaded ~~on~~ for carriage by a cargo aircraft in accordance with one of the following provisions:

- a) in a Class C aircraft cargo compartment; or
- b) in a unit load device equipped with a fire detection/suppression system equivalent to that required by the certification requirements of a Class C aircraft cargo compartment as determined by the appropriate national authority (a ULD that is determined by the appropriate national authority to meet the Class C aircraft cargo compartment standards must include “Class C compartment” on the ULD tag); or
- c) in such a manner that in the event of an emergency involving such packages or overpacks, a crew member or other authorized person can access those packages or overpacks, and can handle and, where size and mass permit, separate such packages or overpacks from other cargo-or
- d) external carriage by a helicopter; or

e) with the approval of the [State of Origin, State of Destination and] State of the Operator, for single crew helicopter operations, in the cabin.

Note.— Cargo compartment classification is described in the ICAO document Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (Doc 9481).

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2.5

Part 7; Chapter 4

Chapter 4

PROVISION OF INFORMATION

4.1 INFORMATION TO THE PILOT-IN-COMMAND

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4.1.5 This information provided to the pilot-in-command should be presented on a dedicated form and should not be by means of air waybills, dangerous goods transport documents, invoices, etc., except that with the approval of the [State of Origin, State of Destination and] State of the Operator, for helicopter operations, the notification to the pilot-in-command may be abbreviated or be by other means (e.g. radio communication, as part of the working flight documentation such as a Journey Log or Operational Flight Plan) where circumstances make it impractical to produce written or printed information or on a dedicated form.

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4.8 EMERGENCY RESPONSE INFORMATION

4.8.1 The operator must ensure that for consignments for which a dangerous goods transport document is required by these Instructions, appropriate information is immediately available at all times for use in emergency response to accidents and incidents involving dangerous goods in air transport. The information must be available to the pilot-in-command and can be provided by:

- a) the ICAO document *Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods* (Doc 9481); or
- b) any other document which provides similar information concerning the dangerous goods on board.

4.8.2 For helicopter operations, the emergency response information required by 4.8.1 may be contained in the Operations Manual and may be in an abbreviated form.

Note — For some helicopter operations, the abbreviated emergency response information may simply be to land the helicopter as soon as possible.

2.6

Part 7; Chapter 7

Chapter 7

HELICOPTER OPERATIONS

7.1.1 Due to the differences in the type of operations carried out by helicopters compared with aeroplanes, there may be circumstances when the full provisions of the Technical Instructions are not appropriate or necessary, such as some operations involving un-manned sites, remote locations, mountainous areas or construction sites etc. In such circumstances, the [State of Origin, State of Destination and] State of the Operator may grant an approval in order to permit such operations without all of the normal requirements of the Technical Instructions being fulfilled. Further information about the granting of such approvals is contained in Part S-7 of the Supplement.

7.1.2 When loading dangerous goods for external carriage by a helicopter, consideration should also be given to the type of packaging used and protection of those packagings where necessary from the effects of weather (e.g. by damage from rain or snow), in addition to the general loading provisions of 7.2.

2.7 Supplement Part S-7; Chapter 2

7.1.3 When dangerous goods are carried as underslung loads by a helicopter, the operator must ensure that consideration is given to the dangers of static discharge upon landing or release of the load.

Chapter 2

STORAGE AND LOADING

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2.2 LOADING ON A PASSENGER AIRCRAFT

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2.2.4 For helicopter operations, the [State of Origin and the] State of the Operator may approve the carriage of dangerous goods other than those in 2.2.2 and 2.2.3. When such an approval is to be granted, States should consider the factors that may mean carriage within the cabin is required, or preferable, such as the size/mass of packages making it impractical to carry them as an under-slung load, accessibility to the packages, duration of the flight, and whether or not the passengers are associated with the dangerous goods.

Or

2.2.4 For helicopter operations, the [State of Origin and the] State of the Operator may approve the carriage of dangerous goods other than those in 2.2.2 and in packing group[s I and] II, When such an approval is to be granted, States should consider the factors that may mean that carriage within the cabin is required, or preferable, such as the size/mass of packages meaning that it may be impractical to carry them as an under-slung load, accessibility to the packages, duration of the flight, and whether or not the passengers are associated with the dangerous goods.

Renumber subsequent paragraphs accordingly

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2.3 LOADING ON A HELICOPTER CARRYING ONLY CARGO

2.3.1 Part 7:2.4.1e) of the Technical Instructions provides that with the approval of the [State of Origin and the] State of the Operator, dangerous goods bearing the "Cargo aircraft only" label can be carried in the cabin of a single-crew helicopter. When such an approval is to be granted, States should take into account the reason for the need for the dangerous goods to be carried in the cabin, such as the size/mass of the packages making it impractical to carry them as an underslung load, the duration of flight and the possibility of the helicopter being able to land quickly in the event of an incident involving the dangerous goods.

2.8 Supplement Part S-7; Chapter 4

Chapter 4

PROVISION OF INFORMATION

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4.8 INFORMATION TO THE PILOT-IN-COMMAND FOR HELICOPTER OPERATIONS

4.8.1 Part 7:4.1.5 of the Technical Instructions provides that with the approval of the [State of Origin, State of Destination and] State of the Operator, for helicopter operations, where circumstances make it impractical to produce written or printed information or on a dedicated form, the notification to the pilot-in-command may be abbreviated or be by other means (e.g. radio communication, as part of the working flight documentation such as a Journey Log or Operational Flight Plan etc). Examples of such circumstances include:

- When the helicopter does not land in order to pick up the dangerous goods, such that it is not possible to provide written information at that location;
- Where the helicopter is in-flight and the planned load is changed prior to being picked up without the helicopter landing;
- When short, repetitive flights, or a series of flights from different locations are undertaken by a helicopter, where it is impractical to provide separate written information for each flight;

- Where dangerous goods are picked up from an un-manned site

4.8.2 When granting such an approval, States should consider all of the circumstances under which the approval is being sought, the minimum information that should be provided to the pilot-in-command and the procedures that the operator would implement to ensure that the information is provided and recorded.

3. **EMERGENCY RESPONSE GUIDANCE FOR AIRCRAFT INCIDENTS INVOLVING DANGEROUS GOODS (DOC 9481)**

3.1 No amendments to the Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods are proposed.

— END —