



International
Civil Aviation
Organization

Organisation
de l'aviation civile
internationale

Organización
de Aviación Civil
Internacional

Международная
организация
гражданской
авиации

منظمة الطيران
المدني الدولي

国际民用
航空组织

Tel.: +1 514-954-8219 ext. 6011

Ref.: AN11/6.1.10-23/57

26 July 2023

Subject: Proposed amendments to Annexes 2, 3, 4, 6, Parts I, II and III, 10 Volume I, 11, 15, PANS-ATM, PANS-AIM and PANS-OPS, Volume III related to general aviation helicopters, on-board technology for runway safety, ramp inspections and end of flight location arising from the eighth and ninth meetings of the Flight Operations Panel (FLTOPSP/8 and 9)

Action required: Comments to reach Montréal by 31 January 2024

Sir/Madam,

1. I have the honour to inform you that the Air Navigation Commission (ANC), at the sixth meeting of its 223rd Session held on 13 June 2023, considered a preliminary review of proposed amendments to Annex 2 — *Rules of the Air*, Annex 3 — *Meteorological Service for International Air Navigation*, Annex 4 — *Aeronautical Charts*, Annex 6 — *Operation of Aircraft*, Part I — *International Commercial Air Transport — Aeroplanes*, Part II — *International General Aviation — Aeroplanes* and Part III — *International Operations — Helicopters*, Annex 10 — *Aeronautical Telecommunications*, Volume I — *Radio Navigation Aids*, Annex 11 — *Air Traffic Services*, Annex 15 — *Aeronautical Information Services*, the *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444), *Procedures for Air Navigation Services — Aeronautical Information Management* (PANS-AIM, Doc 10066) and the *Procedures for Air Navigation Services — Aircraft Operations*, Volume III — *Aircraft Operating Procedures* (Doc 8168, PANS-OPS) related to general aviation helicopters, on-board technology for runway safety, ramp inspections and end of flight location arising from the eighth and ninth meetings of the Flight Operations Panel (FLTOPSP/8 and 9). The Commission authorized the transmission of these proposals to Contracting States and appropriate international organizations for comments.

2. Background for the amendment proposals is explained in Attachment A. The proposals for amendment to Annexes 2, 3, 4, 6, Parts I, II and III, 10 Volume I, 11, 15, PANS-ATM, PANS-OPS, Volume III and PANS-AIM are contained in Attachments B to M, respectively. A rationale box providing more information has been included immediately following each proposal.

3. In examining the proposed amendment, you should not feel obliged to comment on editorial aspects as such matters will be addressed by the ANC during its final review of the draft amendment.

4. May I request that any comments you wish to make on the amendment proposals be dispatched to reach me not later than 31 January 2024. To facilitate the processing of replies with substantive comments, I invite you to submit an electronic version in Word format to icaohq@icao.int. The ANC has asked me to specifically indicate that comments received after the due date may not be considered by the ANC and the Council. In this connection, should you anticipate a delay in the receipt of your reply, please let me know in advance of the due date.

5. For your information, the proposed amendments to Annexes 2, 3, 4, 6, Parts I, II and III, 10 Volume I, 11, 15, PANS-ATM, PANS-AIM and PANS-OPS, Volume III are envisaged for applicability on 26 November 2026. Any comments you may have thereon would be appreciated.

6. The subsequent work of the ANC and the Council would be greatly facilitated by specific statements on the acceptability or otherwise of the proposals.

7. Please note that for the review of your comments by the ANC and the Council, replies are normally classified as “agreement with or without comments”, “disagreement with or without comments” or “no indication of position”. If in your reply the expressions “no objections” or “no comments” are used, they will be taken to mean “agreement without comment” and “no indication of position”, respectively. In order to facilitate proper classification of your response, a form has been included in Attachment N which may be completed and returned together with your comments, if any, on the proposals in Attachments B to M.

Accept, Sir/Madam, the assurances of my highest consideration.

for
Juan Carlos Salazar
Secretary General

Enclosures:

- A — Background Information
- B — Proposed amendment to Annex 2
- C — Proposed amendment to Annex 3
- D — Proposed amendment to Annex 4
- E — Proposed amendment to Annex 6, Part I
- F — Proposed amendment to Annex 6, Part II
- G — Proposed amendment to Annex 6, Part III
- H — Proposed amendment to Annex 10, Volume I
- I — Proposed amendment to Annex 11
- J — Proposed amendment to Annex 15
- K — Proposed amendment to PANS-ATM (Doc 4444)
- L — Proposed amendment to PANS-OPS, Volume III (Doc 8168)
- M — Proposed amendment to PANS-AIM (Doc 10066)
- N — Response form

BACKGROUND INFORMATION

1. Authorizations, acceptance and approval

1.1 Following the work previously conducted to standardize the language of specific approvals withing Annex 6 — *Operation of Aircraft*, the proposed amendments in Attachment E, Initial Proposals 1 and 3, Attachment F, Initial Proposal 1 and Attachment G, Initial Proposal 1 address the terms approval and acceptance. The intent of this work is to ensure that a standardized language is implemented in the Standards of Annex 6, such that the level of oversight required by the State of the Operator or State of Registry is better understood. As part of this process, any undefined non-standard text in the Annex has also been removed.

1.2 Additionally, amendments to the authorization for the area of operations are proposed to clarify the information needed in the Air Operator Certificate (AOC).

2. End of flight

2.1 Initial Proposal 4 in Attachment E presents amendments to the emergency locator transmitters (ELT) Standards. This is intended to ensure that a ground-based homing signal is always present following a survivable accident and enable a timely search and rescue response to the accident site. This Standard is supplemented by additional guidance in Attachment H to Annex 6, Part I which explains the interrelation of the ELT Standards with those of the location of an aeroplane in distress (Annex 6, Part I, 6.18) and those for flight recorder data recovery (Annex 6, Part I, 6.3.6). This guidance illustrates, with some examples, several ways in which the various Standards related to the end of flight may be met with different equipment installations.

3. General aviation helicopters

3.1 The Standards and Recommended Practices (SARPs) relating to general aviation (GA) aircraft are proposed to be simplified by combining all helicopter and aeroplane requirements together in Annex 6, Part II, as presented in Attachment F: Initial Proposal 2 and Attachment G: Initial Proposal 2. This will create a single general aviation Part, while Part III will deal only with international commercial aviation – helicopters. Due to the similarity of requirements for the operation of GA helicopters and aeroplanes, a significant amount of duplication across Part II and Part III could be removed. Where possible, this was achieved by editing the provisions to refer to aircraft as a means to include both aeroplanes and helicopters. Where differences exist, sections entitled *For aeroplanes* or *For helicopters* are clearly indicated.

3.2 No changes to SARPs were proposed in this reorganization; however, following this process, it may be possible to review the remaining areas where differences exist to determine if there is scope for further harmonization.

3.3 As a result of these changes, additional consequential changes are also required in Annex 6, Part I to align the text and ensure consistency, these are presented in Attachment E: Initial Proposal 2.

4. **Other minor amendments**

4.1 Minor amendments, corrections and clarifications to all Parts of Annex 6 are presented in Attachment E: Initial Proposal 5, Attachment F: Initial Proposal 4 and Attachment G: Initial Proposal 3.

4.2 In particular, the definitions for *performance-based navigation* and *area navigation* are updated to align with current usage. This resulted in consequential changes to these definitions being introduced to Annex 2, Annex 3, Annex 4, Annex 10, Volume 1, Annex 11, Annex 15, PANS-ATM, and PANS-AIM.

5. **Runway overrun awareness and alerting system**

5.1 Following the introduction of the runway overrun awareness and alerting system (ROAAS) to Annex 6, Part I, Initial Proposal 3 of Attachment E presents a recommendation for installation in large and turbojet GA aeroplanes in Annex 6, Part II, Section III. This text, while based on the existing provisions of Annex 6, Part I, contains a revised note referring to ED-250 used, and consequently, the ROAAS note is updated in Annex 6, Part I as shown in Attachment E: Initial Proposal 6, along with the inclusion of a reference to ROAAS in the operations manual.

5.2 Additional provisions are also proposed for ROAAS operator implementation to ensure the adequate training and development of procedures for an accurate response to warnings and alerts issued by the system.

ATTACHMENT B to State letter AN 11/6.1.10-23/57

PROPOSED AMENDMENT TO

INTERNATIONAL STANDARDS

ANNEX 2

TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

RULES OF THE AIR

**NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT**

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

1. ~~Text to be deleted is shown with a line through it.~~ text to be deleted
2. **New text to be inserted is highlighted with grey shading.** new text to be inserted
3. ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading. new text to replace existing text

**PROPOSED AMENDMENT TO
ANNEX 2 — RULES OF THE AIR**

INITIAL PROPOSAL 1

Consequential change to the minor amendments to Annex 6

INTERNATIONAL STANDARDS

CHAPTER 1. DEFINITIONS

...

Area navigation (RNAV). A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note.—Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.

...

Origin:	<i>Rationale</i>
FLTOPSP/8	During the development work for the Fifth Edition of the <i>Performance-based Navigation (PBN) Manual</i> (Doc 9613), it was clarified that all area navigation operations should now be included in the PBN concept. The definition was updated to reflect this.

PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS
ANNEX 3
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION
METEOROLOGICAL SERVICE FOR INTERNATIONAL AIR
NAVIGATION

NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT

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PROPOSED AMENDMENT TO

ANNEX 3 — METEOROLOGICAL SERVICE FOR INTERNATIONAL AIR NAVIGATION

INITIAL PROPOSAL 1

Consequential change to the minor amendments to Annex 6

**INTERNATIONAL STANDARDS AND
RECOMMENDED PRACTICES**

PART 1

CORE SARPs

CHAPTER 1. DEFINITIONS

...

1.1 Definitions

...

Area navigation (RNAV). A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note.— ~~Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.~~

Origin:	<i>Rationale</i>
FLTOPSP/8	During the development work for the Fifth Edition of the <i>Performance-based Navigation (PBN) Manual</i> (Doc 9613), it was clarified that all area navigation operations should now be included in the PBN concept. The definition was updated to reflect this.

...

Performance-based navigation (PBN). Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

Note.— *Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, availability and functionality needed for the proposed operation in the context of a particular airspace concept. Availability of a global navigation satellite system signal in space (GNSS SIS) or some other NAVAID infrastructure is considered within the airspace concept in order to enable the navigation application.*

Origin:	<i>Rationale</i>
FLTOPSP/8	The definition of performance-based navigation no longer includes <i>availability</i> , but instead refers to it as being part of the GNSS SIS or other navigational aid infrastructure.

ATTACHMENT D to State letter AN 11/6.1.10-23/57

PROPOSED AMENDMENT TO

INTERNATIONAL STANDARDS

ANNEX 4

TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

AERONAUTICAL CHARTS

**NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT**

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PROPOSED AMENDMENT TO
ANNEX 4 — AERONAUTICAL CHARTS

INITIAL PROPOSAL 1

Consequential change to the minor amendments to Annex 6

**INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

CHAPTER 1. DEFINITIONS, APPLICABILITY AND AVAILABILITY

1.1 Definitions

...

Area navigation (RNAV). A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note.— ~~Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.~~

Origin:	<i>Rationale</i>
FLTOPSP/8	During the development work for the Fifth Edition of the <i>Performance-based Navigation (PBN) Manual</i> (Doc 9613), it was clarified that all area navigation operations should now be included in the PBN concept. The definition was updated to reflect this.

...

Performance-based navigation (PBN). Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

Note.— *Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, ~~availability~~ and functionality needed for the proposed operation in the context of a particular airspace concept. Availability of a global navigation satellite system signal in space (GNSS SIS) or some other NAVAID infrastructure is considered within the airspace concept in order to enable the navigation application.*

Origin:	<i>Rationale</i>
FLTOPSP/8	The definition of performance-based navigation no longer includes <i>availability</i> , but instead refers to it as being part of the GNSS SIS or other navigational aid infrastructure.

PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS
ANNEX 6
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION
OPERATION OF AIRCRAFT
PART I — *INTERNATIONAL COMMERCIAL AIR TRANSPORT —*
AEROPLANES

**NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT**

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PROPOSED AMENDMENT TO
ANNEX 6 — OPERATION OF AIRCRAFT
PART I — INTERNATIONAL COMMERCIAL AIR TRANSPORT — AEROPLANES

<p>INITIAL PROPOSAL 1</p> <p>Authorizations, acceptance and approval</p>
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ABBREVIATIONS AND SYMBOLS
(used in this Annex)

Abbreviations

...

HEA	High elevation aerodrome
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...

**INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

CHAPTER 1. DEFINITIONS

...

Aircraft operating manual. A manual, acceptable to the State of the Operator, containing normal, abnormal and emergency procedures, checklists, limitations, performance information, details of the aircraft systems and other material relevant to the operation of the aircraft.

Note.— The aircraft operating manual is part of the operations manual.

...

CHAPTER 4. FLIGHT OPERATIONS

...

4.3 FLIGHT PREPARATION

...

4.3.5 Meteorological conditions

...

4.3.5.3 To ensure that an adequate margin of safety is observed in determining whether or not an approach and landing can be safely carried out at each alternate aerodrome, the operator shall specify

appropriate incremental values for height of cloud base and visibility, ~~acceptable to the State of the Operator,~~ to be added to the operator’s established aerodrome operating minima.

...

4.10 FATIGUE MANAGEMENT

...

4.10.5 States that approve the operator’s FRMS shall establish a process to ensure that an FRMS provides a level of safety equivalent to, or better than, the prescriptive fatigue management regulations. As part of this process, the State of the Operator shall:

- a) require that the operator establish maximum values for flight times and/or flight duty periods(s) and duty period(s), and minimum values for rest periods. These values shall be based upon scientific principles and knowledge, **and be** subject to safety assurance processes, ~~and acceptable to the State of the Operator;~~

...

CHAPTER 12. CABIN CREW

12.1 ASSIGNMENT OF EMERGENCY DUTIES

The operator shall establish, ~~to the satisfaction of the State of the Operator,~~ the minimum number of cabin crew required for each type of aeroplane, based on seating capacity or the number of passengers carried, in order to effect a safe and expeditious evacuation of the aeroplane, and the necessary functions to be performed in an emergency or a situation requiring emergency evacuation. The operator shall assign these functions for each type of aeroplane.

Origin:	<i>Rationale</i>
FLTOPSP/8	<p>In developing a consistent methodology for addressing authorizations in Annex 6, it was determined that there was an assumption that any action required to be completed by the operator would need to be done in such a way that was acceptable to the State of the Operator, except where specific action was required by the State of the Operator (for approvals and specific approvals). Therefore, no explicit statement of acceptability was needed in these Standards and the text is proposed to be amended in line with this concept. If a higher level of authorization was needed, such as an approval or specific approval, it would be explicitly stated. An exception to this language was identified in the State of the Operator accepting equipment installation that has been approved by another State (typically the State of Design) as this terminology is consistent with that used in the airworthiness community and in Annex 8.</p> <p>In the case of the operations manual, 4.2.3.2 requires the State of the Operator to review, accept and approve as appropriate; therefore, there is no need to include ‘acceptable to the State of the Operator’ in the definition.</p> <p>For the determination of additional cloud-base and visibility increments, the Standard requires the operator to define these. The State of the Operator is therefore required to ensure it has been done correctly. The addition of ‘acceptable to the State of the</p>

	<p>Operator’ is implied by the requirement itself and the need for the State of the Operator to oversee the operation.</p> <p>For the Fatigue Risk Management System (FRMS), the use of the phrase ‘acceptable to the State of the Operator’ is redundant since the text of 4.10.5 requires the State of the Operator to ensure the operator has established maximum flight and duty time periods. It is therefore clear that these must be acceptable to the State and does not need to be explicit in the text.</p> <p>For the establishment of the minimum crew, the term ‘satisfaction of the State of the Operator’ has no defined meaning. Oversight of the operation by the State requires that they accept the required crew levels and this does not need to be explicitly stated.</p>
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...

APPENDIX 6. AIR OPERATOR CERTIFICATE (AOC)

(Chapter 4, 4.2.1.5 and 4.2.1.6, refer)

...

3. OPERATIONS SPECIFICATIONS FOR EACH AIRCRAFT MODEL

...

Notes.—

...

7. *List the ~~geographical~~ area(s) of authorized operation (by geographical coordinates or specific routes, flight information region or national or regional boundaries), including any limitations related to aerodrome elevations (such as high elevation aerodrome (HEA)), as clearly defined by the issuing authority, and indicating any designated airspace requiring approval (such as the North Atlantic High Level Airspace (NAT HLA)). The authorized area(s) of operation may be issued in attachments to the operations specifications.*

...

Origin:	<i>Rationale</i>
FLTOPSP/8	<p>The need to further clarify the means by which the operator’s area of operations is approved was identified. Additional information was included in Annex 6, Part I, Attachment B and the note referring to the area of operations was expanded in line with this guidance.</p> <p>This ensures that specific operations related to the area of operations, such as the use of the NAT HLA or operations to high elevation aerodromes (HEA) are explicitly included in the operations specifications.</p>

INITIAL PROPOSAL 2

Consequential amendment resulting from changes to Annex 6, Part III

APPENDIX 10. ARTICLE 83 bis AGREEMENT SUMMARY
(Chapter 6, 6.1.5.4, refers)

...

2. Article 83 bis agreement summary

ARTICLE 83 bis AGREEMENT SUMMARY		
Title of the Agreement:		
State of Registry:		Focal point:
State of the Operator:		Focal point:
Date of signature:	By State of Registry ¹ :	
	By State of the Operator ¹ :	
Duration:	Start Date ¹ :	End Date (if applicable) ² :
Languages of the Agreement		
ICAO Registration No.:		
Umbrella Agreement (if any) with ICAO Registration number:		

Convention on International Civil Aviation	ICAO Annexes affected by the transfer of responsibility in respect of certain functions and duties to the State of the Operator		
Article 12: Rules of the Air	Annex 2, all chapters	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Article 30 a): Aircraft radio equipment	Radio Station Licence	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Articles 30 b) and 32 a): Licenses of personnel	Annex 1, Chapters 1, 2, 3 and 6; and Annex 6, Part I, Radio Operator; or Annex 6, Part II (qualifications and/or flight crew member licensing); or Annex 6, Part III, Section II (composition of the flight crew) (radio operator); or Annex 6, Part III, Section III (qualifications)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Annex 6: [Specify Part and paragraph] ³
Article 31: Certificates of Airworthiness	Annex 6 Part I or Part III, Section II	Yes <input type="checkbox"/> No <input type="checkbox"/>	[Specify Part and chapters] ³
	Annex 6 Part II or Part III, Section III	Yes <input type="checkbox"/> No <input type="checkbox"/>	[Specify Part and chapters] ³
	Annex 8 Part II, Chapters 3 and 4	Yes <input type="checkbox"/> No <input type="checkbox"/>	[Specify chapters] ³

Aircraft affected by the transfer of responsibilities to the State of the Operator					
Aircraft make, model, series	Nationality and registration marks	Serial No.	AOC No. (Commercial air transport)	Dates of transfer of responsibilities	
				From ¹	To (if applicable) ²

...

Origin: FLTOPSP/8	<i>Rationale</i> The reorganization of GA helicopter SARPs necessitates a minor edit to the 83 <i>bis</i> agreement template to remove reference to Annex 6, Part III, Section III.
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INITIAL PROPOSAL 3

Authorizations, acceptance and approval

**ATTACHMENT B. AIR OPERATOR CERTIFICATION
AND VALIDATION**

Supplementary to Chapter 4, 4.2.1

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2. REQUIRED TECHNICAL SAFETY EVALUATIONS

...

Editorial Note.— Insert new Section 2.6 as follows

2.6 Area of operation

2.6.1 In deciding which area(s) of operation to authorize and include in the operations specifications, the State of the Operator should take into account the following factors:

- a) the adequacy of the operational control (for example, staffing, communication means, aircraft tracking means, access to local regulations and weather information) within the proposed area(s) of operation;
- b) the adequacy of ground handling and maintenance arrangements at the departure and destination aerodromes intended to be used;
- c) the capability of the aircraft to operate in the proposed area(s), in particular:
 - 1) the performance capability of the aircraft with regard to the terrain;
 - 2) the need for any special equipment or procedures (such as fuel temperature monitoring and fuel freeze strategy);
 - 3) the performance and reliability of the aircraft systems, with regard to extremes of weather or climate (such as desert, polar, high elevation aerodrome operations);
 - 4) the need for any special dispatch requirements with regard to the content of the MEL; and
 - 5) the availability of the necessary communication, navigation and surveillance equipment;
- d) the communication, navigation and surveillance facilities available over the proposed routes;

- e) the availability of adequate aerodromes within the proposed area(s), and the availability of related navigation data (such as charts, navigation databases);
- f) the availability of adequate search and rescue facilities, and the need to carry special survival equipment;
- g) any special training required for:
 - 1) coping with weather or climatic conditions likely to be encountered, including low atmospheric pressure at high elevation aerodromes and crew exposure to solar and cosmic radiations;
 - 2) complying with communication, navigation, surveillance specifications (PBCS, PBN) or with specific operational or airspace requirements (for example augmented crew, North Atlantic High Level Airspace (NAT-HLA));
 - 3) complying with non-standard ATC requirements such as the use of non-standard phraseology, altitude reference (such as metres), meteorological information (such as altimeter settings in inches of mercury, wind in metres per second, visibility in miles or feet); and
 - 4) complying with relevant area, route and aerodrome qualification requirements in accordance with Chapter 9, 9.4.3;
- h) the adequacy of relevant parts of the operations manual, in particular with regard to procedures and training programmes;
- i) the ability of the operator to track their aircraft in accordance with the requirements of Chapter 3, 3.5; and
- j) additionally, when considering proposed changes to the operators authorized area(s) of operation, the results of the operator's management of change process, detailing identified hazards, safety risk assessments and mitigations related to these changes.

Note.— Guidance on safety risk assessments is contained in the Safety Management Manual (Doc 9859).

2.6.2 In listing the authorized area(s) of operation in the operations specifications, the State of Operator should:

- a) specify whether the use of designated airspaces has been authorized (for example, “NAT, including NAT HLA” or “SAM, including HEA operations up to XX FT elevation”);
- b) use “worldwide” only if the operator has demonstrated its capability to operate (in terms of equipment, procedures and training), in every area of the world; if some areas or operations are excluded, these should be explicitly stated (for example, worldwide, excluding polar regions).

End of new text

3. AUTHORIZATION

...

3.4 Provisions that require a technical evaluation

Other provisions in Annex 6, Part I, require the State to have made a technical evaluation. ~~These provisions contain the phrases “acceptable to the State”, “satisfactory to the State”, “determined by the State”, “deemed acceptable by the State”, and “prescribed by the State”.~~ While not necessarily requiring an approval by the State, these Standards do require the State to at least accept the matter at issue after it conducts a specific review or evaluation. These provisions are:

Origin: FLTOPSP/8	<i>Rationale</i> The need to further clarify the means by which the operator’s area of operations is approved was identified. This new section provides items for the State of the Operator to consider when determining the scope of the authorization, including the need for additional training, procedures and equipment. The need to be specific in describing the extent and limitations of the authorization was emphasized. Explicitly including designated airspace such as the NAT HLA, and clearly stating any exclusions (such as polar operations) where appropriate, will ensure the authorization is accurately reflected.
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INITIAL PROPOSAL 4

End of flight

CHAPTER 6. AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

...

6.17 EMERGENCY LOCATOR TRANSMITTER (ELT)

...

6.17.3 All aeroplanes authorized to carry more than 19 passengers for which the individual certificate of airworthiness is first issued after 1 July 2008 shall be equipped with ~~either an automatic ELT and a separate device as follows:~~

- ~~a) at least two ELTs, one of which shall be automatic; or~~
- ~~b) at least one ELT and a capability that meets the requirements of 6.18.~~
- a) where the aeroplane is not required to comply with 6.18.1, either a second ELT of any type or a device meeting the requirements of 6.18.1;
- b) where the aeroplane is required to comply with 6.18.1 and:

- i) the automatic ELT does not fulfil the requirements of 6.18.1, a device meeting the requirements of 6.18.1;
- ii) the automatic ELT fulfils the requirements of 6.18.1, a second ELT of any type.

Note.—In the case where the requirements for 6.18 are met by another system no automatic ELT is required.

Origin:	<i>Rationale</i>
FLTOPSP/9	<p>Following extensive discussions on developing a performance-based Standard for the location of the end of flight, it was agreed that, for the foreseeable future, this would be met by the installation of an ELT with a 121.5 MHz homing signal. While the desire to adopt performance-based Standards where appropriate was understood, in certain cases, these add to the complexity of the national rule-making task without materially affecting the outcome: the only solution expected to meet the performance-based Standard would be the ELT.</p> <p>Addressing the potential gap in Standards with an edit to Annex 6, Part I, 6.17 clarifies the requirements and provides the best guarantee that search and rescue personnel will be able to quickly locate an accident site.</p>
Secretariat	<p>Following a review of the proposed text within the Secretariat and by industry, it was determined that further clarification was needed to ensure that the intent of the proposed amended Standard was well understood. The modifications to the original panel proposal were coordinated with the End of Flight Sub Group (EoF SG) of the FLTOPSP during the drafting of the ANWP, and the final version shown here has been agreed by this group which includes the Panel Chair.</p>

...

ATTACHMENT H. ACCURATE LOCATION OF THE END OF FLIGHT AN AEROPLANE IN DISTRESS

(Supplementary to Chapter 6, 6.3.6, 6.17 and 6.18)

GUIDANCE FOR ACCURATE LOCATION OF THE END OF FLIGHT AN AEROPLANE IN DISTRESS

1. INTRODUCTION

1.1 The following material provides guidance on ~~locating an aeroplane in distress~~ determining the end of flight location, which includes guidance related to the location of an aircraft in distress (6.18) along with additional information on the interrelation between these Standards and those for the carriage of ELTs (6.17) and flight recorder data recovery (6.3.6). The Triggered Transmission of Flight Data Working Group (TTFDWG) reviewed forty-two accidents to determine an indication of the distance from a last-known aeroplane position to the location of an accident site. The report concluded that in approximately 95 per cent of the cases, when the aircraft position was known one minute prior to the accident, the accident site location was within a 6 NM radius of that position. (Click here to access the TTFDWG Report under the “publications” tab or go to <https://www.bea.aero/en/> .)

1.3 When an accident is survivable, the determination of the location of the end of flight in a timely manner is essential and may not only rely on the last known aeroplane position before the accident. An ELT automatically activated subsequent to an impact is therefore required and aims at enabling timely, efficient and effective search and rescue (SAR) operations by guiding SAR units to the actual accident scene to rescue survivors during the time-frame for survival and minimize the risk to SAR units.

Note.— Additional guidance on the robust and automatic means to accurately determine the location of the point of end of flight is contained in the Manual on Global Aeronautical Distress and Safety System (Doc 10165).

2. CLARIFICATION OF PURPOSE OF EQUIPMENT

2.1 **In flight** information from which a position can be determined: Information from an aircraft system which either is active, or, when automatically or manually activated, can provide **flight** position information which includes a time stamp. This is a performance-based requirement which is not system-specific and may also bring operational benefits.

2.2 Emergency locator transmitter (ELT): ~~The current generation of ELTs were~~ ELTs are designed to provide the position of impact for a survivable accident. ~~The next generation of~~ Some ELTs may also have the **additional** capability to be automatically activated ~~a transmission~~ in flight, by ~~when~~ any of the conditions detailed in EUROCAE ED-237, Minimum Aviation System Performance Specification (MASPS) for Criteria to Detect In-Flight Aircraft Distress Events to Trigger Transmission of Flight Information ~~are met~~. ~~When~~ If an ELT sinks below the surface of water, its signal is not detectable.

Note.— A distress tracking capability meeting the requirements of Chapter 6, 6.18, does not necessarily include the automatic activation function subsequent to an impact or the post-accident homing signal.

2.3 Automatic deployable flight recorder (ADFR): The purpose of an ADFR is to have flight recorder data available soon after an accident, in particular for accidents over water. The ADFR contains an integrated ELT which provides for both locating the accident site for accident investigation and search and rescue purposes. Being floatable, it will assist in locating the accident site by providing an ELT signal ~~when~~ if the wreckage sinks below the surface of the water. ~~It also ensures redundancy for one ELT.~~ The ADFR may be used to meet the requirements of Chapter 6, 6.17, regarding the carriage of an automatic ELT on the aircraft.

~~2.4 Underwater locator device (ULD): A ULD operating at a frequency of 8.8 kHz is attached to the airframe to locate aeroplane wreckage below the surface of water when an ELT signal is not possible to detect. The ULDs operating at 37.5 kHz are attached to the flight recorders and are used for locating the flight recorders under water.~~

3. EQUIPAGE COMPLIANCE

The advancement of technology has made it possible to meet the equipage requirements by different means. Table H-1 below provides a list of the most stringent examples of compliance to accurately determine the location of the end of flight and provides possible equipage combinations. In such potential installations, the cost will be minimized and the effectiveness of the current installation improved.

Table H-1. Examples of compliance

Current	After 1 January 2021
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In-service	Application for type certification is submitted to a Contracting State
Two ELTs Two fixed recorders	<p>Example:</p> <p>A system from which a position can be determined; and one ADFR with an integrated ELT; and one combined recorder;</p> <p>or</p> <p>A system from which a position can be determined and one ELT and two fixed recorders and an additional means to retrieve flight recorder data in a timely manner.</p>

Note. — A system from which a position can be determined and used to comply with Chapter 6, 6.18, may replace one of the ELTs required by Chapter 6, 6.17.

Date of application for type certificate submitted to a Contracting State	Date of issuance of first Certificate of Airworthiness for the individual aircraft	Examples of aeroplane equipage for compliance with Standards in Chapter 6, 6.3.6, 6.17 and 6.18
Before 1 January 2021	Before 1 January 2024	Two ELTs, one of which must be an automatic ELT.
Before 1 January 2021	On or after 1 January 2024	<p>One device meeting the requirements of 6.18, plus one automatic ELT;</p> <p>or</p> <p>One device meeting the requirements of Chapter 6, 6.18, and which includes the functionality of an automatic ELT, plus one additional ELT.</p>
On or after 1 January 2021	Before 1 January 2024	One deployable ADFR with integrated automatic ELT, plus one additional ELT.
On or after 1 January 2021	On or after 1 January 2024	<p>One device meeting the requirements of Chapter 6, 6.18, and which includes the functionality of an automatic ELT, plus one additional ELT, plus a capability meeting the requirements of Chapter 6, 6.3.6;</p> <p>or</p> <p>One deployable ADFR with integrated automatic ELT, plus one device meeting the requirements of Chapter 6, 6.18;</p> <p>or</p> <p>One deployable ADFR with integrated automatic ELT which also meets the</p>

		requirement of 6.18, plus one additional ELT.
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Origin: FLTOPSP/9	<i>Rationale</i> Guidance in Attachment H was updated and expanded to cover both distress tracking and post flight localization. The table with example equipage requirements is expanded to cover, in a clearer and more understandable manner, the different drivers for ADT and flight data recovery (as described in Annex 6, Part I, 6.3.6).
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INITIAL PROPOSAL 5
Other minor amendments

...

PUBLICATIONS
(referred to in this Annex)

ICAO Publications

...

Manuals¹

...

Guidance on the Preparation of an Operations Manual (Doc 10153)

...

Preparation of an Operations Manual (Doc 9376)

...

Origin: FLTOPSP/9	<i>Rationale</i> Doc 10153 was published in 2021 and replaced the previous guidance on the <i>Preparation of an Operations Manual (Doc 9376)</i> , which became obsolete.
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CHAPTER 1. DEFINITIONS

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Acts of unlawful interference. These are acts or attempted acts such as to jeopardize the safety of civil aviation, including but not limited to:

- unlawful seizure of aircraft,

¹ The manuals referenced will be updated as necessary to harmonize the terminology with that used in the new Annex 19.

- destruction of an aircraft in service,
- hostage-taking on board aircraft or on aerodromes,
- forcible intrusion on board an aircraft, at an airport or on the premises of an aeronautical facility,
- introduction on board an aircraft or at an airport of a weapon or hazardous device or material intended for criminal purposes,
- use of an aircraft in service for the purpose of causing death, serious bodily injury, or serious damage to property or the environment,
- communication of false information such as to jeopardize the safety of an aircraft in flight or on the ground, of passengers, crew, ground personnel or the general public, at an airport or on the premises of a civil aviation facility.

Origin:	<i>Rationale</i>
FLTOPSP/9	Annex 6 (all parts) refers to acts of unlawful interference; however, its definition is only included in Part II, which is no longer consistent with Annex 17. The definition was added in alignment with the current Annex 17 definition.

...

Area navigation (RNAV). A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note.— Area navigation includes performance based navigation as well as other operations that do not meet the definition of performance based navigation.

Origin:	<i>Rationale</i>
FLTOPSP/8	During the development work for the Fifth Edition of the <i>Performance-based Navigation (PBN) Manual</i> (Doc 9613), it was clarified that all area navigation operations should now be included in the PBN concept. The definition was updated to reflect this.

...

Performance-based navigation (PBN). Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

Note.— Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, availability and functionality needed for the proposed operation in the context of a particular airspace concept. Availability of a global navigation satellite system signal in space (GNSS SIS) or some other NAVAID infrastructure is considered within the airspace concept in order to enable the navigation application.

Origin:	<i>Rationale</i>
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FLTOPSP/8	The definition of performance-based navigation no longer includes <i>availability</i> , but instead refers to it as being part of the GNSS SIS or other navigational aid infrastructure.
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CHAPTER 3. GENERAL

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3.1 COMPLIANCE WITH LAWS, REGULATIONS AND PROCEDURES

...

3.1.4 Responsibility for operational control shall be delegated only to the pilot-in-command and to a flight operations officer/flight dispatcher if the operator's approved method of control and supervision of flight operations requires the use of flight operations officer/flight dispatcher personnel.

*Note.— Guidance on the operational control organization and the role of the flight operations officer/flight dispatcher is contained in the Manual of Procedures for Operations Inspection, Certification and Continued Surveillance (Doc 8335). Detailed guidance on the authorization, duties and responsibilities of the flight operations officer/flight dispatcher is contained in the **Guidance on the Preparation of an Operations Manual (Doc 9376/10153)**. The requirements for age, skill, knowledge and experience for licensed flight operations officers/flight dispatchers are contained in Annex 1.*

Origin:	<i>Rationale</i>
FLTOPSP/9	Doc 10153 was published in 2021 and replaced the previous guidance on the <i>Preparation of an Operations Manual (Doc 9376)</i> , which became obsolete.

...

CHAPTER 4. FLIGHT OPERATIONS

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4.3 FLIGHT PREPARATION

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4.3.6 Fuel requirements

...

4.3.6.2 The amount of usable fuel to be carried shall, as a minimum, be based on:

...

b) the operating conditions for the planned flight including:

- 1) anticipated aeroplane mass;
- 2) **NOTAMs** ~~Notices to Airmen~~;

...

Origin:	<i>Rationale</i>
FLTOPSP/8	The <i>Procedures for Air Navigation Services — Aeronautical Information Management</i> (PANS-AIM, Doc 10066) has been amended to reflect “NOTAM” as a term, rather than the acronym “Notice to Airmen”. The old term was therefore replaced.

...

4.4.9 Aeroplane operating procedures for noise abatement

4.4.9.1 **Recommendation.**— *Aeroplane operating procedures for noise abatement should comply with the provisions of PANS-OPS (Doc 8168), Volume III.*

Origin:	<i>Rationale</i>
FLTOPSP/8	Noise abatement procedures have been moved to PANS-OPS, Volume III; this reference was therefore updated.

...

CHAPTER 5. AEROPLANE PERFORMANCE OPERATING LIMITATIONS

...

5.2 APPLICABLE TO AEROPLANES CERTIFICATED IN ACCORDANCE WITH PARTS IIIA AND IIIB OF ANNEX 8

...

5.2.7 Mass limitations

...

- d) In no case shall the mass at the start of take-off, or at the expected time of landing at the aerodrome of intended landing and at any destination alternate aerodrome, exceed the relevant maximum masses at which compliance has been demonstrated with the applicable noise certification Standards in Annex 16, Volume I, unless otherwise authorized in exceptional circumstances for a certain aerodrome or a runway where there is no noise disturbance problem, by the ~~competent authority of the State in which the aerodrome is situated~~ State of the Aerodrome.

Origin:	<i>Rationale</i>
FLTOPSP/8	For consistency, reference to the <i>competent authority</i> is replaced with reference to the State of the entity, in this case, State of the Aerodrome.

...

CHAPTER 6. AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

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6.3 FLIGHT RECORDERS

...

6.3.5 Flight recorders — general

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6.3.5.5 Combination recorders

...

6.3.5.5.3 Recommendation.— *All aeroplanes of a maximum certificated take-off mass over 5 700 kg, required to be equipped with an FDR and a CVR, may alternatively be equipped with two combination recorders (FDR/CVR).*

Note.— *The requirement of 6.3.45.5 may be satisfied by equipping the aeroplanes with two combination recorders (one forward and one aft) or separate devices.*

Origin:	<i>Rationale</i>
FLTOPSP/9	Updated with the correct reference.

...

6.15 AEROPLANES REQUIRED TO BE EQUIPPED WITH GROUND PROXIMITY WARNING SYSTEMS (GPWS)

...

6.15.5 All piston-engined aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg or authorized to carry more than nine passengers shall be equipped with a ground proximity warning system which provides the warnings in 6.15.67 a) and c), warning of unsafe terrain clearance and a forward-looking terrain avoidance function.

Origin:	<i>Rationale</i>
FLTOPSP/9	Updated with the correct reference.

...

CHAPTER 9. AEROPLANE FLIGHT CREW

...

9.3 FLIGHT CREW MEMBER TRAINING PROGRAMMES

9.3.1 The operator shall establish and maintain a ground and flight training programme, approved by the State of the Operator, which ensures that all flight crew members are adequately trained to perform their assigned duties. The training programme shall:

...

Note 9.— Guidance material on the different means used to assess competence can be found in ~~the~~ Attachment C to Chapter 2 of the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868).

...

Origin:	<i>Rationale</i>
FLTOPSP/9	Updated with the correct reference.

CHAPTER 14. DANGEROUS GOODS

...

14.3 OPERATORS WITH A SPECIFIC APPROVAL FOR THE TRANSPORT OF DANGEROUS GOODS AS CARGO

The State of the Operator shall issue a specific approval for the transport of dangerous goods and ensure that the operator:

- a) establishes a dangerous goods training programme that meets the requirements in the Technical Instructions, Part 1, Chapter 4, ~~Table 1-4~~, and the requirements of the State regulations, as appropriate. Details of the dangerous goods training programme shall be included in the operator's operations manuals;

...

Origin:	<i>Rationale</i>
FLTOPSP/8	Updated with the correct reference.

APPENDIX 2. ORGANIZATION AND CONTENTS OF AN OPERATIONS MANUAL

(Chapter 4, 4.2.3.1, refers)

...

2. CONTENTS

...

2.1 General

...

2.1.31 Policy, instructions, procedures and training requirements for the avoidance of collisions and the use of the airborne collision avoidance system (ACAS).

Note.— Procedures for the operation of ACAS are contained in PANS-OPS (Doc 8168), Volume III, and in PANS-ATM (Doc 4444), Chapters 12 and 15.

...

Origin:	<i>Rationale</i>
FLTOPSP/8	Updated with the correct reference.

APPENDIX 8. FLIGHT RECORDERS

(Chapter 6, 6.3, 6.18, refers)

...

Table A8-1. Parameter characteristics for flight data recorders

<i>Serial number</i>	<i>Parameter</i>	<i>Applicability</i>	<i>Measurement range</i>	<i>Maximum sampling and recording interval (seconds)</i>	<i>Accuracy limits (sensor input compared to FDR readout)</i>	<i>Recording resolution</i>
...						
38*	Selected barometric setting (pilot, co-pilot)		As installed	64	As installed	0.1 mb (0.0403 in-Hg)
...						

Table A8-3. Parameter Characteristics for Aircraft Data Recording Systems

<i>No.</i>	<i>Parameter name</i>	<i>Minimum recording range</i>	<i>Maximum recording interval in seconds</i>	<i>Minimum recording accuracy</i>	<i>Minimum recording resolution</i>	<i>Remarks</i>
...						
8	External static pressure (or pressure altitude)	34.4 mb (3.441.02 in-Hg) to 310.2 mb (31.029.16 in-Hg) or available sensor range	1	As installed (±1 mb (0.403 in-Hg) or ±30 m (±100 ft) to ±210 m (±700 ft) recommended)	0.1 mb (0.0403 in-Hg) or 1.5 m (5 ft)	
...						

Origin:	<i>Rationale</i>
FLTOPSP/9	Conversions from mb to in-Hg corrected.

ATTACHMENT C. MINIMUM EQUIPMENT LIST (MEL)
Supplementary to Chapter 6, 6.1.23

...

Origin:	<i>Rationale</i>
FLTOPSP/9	Updated with the correct reference.

ATTACHMENT H. LOCATION OF AN AEROPLANE IN DISTRESS
(Supplementary to Chapter 6, 6.18)

...

2. CLARIFICATION OF PURPOSE OF EQUIPMENT

...

2.4 Underwater ~~locator~~ **locating** device (ULD): A ULD operating at a frequency of 8.8 kHz is attached to the airframe to locate aeroplane wreckage below the surface of water when an ELT signal is not possible to detect. The ULDs operating at 37.5 kHz are attached to the flight recorders and are used for locating the flight recorders under water.

...

Origin:	<i>Rationale</i>
FLTOPSP/9	Term amended for consistency with Chapter 6, 6.5.3.

INITIAL PROPOSAL 6

Runway overrun awareness and alerting system (ROAAS)

**CHAPTER 6. AEROPLANE INSTRUMENTS, EQUIPMENT
AND FLIGHT DOCUMENTS**

...

**6.26 TURBINE AEROPLANE - RUNWAY OVERRUN AWARENESS
AND ALERTING SYSTEM (ROAAS)**

6.26.1 All turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg, for which the individual certificate of airworthiness is first issued on or after 1 January 2026, shall be equipped with a runway overrun awareness and alerting system (ROAAS).

Note 1.— An example of relevant guidance material for related to ROAAS design is contained may be found in EUROCAE ED-250, Minimum Operation Performance Specification (MOPS) for Runway Overrun Awareness and Alerting System (ROAAS), or equivalent documents.

Note 2.— Operator requirements for the use of ROAAS are contained in PANS-OPS, Volume III, Section 12.

...

APPENDIX 2. ORGANIZATION AND CONTENTS OF AN OPERATIONS MANUAL
(Chapter 4, 4.2.3.1, refers)

...

2. CONTENTS

...

2.1 General

...

2.1.32 Policy, instructions procedures and training requirements for the use of a Runway Overrun Awareness and Alerting System (ROAAS).

Editorial Note.— Renumber subsequent paragraphs.

...

2.3 Routes and aerodromes

...

2.3.7 Information regarding the use of ROAAS, in particular where the use of such systems is not available.

...

<p>Origin: FLTOPSP/8</p>	<p><i>Rationale</i></p> <p>In line with the note proposed in Annex 6, Part II, Note 1 is amended to clarify that ED-250 provides a means of compliance for the ROAAS, but alternative means may be available for suitably performing systems not fully aligned with the minimum operational performance specification (MOPS) in ED-250.</p> <p>Consequential changes to Annex 6, Part I are required to make reference to the operator requirements proposed for PANS-OPS, Volume III, and to include reference to the ROAAS system in the operations manual described in Appendix 2.</p>
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ATTACHMENT F to State letter AN 11/6.1.10-23/57

PROPOSED AMENDMENT TO

INTERNATIONAL STANDARDS

ANNEX 6

TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

OPERATION OF AIRCRAFT

PART II

INTERNATIONAL GENERAL AVIATION — AEROPLANES

**NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT**

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

1. ~~Text to be deleted is shown with a line through it.~~ text to be deleted
2. **New text to be inserted is highlighted with grey shading.** new text to be inserted
3. ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading. new text to replace existing text

PROPOSED AMENDMENT TO
ANNEX 6 — OPERATION OF AIRCRAFT
PART II — INTERNATIONAL GENERAL AVIATION — AEROPLANES

INITIAL PROPOSAL 1
Authorizations, acceptance and approval

...

ANNEX 6 — PART II
SECTION 2
GENERAL AVIATION OPERATIONS

...

CHAPTER 2.4 AEROPLANE INSTRUMENTS, EQUIPMENT
AND FLIGHT DOCUMENTS

...

2.4.1 General

In addition to the minimum equipment necessary for the issuance of a certificate of airworthiness, the instruments, equipment and flight documents prescribed in the following paragraphs shall be installed or carried, as appropriate, in aeroplanes according to the aeroplane used and to the circumstances under which the flight is to be conducted. The prescribed instruments and equipment, including their installation, shall be approved or acceptable ~~to~~accepted by the State of Registry.

Origin:	<i>Rationale</i>
FLTOPSP/8	The text in this section is aligned with the equivalent text in Annex 6, Part I, clarifying that in some situations the installation of equipment does require the approval of the State of Registry. In many cases the approved installation is accepted by the State, and the use of the term “accepted” in this instance is retained in the paragraph since the terminology is consistent with that used in the airworthiness community and in Annex 8 — <i>Airworthiness of Aircraft</i> .

INITIAL PROPOSAL 2
General aviation helicopter

...

ABBREVIATIONS AND SYMBOLS

(used in this Annex)

Abbreviations

...

LDAH	Landing distance available (helicopter)
LDP	Landing decision point
LDRH	Landing distance required (helicopter)

...

PNR	Point of no return
-----	--------------------

R	Rotor radius of helicopter
---	----------------------------

...

TDP	Take-off decision point
TIT	Turbine inlet temperature
TLA	Thrust lever angle
TLOF	Touchdown and lift-off area
TLS	Target level of safety
TODAH	Take-off distance available (helicopter)
TODRH	Take-off distance required (helicopter)
TVE	Total vertical error

...

V_{TOSS}	Take-off safety speed
V_y	Best rate of climb speed

...

PUBLICATIONS

(referred to in this Annex)

ICAO Publications

...

Annex 6 — *Operation of Aircraft*

Part I — *International Commercial Air Transport — Aeroplanes*

Part III — *International Operations Commercial Air Transport — Helicopters*

...

ANNEX 6 — PART II

INTERNATIONAL GENERAL AVIATION — AEROPLANES

FOREWORD

Historical background

...

Following a review by the Flight Operations Panel, it was determined that general aviation Standards and Recommended Practices should be consolidated in one Part of Annex 6. Part III, Section III was deleted and the contents transferred to Annex 6, Part II. Where possible, this was achieved by merging the two sets of requirements and making them applicable to aircraft rather than specifically to aeroplane or helicopter. Annex 6, Part II, was renamed *International General Aviation*, while Part III was renamed *International Commercial Air Transport – Helicopters*

Table A shows the origin of amendments together with a list of the principal subjects involved and the dates on which the Annex and the amendments were adopted by the Council, when they became effective and when they became applicable.

Applicability

The Standards and Recommended Practices of Annex 6, Part II, are applicable to international general aviation operations ~~with aeroplanes~~.

...

Origin:	<i>Rationale</i>
FLTOPSP/8	The historical background is updated to reflect the change in location of the helicopter GA SARPs. The section on applicability is also amended to refer to all GA operations.

ANNEX 6 — PART II

SECTION 1

GENERAL

**INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

CHAPTER 1.1 DEFINITIONS

When the following terms are used in the Standards and Recommended Practices for the operation of ~~aeroplanes~~ aircraft in international general aviation, they have the following meanings:

...

Aircraft operating manual. A manual, acceptable to the State of the Operator, containing normal, abnormal and emergency procedures, checklists, limitations, performance information, details of the aircraft systems and other material relevant to the operation of the aircraft.

Note.— The aircraft operating manual is part of the operations manual.

...

Alternate heliport. A heliport to which a helicopter may proceed when it becomes either impossible or inadvisable to proceed to or to land at the heliport of intended landing where the necessary services and facilities are available, where aircraft performance requirements can be met and which is operational at the expected time of use. Alternate heliports include the following:

Take-off alternate. An alternate heliport at which a helicopter would be able to land should this become necessary shortly after take-off and it is not possible to use the heliport of departure.

En-route alternate. An alternate heliport at which a helicopter would be able to land in the event that a diversion becomes necessary while en-route.

Destination alternate. An alternate heliport at which a helicopter would be able to land should it become either impossible or inadvisable to land at the heliport of intended landing.

Note.— The heliport from which a flight departs may be an en-route or a destination alternate heliport for that flight.

...

Approach and landing phase — helicopters. That part of the flight from 300 m (1 000 ft) above the elevation of the FATO, if the flight is planned to exceed this height, or from the commencement of the descent in the other cases, to landing or to the balked landing point.

...

Configuration deviation list (CDL). A list established by the organization responsible for the type design with the approval of the State of Design which identifies any external parts of an aircraft type which may be missing at the commencement of a flight, and which contains, where necessary, any information on associated operating limitations and performance correction.

Congested area. In relation to a city, town or settlement, any area which is substantially used for residential, commercial or recreational purposes.

Congested hostile environment. A hostile environment within a congested area.

Continuing airworthiness. The set of processes by which an aircraft, engine, propeller, rotor or part complies with the applicable airworthiness requirements and remains in a condition for safe operation throughout its operating life.

Continuing airworthiness records. Records which are related to the continuing airworthiness status of an aircraft, engine, propeller, rotor or associated part.

...

Crew member. A person assigned by an operator to duty on an aircraft during a flight duty period.

...

Duty. Any task that flight or cabin crew members are required by the operator to perform, including, for example, flight duty, administrative work, training, positioning and standby when it is likely to induce fatigue.

...

En-route phase. That part of the flight from the end of the take-off and initial climb phase to the commencement of the approach and landing phase.

Note.— Where adequate obstacle clearance cannot be guaranteed visually, flights are planned to ensure that obstacles can be cleared by an appropriate margin. In the event of failure of the critical engine, operators may need to adopt alternative procedures.

...

Fatigue. A physiological state of reduced mental or physical performance capability resulting from sleep loss, extended wakefulness, circadian phase, and/or workload (mental and/or physical activity) that can impair a person's alertness and ability to perform safety-related operational duties.

Final approach and take-off area (FATO). A defined area over which the final phase of the approach manoeuvre to hover or landing is completed and from which the take-off manoeuvre is commenced. Where the FATO is to be used by helicopters operating in performance Class 1, the defined area includes the rejected take-off area available.

...

Flight duty period. A period which commences when a flight or cabin crew member is required to report for duty that includes a flight or a series of flights and which finishes when the aircraft finally comes to rest and the engines are shut down at the end of the last flight on which he/she is a crew member.

...

Flight time — helicopters. The total time from the moment a helicopter's rotor blades start turning until the moment the helicopter finally comes to rest at the end of the flight, and the rotor blades are stopped.

...

Helicopter. A heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes.

Note.— Some States use the term “rotorcraft” as an alternative to “helicopter”.

Helideck. A heliport located on a floating or fixed offshore structure.

Heliport. An aerodrome or a defined area on a structure intended to be used wholly or in part for the arrival, departure and surface movement of helicopters.

Note 1.— Throughout this Part, when the term “heliport” is used, it is intended that the term also applies to aerodromes primarily meant for the use of aeroplanes.

Note 2.— Helicopters may be operated to and from areas other than heliports.

Heliport operating minima. The limits of usability of a heliport for:

- a) take-off, expressed in terms of runway visual range and/or visibility and, if necessary, cloud conditions;
- b) landing in 2D instrument approach operations, expressed in terms of visibility and/or runway visual range, minimum descent altitude/height (MDA/H) and, if necessary, cloud conditions; and
- c) landing in 3D instrument approach operations, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H) as appropriate to the type and/or category of the operation.

Hostile environment. An environment in which:

- a) a safe forced landing cannot be accomplished because the surface and surrounding environment are inadequate; or
- b) the helicopter occupants cannot be adequately protected from the elements; or
- c) search and rescue response/capability is not provided consistent with anticipated exposure; or
- d) there is an unacceptable risk of endangering persons or property on the ground.

Human Factors principles. Principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance.

Human performance. Human capabilities and limitations which have an impact on the safety, security and efficiency of aeronautical operations.

...

Landing decision point (LDP). The point used in determining landing performance from which, an engine failure occurring at this point, the landing may be safely continued or a bailed landing initiated.

Note.— LDP applies only to helicopters operating in performance Class 1.

...

Maintenance organization's procedures manual. A document endorsed by the head of the maintenance organization which details the maintenance organization's structure and management responsibilities, scope of work, description of facilities, maintenance procedures and quality assurance or inspection systems.

...

Master minimum equipment list (MMEL). A list established for a particular aircraft type by the organization responsible for the type design with the approval of the State of Design containing items, one or more of which is permitted to be unserviceable at the commencement of a flight. The MMEL may be associated with special operating conditions, limitations or procedures.

Maximum mass. Maximum certificated take-off mass.

...

Minimum equipment list (MEL). A list which provides for the operation of aircraft, subject to specified conditions, with particular equipment inoperative, prepared by an operator in conformity with, or more restrictive than, the MMEL established for the aircraft type.

Modification. A change to the type design of an aircraft, engine, ~~or~~ propeller or rotor.

...

Non-congested hostile environment. A hostile environment outside a congested area.

Non-hostile environment. An environment in which:

- a) a safe forced landing can be accomplished because the surface and surrounding environment are adequate;
- b) the helicopter occupants can be adequately protected from the elements;
- c) search and rescue response/capability is provided consistent with anticipated exposure; and
- d) the assessed risk of endangering persons or property on the ground is acceptable.

Note.— Those parts of a congested area satisfying the above requirements are considered non-hostile.

...

Offshore operations. Operations which routinely have a substantial proportion of the flight conducted over sea areas to or from offshore locations. Such operations include, but are not limited to, support of offshore oil, gas and mineral exploitation and sea-pilot transfer.

...

Operation. An activity or group of activities which are subject to the same or similar hazards and which require a set of equipment to be specified, or the achievement and maintenance of a set of pilot competencies, to eliminate or mitigate the risk of such hazards.

Note.— Such activities could include, but would not be limited to, offshore operations, heli-hoist operations or emergency medical service.

...

Operations in performance Class 1. Operations with performance such that, in the event of a critical engine failure, performance is available to enable the helicopter to safely continue the flight to an appropriate landing area, unless the failure occurs prior to reaching the take-off decision point (TDP) or after passing the landing decision point (LDP), in which cases the helicopter must be able to land within the rejected take-off or landing area.

Operations in performance Class 2. Operations with performance such that, in the event of critical engine failure, performance is available to enable the helicopter to safely continue the flight to an appropriate landing area, except when the failure occurs early during the take-off manoeuvre or late in the landing manoeuvre, in which cases a forced landing may be required.

Operations in performance Class 3. Operations with performance such that, in the event of an engine failure at any time during the flight, a forced landing will be required.

...

Safe forced landing. Unavoidable landing or ditching with a reasonable expectancy of no injuries to persons in the aircraft or on the surface.

Safety management system (SMS). A systematic approach to managing safety, including the necessary organizational structures, accountability, responsibilities, policies and procedures.

Series of flights. Series of flights are consecutive flights that:

- a) begin and end within a period of 24 hours; and
- b) are all conducted by the same pilot-in-command.

...

State of the Aerodrome. The State in whose territory the aerodrome is located.

Note.— State of the Aerodrome includes heliports and landing locations.

State of the Operator. The State in which the operator's principal place of business is located or, if there is no such place of business, the operator's permanent residence.

...

Take-off and initial climb phase (helicopter). That part of the flight from the start of take-off to 300 m (1 000 ft) above the elevation of the FATO, if the flight is planned to exceed this height, or to the end of the climb in the other cases.

Take-off decision point (TDP). The point used in determining take-off performance from which, an engine failure occurring at this point, either a rejected take-off may be made or a take-off safely continued.

Note.— TDP applies only to helicopters operating in Performance Class 1.

...

V_{ross}. The minimum speed at which climb shall be achieved with the critical engine inoperative, the remaining engines operating within approved operating limits.

Note.— The speed referred to above may be measured by instrument indications or achieved by a procedure specified in the flight manual.

...

Origin:	<i>Rationale</i>
FLTOPSP/8	Additional definitions are included from Annex 6, Part III to ensure helicopter specific terms are defined. While the intent was to ensure, as far as practical, these are unchanged there were some edits required in line with current editorial practice. For consistency these may need to be reflected in other Annexes.

CHAPTER 1.2 APPLICABILITY

The Standards and Recommended Practices contained in Annex 6, Part II, shall be applicable to international general aviation operations ~~with aeroplanes~~ as described in Section 2 ~~and Section 3~~. Where the Standards and Recommended Practices apply only to aeroplanes or helicopters, this is clearly indicated. The Standards and Recommended Practices contained in Annex 6, Part II, Section 3 are applicable to international general aviation operations with large and turbojet aeroplanes only.

...

Note 2.— Standards and Recommended Practices applicable to international commercial air transport operations ~~or international general aviation operations~~ with helicopters are to be found in Annex 6, Part III.

...

Origin:	<i>Rationale</i>
FLTOPSP/8	The applicability of the SARPs is modified to reflect the inclusion of GA helicopters.
Secretariat	This section has been further modified by the Secretariat to accurately reflect the final version of Annex 6, Part II, which combined the GA helicopter SARPs into the existing aeroplane SARPs, rather than propose these as a new section.

ANNEX 6 — PART II

SECTION 2

GENERAL AVIATION OPERATIONS

CHAPTER 2.1 GENERAL

...

Note 2.— In the case of international operations effected jointly with ~~aeroplanes~~ aircraft, not all of which are registered in the same Contracting State, nothing in this Part prevents the States concerned entering into an agreement for the joint exercise of the functions placed upon the State of Registry by the provisions of the relevant Annexes.

Note 3.— Unless specifically noted, all references to “aircraft” apply to aeroplanes and helicopters. Any provisions within this section that apply specifically to an aeroplane or a helicopter are annotated as such.

Note 4.— All references to aerodromes apply to aeroplanes, while references to heliports and landing locations apply only to helicopters.

Origin:	<i>Rationale</i>
FLTOPSP/8	Clarification is provided on the use of terms in the Annex. In all cases where a Standard or Recommended Practice applies equally to aeroplanes and helicopters, this is amended to refer to aircraft. Specific SARPs applicable to either aeroplanes or helicopters are clearly labelled as such.
Secretariat	In developing the amendment proposal it was determined that the terms <i>aerodrome</i> and <i>heliport</i> were explicitly retained, therefore the Panel's proposal to include <i>heliport</i> within the term <i>aerodrome</i> was not followed in practice. This has been edited in order to ensure the consistency of the final proposal.

2.1.1 Compliance with laws, regulations and procedures

...

2.1.1.2 The pilot-in-command shall be familiar with the laws, regulations and procedures, pertinent to the performance of his or her duties, prescribed for the areas to be traversed, the aerodromes to be used and the air navigation facilities relating thereto. The pilot-in-command shall ensure that other members of the flight crew are familiar with such of these laws, regulations and procedures as are pertinent to the performance of their respective duties in the operation of the ~~aeroplane~~ aircraft.

Note 1.— Compliance with more restrictive measures, not in contravention of the provisions of 2.1.1.1, may be required by the State of Registry.

Note 2.— Rules covering flight over the high seas are contained in Annex 2.

Origin:	<i>Rationale</i>
FLTOPSP/8	The additional notes under 2.1.1.2 are included in Annex 6, Part III and are transferred here.

Note 3.— Information for pilots on flight procedure parameters and operational procedures is contained in PANS-OPS (Doc 8168), Volume I. Criteria for the construction of visual and instrument flight procedures are contained in PANS-OPS (Doc 8168), Volume II. Obstacle clearance criteria and procedures used in certain States may differ from PANS-OPS, and knowledge of these differences is important for safety reasons.

2.1.1.3 The pilot-in-command shall have responsibility for operational control.

Note.— The rights and obligations of a State with respect to the operation of ~~aeroplanes~~ aircraft registered in that State are not affected by this provision.

2.1.1.4 If an emergency situation which endangers the safety or security of the ~~aeroplane~~ aircraft or persons necessitates the taking of action which involves a violation of local regulations or procedures, the pilot-in-command shall notify the appropriate local authority without delay. If required by the State in which the incident occurs, the pilot-in-command shall submit a report on any such violation to the appropriate authority of such State; in that event, the pilot-in-command shall also submit a copy of it to the State of Registry of the aeroplane. Such reports shall be submitted as soon as possible and normally within ten days.

2.1.1.5 **Recommendation.**— *The pilot-in-command should have available on board the ~~aeroplane~~ aircraft the essential information concerning the search and rescue services in the area over which the ~~aeroplane~~ aircraft will be flown.*

2.1.1.6 The pilot-in-command shall ensure that flight crew members demonstrate the ability to speak and understand the language used for aeronautical radiotelephony communications as specified in Annex 1.

2.1.2 Dangerous goods

2.1.2.1 General applicability

Note 1.— Provisions for carriage of dangerous goods are contained in Annex 18.

Note 2.— Article 35 of the Convention refers to certain classes of cargo restrictions.

Note 3.— 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 Helicopter Operations in the Technical Instruction for the Safe Transport of Dangerous Goods by Air (Doc 9284), Part 7;7.1.1.

2.1.2.2 Applicability for helicopters

2.1.2.2.1 The provisions of the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) also apply to the acceptance for carriage, loading and carriage of dangerous goods in any general aviation helicopter.

2.1.2.2.2 *Exceptions.* The General exceptions contained in Part 1;1.1.5 of the Technical Instructions and the exceptions contained in Part 1;2.2 of the Technical Instructions also apply to any general aviation helicopter.

...

Origin:	<i>Rationale</i>
FLTOPSP/8	Amendment 24 to Annex 6, Part III included additional requirements for the carriage of dangerous goods by GA helicopter, which are transferred here.

CHAPTER 2.2 FLIGHT OPERATIONS

2.2.1 Operating facilities

2.2.1.1 The pilot-in-command shall ensure that a flight will not be commenced unless it has been ascertained by every reasonable means available that the ground and/or water facilities including communication facilities and navigation aids available and directly required on such flight, for the safe operation of the ~~aeroplane aircraft~~, are adequate for the type of operation under which the flight is to be conducted.

...

2.2.2 Operational management

2.2.2.1 For aeroplanes — Operating instructions — general

...

2.2.2.2 For helicopters — Operating instructions — general

A helicopter rotor shall not be turned under power for the purpose of flight without a qualified pilot at the controls.

Origin:	<i>Rationale</i>
FLTOPSP/8	Helicopter and aeroplane instructions relating to the movement of the aircraft under power are different, as helicopters are generally not taxied. A distinction is therefore made in terms of the requirements applicable to aeroplanes and helicopters, with the Standards of Annex 6, Part III, 2.18 being brought across intact.

2.2.2.3 ~~Aerodrome~~ Operating minima

Note. — Reference to operating minima in this section refers to aerodrome operating minima and heliport operating minima.

2.2.2.3.1 The pilot-in-command shall establish ~~aerodrome~~ operating minima in accordance with criteria specified by the State of Registry, for each aerodrome, heliport or landing location to be used in operations. When establishing ~~aerodrome~~ operating minima, any conditions that may be prescribed in the list of specific approvals shall be observed. Such minima shall not be lower than any that may be established for such ~~aerodromes~~ by the State of the Aerodrome, except when specifically approved by that State.

Note.— This Standard does not require the State of the Aerodrome to establish ~~aerodrome~~ operating minima.

Origin:	<i>Rationale</i>
FLTOPSP/8	Standards requiring the establishment of minima are common to Annex 6, Part II and Part III, but are referred to as aerodrome operating minima in Part II and heliport or landing location operating minima in Part III. Rather than combine these terms in the title, a simpler option is to refer to operating minima only and include the additional text in the body of the Standard.

Editorial Note.— Renumber subsequent paragraphs.

...

2.2.2.23.1.2 When issuing a specific approval for the operational credit, the State of Registry shall ensure that the:

- a) ~~aeroplane~~ aircraft meets the appropriate airworthiness certification requirements;

...

2.2.2.23.1.3 For operations with operational credit with minima above those related to low visibility operations, the State of Registry shall establish criteria for the safe operation of the ~~aeroplane~~ aircraft.

...

2.2.2.34 ~~Passengers Briefings~~

2.2.2.34.1 The pilot-in-command shall ensure that ~~crew members and~~ passengers are made familiar with the location and use of:

- a) seat belts ~~or harnesses as appropriate~~;

...

Origin:	<i>Rationale</i>
FLTOPSP/8	Annex 6, Part III refers to briefing crew as well as passengers, and this text is incorporated here. The reference to harnesses is included to ensure the full intent of the Annex 6, Part III Standard is captured.
Secretariat	The discrepancy between the Part II and Part III text proposed by the Panel is addressed by the inclusion of harnesses.

...

2.2.2.34.3 In an emergency during flight, the pilot-in-command shall ensure that passengers are instructed in such emergency action as may be appropriate to the circumstances.

2.2.2.34.4 The pilot-in-command shall ensure that, during take-off and landing and whenever considered necessary by reason of turbulence or any emergency occurring during flight, all passengers on board an ~~aeroplane~~ aircraft shall be secured in their seats by means of the seat belts or harnesses provided.

Origin:	<i>Rationale</i>
FLTOPSP/8	While the text of these two Standards is not included in Annex 6, Part III, they are considered equally applicable to both aeroplanes and helicopters and were included here for all aircraft.

2.2.3 Flight preparation

2.2.3.1 A flight shall not be commenced until the pilot-in-command is satisfied that:

- a) the ~~aeroplane~~ aircraft is airworthy, duly registered and that appropriate certificates with respect thereto are aboard the ~~aeroplane~~ aircraft;

- b) the instruments and equipment installed in the ~~aeroplane~~ **aircraft** are appropriate, taking into account the expected flight conditions;
- c) any necessary maintenance has been performed in accordance with Chapter 2.6;
- d) the mass of the ~~aeroplane~~ **aircraft** and centre of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;
- e) any load carried is properly distributed and safely secured; and
- f) the ~~aeroplane~~ **aircraft** operating limitations, contained in the flight manual, or its equivalent, will not be exceeded.

...

2.2.3.4 Meteorological conditions — **visual flight rules**

2.2.3.4.1 A flight to be conducted in accordance with VFR shall not be commenced unless current meteorological reports or a combination of current reports and forecasts indicate that the meteorological conditions along the route or that part of the route to be flown under VFR will, at the appropriate time, be such as to enable compliance with these rules.

2.2.3.5 Meteorological conditions — instrument flight rules — aeroplanes

2.2.3.4.2**5.1** A flight to be conducted in accordance with the instrument flight rules shall not:

- a) take off from the departure aerodrome unless the meteorological conditions, at the time of use, are at or above the aerodrome operating minima for that operation; and
- b) take off or continue beyond the point of in-flight re-planning unless at the aerodrome of intended landing or at each alternate aerodrome to be selected in compliance with 2.2.3.5**8**, current meteorological reports or a combination of current reports and forecasts indicate that the meteorological conditions will be, at the estimated time of use, at or above the aerodrome operating minima for that operation.

2.2.3.4.3**5.2** The State of Registry shall establish criteria to be used for the estimated time of use of an aerodrome including a margin of time.

Note.— A widely accepted time margin for “estimated time of use” is one hour before and after the earliest and latest time of arrival. Additional considerations can be found in the Flight Planning and Fuel Management (FPFM) Manual (Doc 9976).

2.2.3.6 Meteorological conditions — instrument flight rules — helicopters

2.2.3.6.1 *When an alternate is required.* A flight to be conducted in accordance with IFR shall not be commenced unless the available information indicates that conditions at the heliport of intended landing and at least one alternate heliport will, at the estimated time of arrival, be at or above the heliport operating minima.

Note.— It is the practice in some States to declare, for flight planning purposes, higher minima for a heliport when nominated as an alternate than for the same heliport when planned as that of intended landing.

2.2.3.6.2 *When no alternate is required.* A flight to be conducted in accordance with IFR to a heliport when no alternate heliport is required shall not be commenced unless available current meteorological information indicates that the following meteorological conditions will exist from two hours before to two hours after the estimated time of arrival, or from the actual time of departure to two hours after the estimated time of arrival, whichever is the shorter period:

- a) a cloud base of at least 120 m (400 ft) above the minimum associated with the instrument approach procedure; and
- b) visibility of at least 1.5 km more than the minimum associated with the procedure.

Note.— These are considered as minimum values where a reliable and continuous meteorological watch is maintained. When only an “area” type forecast is available these values may need to be increased accordingly.

Origin:	<i>Rationale</i>
FLTOPSP/8	Specific requirements for the operation of aeroplanes and helicopters in IFR are different, and cannot be easily combined. An additional section is included to distinguish between the Standards applicable to aeroplanes and helicopters.

2.2.3.4.47 **Flight in icing conditions**

2.2.3.7.1 A flight to be operated in known or expected icing conditions shall not be commenced unless the ~~aeroplane~~ aircraft is certificated and equipped to cope with such conditions.

2.2.3.4.57.2 A flight to be planned or expected to operate in suspected or known ground icing conditions shall not take off unless the ~~aeroplane~~ aircraft has been inspected for icing and, if necessary, has been given appropriate de-icing/anti-icing treatment. Accumulation of ice or other naturally occurring contaminants shall be removed so that the ~~aeroplane~~ aircraft is kept in an airworthy condition prior to take-off.

Origin:	<i>Rationale</i>
FLTOPSP/8	While this specific Standard is not included in Annex 6, Part III it is considered equally applicable to both aeroplanes and helicopters and is included here for all aircraft.

Note.— Guidance material for aeroplanes is given in the Manual of Aircraft Ground De-icing/Anti-icing Operations (Doc 9640). Helicopter information is provided in the original equipment manufacturer (OEM) recommended practices.

Origin: FLTOPSP/8	<i>Rationale</i> The note referring to the Doc 9640 is only applicable to aeroplanes. No specific guidance has been developed for helicopters, therefore the suggestion is to refer to OEM procedures for additional information.
Secretariat	The text proposed by the panel was amended to avoid the use of <i>should</i> in a note.

2.2.3.58 Alternate aerodromes

Destination alternate aerodromes

2.2.3.8.1 For a flight to be conducted in accordance with the instrument flight rules, at least one destination alternate aerodrome shall be selected and specified in the flight plans, unless:

2.2.3.8.1.1 For aeroplanes:

...

2.2.3.8.1.2 For Helicopters:

- a) the weather conditions in 2.2.3.6.2 prevail; or
- b) 1) the heliport or landing location of intended landing is isolated and no alternate heliport or landing location is available; and
 - 2) an instrument approach procedure is prescribed for the isolated heliport of intended landing; and
 - 3) a point of no return (PNR) is determined in case of an offshore destination.

2.2.3.8.2 For helicopters — Suitable offshore alternates may be specified subject to the following:

- a) the offshore alternates shall be used only after passing a PNR. Prior to a PNR, onshore alternates shall be used;
- b) mechanical reliability of critical control systems and critical components shall be considered and taken into account when determining the suitability of the alternate;
- c) one engine inoperative performance capability shall be attainable prior to arrival at the alternate;
- d) to the extent possible, deck availability shall be guaranteed; and
- e) weather information must be reliable and accurate.

Note.— The landing technique specified in the flight manual following control system failure may preclude the nomination of certain helidecks as alternate heliports.

2.2.3.8.3 **Recommendation.**— For helicopters — Offshore alternates should not be used when it is possible to carry enough fuel to have an onshore alternate. Offshore alternates should not be used in a hostile environment.

Origin:	<i>Rationale</i>
FLTOPSP/8	Specific requirements for alternate aerodromes are different for the operation of aeroplanes and helicopters and cannot be easily combined. An additional section is included to distinguish between the Standards applicable to aeroplanes and helicopters.

2.2.3.69 Fuel and oil requirements

2.2.3.69.1 A flight shall not be commenced unless, taking into account both the meteorological conditions and any delays that are expected in flight, the ~~aeroplane~~ aircraft carries sufficient fuel and oil to ensure that it can safely complete the flight.

2.2.3.9.2 For aeroplanes, the amount of fuel to be carried must permit:

- a) when the flight is conducted in accordance with the instrument flight rules and a destination alternate aerodrome is not required in accordance with 2.2.3.58, or when the flight is to an isolated aerodrome, flight to the aerodrome of intended landing, and after that, have a final reserve fuel for at least 45 minutes at normal cruising altitude; or

...

Note 1.— Nothing in 2.2.3.69 precludes amendment of a flight plan in flight in order to replan the flight to another aerodrome, provided that the requirements of 2.2.3.69 can be complied with from the point where the flight is replanned.

Note 2.— Guidance on planning operations to isolated aerodromes is contained in the Flight Planning and Fuel Management (FPFM) Manual (Doc 9976).

2.2.3.9.3 For helicopters — VFR operations. The fuel and oil carried in order to comply with 2.2.3.9.1 shall, in the case of VFR operations, be at least the amount to allow the helicopter to:

- a) fly to the landing location to which the flight is planned;
- b) have a final reserve fuel to fly thereafter for a period of 20 minutes at best-range speed; and
- c) have an additional amount of fuel to provide for the increased consumption on the occurrence of potential contingencies, as determined by the State and specified in the State regulations governing general aviation.

2.2.3.9.4 For helicopters — IFR operations. The fuel and oil carried in order to comply with 2.2.3.9.1 shall, in the case of IFR operations, be at least the amount to allow the helicopter to comply with 2.2.3.9.4.1, 2.2.3.9.4.2 or 2.2.3.9.4.3 as appropriate.

2.2.3.9.4.1 When no alternate is required, in terms of 2.2.3.6.2, to fly to and execute an approach at the heliport or landing location to which the flight is planned, and thereafter to have:

- a) a final reserve fuel to fly 30 minutes at holding speed at 450 m (1 500 ft) above the destination heliport or landing location under standard temperature conditions and approach and land; and
- b) an additional amount of fuel to provide for the increased consumption on the occurrence of potential contingencies.

2.2.3.9.4.2 When an alternate is required, in terms of 2.2.3.6.1, to fly to and execute an approach, and a missed approach, at the heliport or landing location to which the flight is planned, and thereafter:

- a) fly to and execute an approach at the alternate specified in the flight plan; and
- b) have a final reserve fuel to fly for 30 minutes at holding speed at 450 m (1 500 ft) above the alternate under standard temperature conditions, and approach and land; and
- c) have an additional amount of fuel to provide for the increased consumption on the occurrence of potential contingencies.

2.2.3.9.4.3 When no alternate heliport or landing location is available (that is, the heliport of intended landing is isolated and no alternate is available), to fly to the heliport to which the flight is planned and thereafter for a period as specified by the State of Registry.

2.2.3.9.5 *For helicopters* — In computing the fuel and oil required in 2.2.3.9.1, at least the following shall be considered:

- a) meteorological conditions forecast;
- b) expected air traffic control routings and traffic delays;
- c) for IFR flight, one instrument approach at the destination heliport, including a missed approach;
- d) the procedures for loss of pressurization, where applicable, or failure of one engine while en-route; and
- e) any other conditions that may delay the landing of the helicopter or increase fuel and/or oil consumption.

Note.— Nothing in 2.2.3.9 precludes amendment of a flight plan in flight in order to replan the flight to another heliport, provided that the requirements of 2.2.3.9 can be complied with from the point where the flight has been replanned.

2.2.3.6.29.6 The use of fuel after flight commencement for purposes other than originally intended during pre-flight planning shall require a re-analysis and, if applicable, adjustment of the planned operation.

Origin:	<i>Rationale</i>
FLTOPSP/8	Specific requirements for oil are different for the operation of aeroplanes and helicopters, and cannot be easily combined. An additional section is included to distinguish between the Standards applicable to aeroplanes and helicopters.

2.2.3.710 Refuelling with passengers on board

2.2.3.710.1 **Recommendation.**— *An ~~aeroplane~~ aircraft should not be refuelled when passengers are embarking, on board or disembarking (or, for helicopters, when rotors are turning) unless it is attended by the pilot-in-command or other qualified personnel ready to initiate and direct an evacuation of the ~~aeroplane~~ aircraft by the most practical and expeditious means available.*

Origin:	<i>Rationale</i>
FLTOPSP/8	Equivalent Standards for refueling with passengers on board both aeroplanes and helicopters are provided in Annex 6, Parts II and III, however for helicopters, this is also applied when the rotors are turning. This additional caveat is applied to the text to ensure the Standard covers all possibilities.

2.2.3.710.2 **Recommendation.**— *When refuelling with passengers embarking, on board or disembarking, two-way communications should be maintained by the ~~aeroplane's~~ aircraft's intercommunication system or other suitable means between the ground crew supervising the refuelling and the pilot-in-command or other qualified personnel required by 2.2.3.710.1.*

Note 1.— The provisions of 2.2.3.710.1 do not necessarily require the deployment of integral ~~aeroplane~~ aircraft stairs or the opening of emergency exits as a prerequisite to refuelling.

Note 2.— Provisions concerning aircraft refuelling are contained in Annex 14, Volume I, and guidance on safe refuelling practices is contained in the Airport Services Manual (Doc 9137), Parts 1 and 8 and in the Heliport Manual (Doc 9261).

...

2.2.3.811 Oxygen supply

...

2.2.4 In-flight procedures

2.2.4.1 ~~Aerodrome~~ Operating minima

2.2.4.1.1 A flight shall not be continued towards the aerodrome ~~or heliport~~ of intended landing, unless the latest available information indicates that at the expected time of arrival, a landing can be effected at that aerodrome ~~or heliport~~ or at least one destination alternate aerodrome ~~or heliport~~, in compliance with the operating minima established in accordance with 2.2.2.23.

2.2.4.1.2 An instrument approach shall not be continued below 300 m (1 000 ft) above the aerodrome ~~or heliport~~ elevation or into the final approach segment unless the reported visibility or controlling RVR is at or above the aerodrome ~~or heliport~~ operating minima.

Note.— Criteria for the final approach segment is contained in PANS-OPS (Doc 8168), Volume II.

2.2.4.1.3 If, after entering the final approach segment or after descending below 300 m (1 000 ft) above the aerodrome ~~or heliport~~ elevation, the reported visibility or controlling RVR falls below the specified minimum, the approach may be continued to DA/H or MDA/H. In any case, an ~~aeroplane~~ aircraft shall not continue its approach-to-land beyond a point at which the limits of the aerodrome ~~or heliport~~ operating minima would be infringed.

Origin:	<i>Rationale</i>
FLTOPSP/8	To accommodate both aeroplanes and helicopters, aerodrome operating minima is renamed as operating minima and the text expanded to include aerodromes and heliports.

...

2.2.4.2 Meteorological and operational observations by pilots

2.2.4.2.1 **Recommendation.**— *When meteorological conditions likely to affect the safety of other aircraft are encountered, they should be reported as soon as possible.*

Origin:	<i>Rationale</i>
FLTOPSP/8	While Annex 6, Part III does not contain this Recommendation it is considered to apply equally to aeroplanes and helicopters and is retained as applicable to all aircraft.

...

2.2.4.2.2 **Recommendation.**— *For aeroplanes, the pilot-in-command should report runway braking action when the runway braking action encountered is not as good as reported.*

Note.— *The procedures for making special air-reports regarding runway braking action are contained in the PANS-ATM (Doc 4444), Chapter 4, and Appendix 1.*

Origin:	<i>Rationale</i>
FLTOPSP/8	Annex 6, Part III does not include a requirement to report runway braking action, as this is specific to aeroplanes. The Recommendation is modified to reflect this.

...

2.2.4.5 Flight crew members at duty stations

...

2.2.4.5.2 *En route.* All flight crew members required to be on flight deck duty shall remain at their stations except when their absence is necessary for the performance of duties in connection with the operation of the ~~aeroplane~~ aircraft or for physiological needs.

...

2.2.4.6 Use of oxygen

All flight crew members, when engaged in performing duties essential to the safe operation of an ~~aeroplane~~ aircraft in flight, shall use breathing oxygen continuously whenever the circumstances prevail for which its supply has been prescribed in 2.2.3.811.

2.2.4.7 Safeguarding of cabin crew and passengers in pressurized ~~aeroplanes~~ aircraft in the event of loss of pressurization

...

2.2.4.8 In-flight fuel management

2.2.4.8.1 The pilot-in-command shall monitor the amount of usable fuel remaining on board to ensure

it is not less than the fuel required to proceed to an aerodrome, **heliport or landing location** where a safe landing can be made with the planned final reserve fuel remaining.

Note.— The protection of final reserve fuel is intended to ensure safe landing at any aerodrome, heliport or landing location when unforeseen occurrences may not permit a safe completion of an operation as originally planned.

Origin:	<i>Rationale</i>
FLTOPSP/8	This note is included in Annex 6, Part III but did not appear in Part II. It is considered applicable to all aircraft and is transferred across, amended to refer to aerodromes also.

2.2.4.78.2 The pilot-in-command shall advise ATC of a minimum fuel state by declaring **MINIMUM FUEL** when, having committed to land at a specific aerodrome, **heliport or landing location**, the pilot calculates that any change to the existing clearance to that aerodrome, **heliport or landing location**, or other air traffic delays, may result in landing with less than the planned final reserve fuel.

Note 1.— The declaration of MINIMUM FUEL informs ATC that all planned aerodrome options have been reduced to a specific aerodrome of intended landing (and, for helicopters, that no precautionary landing location is available) and any change to the existing clearance, or air traffic delays, may result in landing with less than the planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.

Note 2.— For helicopters, a precautionary landing location refers to a landing location, other than the location of intended landing, where it is expected that a safe landing can be made prior to the consumption of the planned final reserve fuel.

Origin:	<i>Rationale</i>
FLTOPSP/8	The note from Annex 6, Part III referring to a precautionary landing site – specific to helicopters – is transferred here and standardized to be consistent with the use of landing location.

2.2.4.78.3 The pilot-in-command shall declare a situation of fuel emergency by broadcasting **MAYDAY MAYDAY MAYDAY FUEL**, when the calculated usable fuel estimated to be available upon landing at the nearest aerodrome, **heliport or landing location** where a safe landing can be made is less than the planned final reserve fuel.

Note 1.— The planned final reserve fuel refers to the value calculated in 2.2.3.69 and is the minimum amount of fuel required upon landing at any aerodrome.

Note 2.— For helicopters, the pilot estimates with reasonable certainty that the fuel remaining upon landing at the nearest safe landing location will be less than the final reserve fuel taking into consideration the latest information available to the pilot, the area to be overflowed (i.e. with respect to the availability of precautionary landing areas), meteorological conditions and other reasonable contingencies.

Origin:	<i>Rationale</i>
FLTOPSP/8	The note from Annex 6, Part III referring to a safe landing site – specific to helicopters – is transferred here and standardized with the use of landing location.

Note 23.— The words “MAYDAY FUEL” describe the nature of the distress conditions as required in Annex 10, Volume II, 5.3.2.1.1, b) 3).

2.2.4.9 Instrument approach procedures

2.2.4.9.1 One or more instrument approach procedures designed to support instrument approach operations shall be approved and promulgated by the State in which the aerodrome or heliport or landing location is located, or by the State which is responsible for the heliport when located outside the territory of any State, to serve each instrument runway or aerodrome utilized for instrument flight operations.

2.2.4.9.2 ~~Aeroplanes~~ Aircraft operated in accordance with the instrument flight rules shall comply with the instrument approach procedures approved by the State in which the aerodrome or heliport or landing location is located, or by the State which is responsible for the heliport when located outside the territory of any State.

Origin:	<i>Rationale</i>
FLTOPSP/8	References to the use of heliports outside of the territory of any State (such as oil and gas platforms) are added, to ensure that the procedures supporting these heliports is approved and promulgated by the State responsible.
Secretariat	Consistent with proposals for amendment to other Standards, <i>heliport or landing location</i> is explicitly included in the text.

Note 1.— See 2.2.2.23.12 for instrument approach operation classifications.

...

2.2.5 Duties of pilot-in-command

2.2.5.1 The pilot-in-command shall be responsible for the operation, safety and security of the, ~~aeroplanes aircraft~~ and the safety of all crew members, passengers and cargo on board.

Origin:	<i>Rationale</i>
FLTOPSP/8	Annex 6, Part III contains an equivalent text that is more specific in terms of the start and end time of the responsibility of the pilot-in-command. The generic text in Part II, however, is considered to be applicable in all cases.

...

2.2.5.3 The pilot-in-command shall be responsible for notifying the nearest appropriate authority by the quickest available means of any accident involving the ~~aeroplane aircraft~~, resulting in serious injury or death of any person or substantial damage to the ~~aeroplane aircraft~~ or property.

...

2.2.6 Cabin baggage (take-off and landing)

The pilot-in-command shall ensure that all baggage carried onto an ~~aeroplane aircraft~~ and taken into the passenger cabin is securely stowed.

Origin:	<i>Rationale</i>
FLTOPSP/8	This Standard is not included in Annex 6, Part III but is considered applicable to all aircraft.

2.2.7 Helicopter over-water flights

All helicopters on flights over water in a hostile environment in accordance with Chapter 2.4, 2.4.4.4 shall be certificated for ditching. Sea state shall be an integral part of ditching information.

Origin:	<i>Rationale</i>
FLTOPSP/8	This Standard is specific to helicopters and is transferred here from Part III.

CHAPTER 2.3 ~~AEROPLANE~~ AIRCRAFT PERFORMANCE OPERATING LIMITATIONS

2.3.1 General

2.3.1.1 An ~~aeroplanes~~ aircraft shall be operated:

- a) in compliance with the terms of its airworthiness certificate or equivalent approved document;
- b) within the operating limitations prescribed by the certificating authority of the State of Registry; and
- c) if applicable, within the mass limitations imposed by compliance with the applicable noise certification Standards in Annex 16, Volume I, unless otherwise authorized in exceptional circumstances for a certain aerodrome, heliport or landing location or a runway where there is no noise disturbance problem, by the competent authority of the State in which the aerodrome is situated.

2.3.1.2 Placards, listings, instrument markings, or combinations thereof, containing those operating limitations prescribed by the certificating authority of the State of Registry for visual presentation, shall be displayed in the ~~aeroplane~~ aircraft.

Note.— The Standards of Annex 8, Part IV apply to all helicopters intended for the carriage of passengers or cargo or mail in international air navigation.

2.3.1.3 Where helicopters are operating to or from heliports in a congested hostile environment, the State in which the heliport is situated shall take such precautions as are necessary to control the risk associated with an engine failure.

Note.— Guidance is provided in the Helicopter Code of Performance Development Manual (Doc 10110).

Origin:	<i>Rationale</i>
FLTOPSP/8	Specific requirements for helicopters operating in a congested hostile environment are required and included here from Annex 6, Part III. A minor editorial change is made here to remove reference to the competent authority, for consistency with the Standards of Annex 6.
Secretariat	Consistent with proposals for amendment to other Standards, <i>heliport or landing location</i> is explicitly included in the text of bullet c).

2.3.1.34 The pilot-in-command shall determine that ~~aeroplanes~~ aircraft performance will permit the take-off and departure to be carried out safely.

Origin:	<i>Rationale</i>
FLTOPSP/8	This Standard is not included in Annex 6, Part III but is considered applicable to all aircraft.

CHAPTER 2.4 ~~AEROPLANE~~ AIRCRAFT INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

Note.— Specifications for the provision of ~~aeroplanes~~ aircraft communication and navigation equipment are contained in Chapter 2.5.

2.4.1 General

In addition to the minimum equipment necessary for the issuance of a certificate of airworthiness, the instruments, equipment and flight documents prescribed in the following paragraphs shall be installed or carried, as appropriate, in ~~aeroplanes~~ aircraft according to the ~~aeroplanes~~ aircraft used and to the circumstances under which the flight is to be conducted. The prescribed instruments and equipment, including their installation, shall be acceptable to the State of Registry.

2.4.2 ~~Aeroplanes~~ Aircraft on all flights

2.4.2.1 An ~~aeroplanes~~ aircraft shall be equipped with instruments which will enable the flight crew to control the flight path of the ~~aeroplane~~ aircraft, carry out any required procedural manoeuvres and observe the operating limitations of the ~~aeroplane~~ aircraft in the expected operating conditions.

2.4.2.2 An ~~aeroplane~~ aircraft shall be equipped with or carry on board:

- a) an accessible first-aid kit;
- b) portable fire extinguishers of a type which, when discharged, will not cause dangerous contamination of the air within the ~~aeroplane~~ aircraft. At least one shall be located in:

...

- d) the following manuals, charts and information:

- 1) the flight manual or other documents or information concerning any operating limitations prescribed for the ~~aeroplane~~aircraft by the certificating authority of the State of Registry, required for the application of Chapter 2.3;

...

- 6) the journey log book for the ~~aeroplane~~aircraft;

- e) where the, ~~aeroplanes~~aircraft is fitted with fuses that are accessible in flight, spare electrical fuses of appropriate ratings for replacement of those fuses.

2.4.2.3 Any agent used in a built-in fire extinguisher for each lavatory disposal receptacle for towels, paper or waste in an ~~aeroplanes~~aircraft, for which the individual certificate of airworthiness is first issued on or after 31 December 2011 and any extinguishing agent used in a portable fire extinguisher in an ~~aeroplanes~~aircraft, for which the individual certificate of airworthiness is first issued on or after 31 December 2018 shall:

...

2.4.2.4 **Recommendation.**— ~~Aeroplanes~~Aircraft on all flights should be equipped with the ground-air signal codes for search and rescue purposes.

2.4.2.5 **Recommendation.**— ~~Aeroplanes~~Aircraft on all flights should be equipped with a safety harness for each flight crew member seat.

Note.— Safety harness includes shoulder strap(s) and a seat belt which may be used independently.

2.4.2.6 Marking of break-in points

2.4.2.6.1 If areas of the fuselage suitable for break-in by rescue crews in emergency are marked on an ~~aeroplanes~~aircraft, such areas shall be marked as shown below (see ~~Figure following~~2.4-1). The colour of the markings shall be red or yellow, and if necessary they shall be outlined in white to contrast with the background.

...

Note.— This Standard does not require any ~~aeroplanes~~aircraft to have break-in areas.

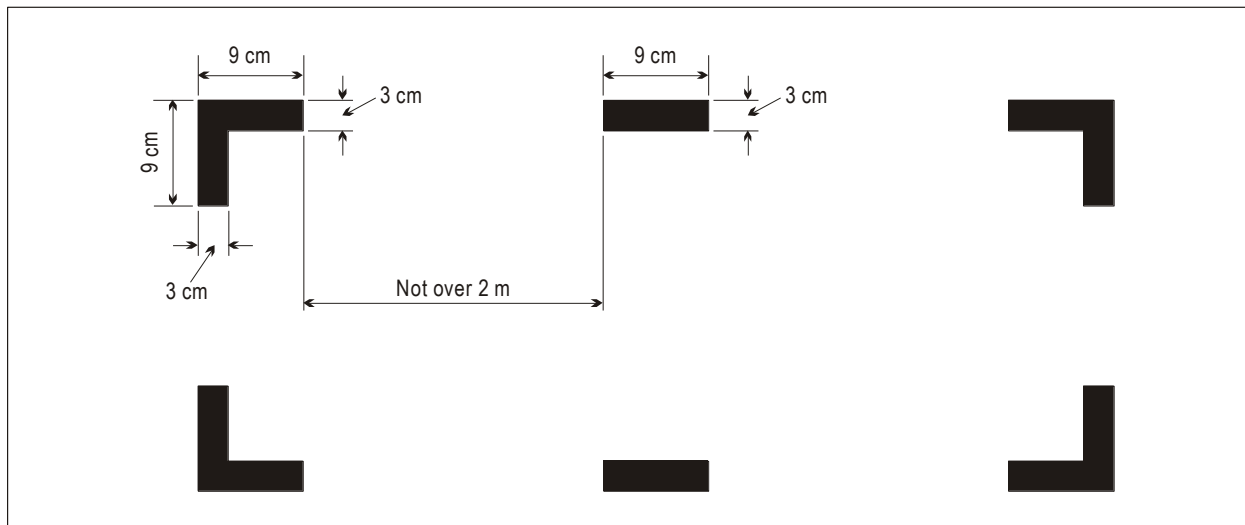


Figure 2.4-1. MARKING OF BREAK-IN POINTS (see 2.4.2.6)

Origin:	<i>Rationale</i>
Secretariat	The diagram showing the correct marking of break-in points was previously referred to as the <i>following diagram</i> . To avoid any confusion, a figure reference is included.

2.4.3 All aeroplanes/aircraft operated as VFR flights

2.4.3.1 All aeroplanes/aircraft when operated as VFR flights shall be:

...

2.4.3.2 All helicopters when operating in accordance with VFR at night shall be equipped with:

- a) the equipment specified in 2.4.3.1;
- b) an attitude indicator (artificial horizon) for each required pilot;
- c) a slip indicator;
- d) a heading indicator (directional gyroscope);
- e) a rate of climb and descent indicator; and
- f) such additional instruments or equipment as may be prescribed by the appropriate authority.

2.4.3.23 **Recommendation.**— *VFR flights which are operated as controlled flights should be equipped in accordance with 2.4.7.*

Origin:	<i>Rationale</i>
FLTOPSP/8	Requirements for VFR operation by day are equivalent and included here as general VFR operation requirements. The recommendation to equip VFR flights operated as controlled flights does not appear in Annex 6, Part III, however, it is considered to be applicable to all aircraft.
Secretariat	Differences in the required equipment specified for helicopter VFR operations by day and by night were considered significant. A new Standard with the night VFR requirements for helicopters only was therefore included.

2.4.4 ~~Aeroplanes~~Aircraft on flights over water

...

Insert new text as follows:

2.4.4.4 Helicopters on flights over water

2.4.4.4.1 Means of flotation

All helicopters intended to be flown over water shall be fitted with a permanent or rapidly deployable means of flotation to ensure a safe ditching of the helicopter when:

- a) engaged in offshore operations or other over-water operations, as prescribed by the State of Registry; or
- b) flying at a distance from land specified by the appropriate State authority.

Note.— When determining the distance from land referred to in 2.4.4.4.1, environmental conditions and the availability of search and rescue facilities ~~should be~~ are considered.

2.4.4.4.2 Emergency equipment

2.4.4.4.2.1 Helicopters operating in accordance with the provisions in 2.4.4.4.1 shall be equipped with:

- a) one life jacket, or equivalent individual flotation device, for each person on board, stowed in a position easily accessible from the seat of the person for whose use it is provided;
- b) when not precluded by consideration related to the type of helicopter used, life-saving rafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency, provided with such life-saving equipment including means of sustaining life as is appropriate to the flight to be undertaken; and
- c) equipment for making the pyrotechnical distress signals described in Annex 2.

2.4.4.4.2.2 When taking off or landing at a heliport where, in the opinion of the State of Registry, the take-off or approach path is so disposed over water that in the event of a mishap there would be likelihood of a ditching, at least the equipment required in 2.4.4.4.2.1 a) shall be carried.

2.4.4.4.2.3 Each life jacket and equivalent individual flotation device, when carried in accordance with 2.4.4.4, shall be equipped with a means of electric illumination for the purpose of facilitating the location of persons.

2.4.4.4.2.4 **Recommendation.**— *On any helicopter for which the individual certificate of airworthiness is first issued on or after 1 January 1991, at least 50 per cent of the life rafts carried in accordance with the provisions of 2.4.4.4.2 should be deployable by remote control.*

2.4.4.4.2.5 **Recommendation.**— *Rafts which are not deployable by remote control and which have a mass of more than 40 kg should be equipped with some means of mechanically-assisted deployment.*

2.4.4.4.2.6 **Recommendation.**— *On any helicopter for which the individual certificate of airworthiness was first issued before 1 January 1991, the provisions of 2.4.4.4.2.4 and 2.4.4.4.2.5 should be complied with no later than 31 December 1992.*

End of new text.

Origin:	<i>Rationale</i>
FLTOPSP/8	Specific requirements for helicopters vary from those for aeroplanes and cannot be easily combined, therefore they are included as additional text in this section.

2.4.5 ~~Aeroplanes~~Aircraft on flights over designated land areas

~~Aeroplanes~~Aircraft, when operated across land areas which have been designated by the State concerned as areas in which search and rescue would be especially difficult, shall be equipped with such signalling devices and life-saving equipment (including means of sustaining life) as may be appropriate to the area overflown.

2.4.6 ~~Aeroplanes~~Aircraft on high altitude flights

2.4.6.1 ~~Aeroplanes~~Aircraft intended to be operated at high altitudes shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the oxygen supplies required in 2.2.3.811.

...

Origin:	<i>Rationale</i>
FLTOPSP/8	The presentation of the Standards relating to high altitude flight and oxygen requirements differs between Annex 6, Part II and Part III. Part III makes reference to the Standards applicable for commercial air transport, whereas Part II presents the high-level requirement and provides additional information in the relevant Attachment. It is considered appropriate that that model used in Part II be applied for both GA aeroplanes and helicopters.

2.4.7 All ~~aeroplanes~~aircraft operated in accordance with the instrument flight rules

All aeroplanes/aircraft when operated in accordance with the instrument flight rules, or when the aeroplane/aircraft cannot be maintained in a desired attitude without reference to one or more flight instruments, shall be:

- a) equipped with a means of measuring and displaying:
 - 1) magnetic heading (standby compass);
 - 2) barometric altitude;

Note.— Due to the long history of misreadings, the use of drum-pointer altimeters is not recommended.

- 3) indicated airspeed, with a means of preventing malfunctioning due to either condensation or icing;
- 4) for aeroplanes, turn and slip; for helicopters, a slip indicator;
- 5) aircraft attitude: for helicopters, an attitude indicator for each required pilot and one additional attitude indicator;

...

Origin:	<i>Rationale</i>
FLTOPSP/8	IFR equipage requirements are broadly the same for both aeroplanes and helicopters. Specific differences are added where appropriate.

2.4.8 Aeroplanes/Aircraft when operated at night

2.4.8.1 Aeroplanes/Aircraft, when operated at night, shall be equipped with:

...

- d) illumination for all flight instruments and equipment that are essential for the safe operation of the aeroplane/aircraft that are used by the flight crew;

...

2.4.8.2 **Recommendation.**— *For helicopters, the landing light should be trainable, at least in the vertical plane.*

Origin:	<i>Rationale</i>
FLTOPSP/8	The information in Annex 6, Parts II and III is presented in a different format; however, the overall intent is considered to be equivalent and therefore the changes proposed in this section are minimal.

2.4.9 Aeroplanes/Aircraft complying with the noise certification Standards in Annex 16, Volume I

An aeroplane/aircraft shall carry a document attesting noise certification. When the document, or a suitable statement attesting noise certification as contained in another document approved by the State of Registry, is issued in a language other than English, it shall include an English translation.

Note 1.— The attestation may be contained in any document, carried on board, approved by the State of Registry.

Note 2.— The various noise certification Standards of Annex 16, Volume I, which are applicable to helicopters, are determined according to the date of application for a Type Certificate, or the date of acceptance of an application under an equivalent prescribed procedure by the certificating authority. Some helicopters are not required to comply with any noise certification Standard. For details, see Annex 16, Volume I, Part II, Chapters 8 and 11.

...

Origin:	<i>Rationale</i>
FLTOPSP/8	The requirement to carry a translation of the noise certificate in English is transferred from Annex 6, Part III as it is considered to be applicable to all aircraft. Note 2, specific to helicopters, is also required.

2.4.12 Emergency locator transmitter (ELT)

For aeroplanes:

2.4.12.1 **Recommendation.**— *All aeroplanes should carry an automatic ELT.*

2.4.12.2 Except as provided for in 2.4.12.3, all aeroplanes shall be equipped with at least one ELT of any type.

2.4.12.3 All aeroplanes for which the individual certificate of airworthiness is first issued after 1 July 2008 shall be equipped with at least one automatic ELT.

2.4.12.4 ELT equipment carried to satisfy the requirements of 2.4.12.1, 2.4.12.2 and 2.4.12.3 shall operate in accordance with the relevant provisions of Annex 10, Volume III.

For helicopters:

2.4.12.5 From 1 July 2008, all helicopters operating in performance Classes 1 and 2 shall be equipped with at least one automatic ELT and, when operating on flights over water as described in 2.4.4.4.1 a), with at least one automatic ELT and one ELT(S) in a raft or life jacket.

2.4.12.6 From 1 July 2008, all helicopters operating in performance Class 3 shall be equipped with at least one automatic ELT and, when operating on flights over water as described in 2.4.4.4.1 b), with at least one automatic ELT and one ELT(S) in a raft or life jacket.

2.4.12.7 ELT equipment carried to satisfy the requirements of 2.4.12.5 and 2.4.12.6 shall operate in accordance with the relevant provisions of Annex 10, Volume III.

...

Origin:	<i>Rationale</i>
FLTOPSP/8	Specific requirements differ regarding the carriage of ELTs for aeroplanes and helicopters and these cannot be easily combined; therefore, an additional section for helicopters is included.

2.4.13 ~~Aeroplanes~~Aircraft required to be equipped with a pressure-altitude reporting transponder

2.4.13.3 From 1 January 2003, unless exempted by the appropriate authorities, all helicopters shall be equipped with a pressure-altitude reporting transponder which operates in accordance with the relevant provisions of Annex 10, Volume IV.

2.4.13.4 **Recommendation.**— *All helicopters should be equipped with a pressure-altitude reporting transponder which operates in accordance with the relevant provisions of Annex 10, Volume IV.*

Note.— *These provisions are intended to support the effectiveness of ACAS as well as to improve the effectiveness of air traffic services. The intent is also for aircraft not equipped with pressure-altitude reporting transponders to be operated so as not to share airspace used by aircraft equipped with airborne collision avoidance systems. To this end, exemptions from the carriage requirement for pressure-altitude reporting transponders could be given by designating airspace where such carriage is not required.*

Origin:	<i>Rationale</i>
FLTOPSP/8	Specific requirements differ regarding pressure altitude reporting transponders for aeroplanes and helicopters and these cannot be easily combined; therefore, an additional section for helicopters is included.

2.4.14 Microphones

2.4.14.1 **Recommendation.**— *For aeroplanes, wWhen operating under the instrument flight rules all flight crew members required to be on flight deck duty should communicate through boom or throat microphones below the transition level/altitude.*

2.4.14.2 **Recommendation.**— *For helicopters, all flight crew members required to be on flight deck duty should communicate through boom or throat microphones.*

Origin:	<i>Rationale</i>
FLTOPSP/8	Helicopter and aeroplane requirements for the use of microphones are not aligned and require specific Standards for aeroplanes and helicopters.

2.4.15 ~~Aeroplanes~~Aircraft equipped with automatic landing systems, a head-up display (HUD) or equivalent displays, enhanced vision systems (EVS), synthetic vision systems (SVS) and/or combined vision systems (CVS)

Notwithstanding Chapter 2.2, 2.2.2.2.1.1 to 2.2.2.2.1.3, where ~~aeroplanes~~aircraft are equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, or any combination of those systems into a hybrid system, criteria for the use of such systems for the safe operation of an ~~aeroplane~~ aircraft shall be established by the State of Registry.

Note 1.— Information regarding automatic landing systems, a HUD or equivalent displays, EVS, SVS OR CVS, is contained in the Manual of All-Weather Operations (Doc 9365).

Note 2.— Automatic landing system — helicopter is an automatic approach using airborne systems that provide automatic control of the flight path, to a point aligned with the landing surface, from which the pilot can transition to a safe landing by means of natural vision without the use of automatic control.

Origin:	<i>Rationale</i>
FLTOPSP/8	Following amendments to Annex 6, Part III relating to operational credit, the note relating to helicopter automatic landing systems was added.

2.4.16 Flight recorders

Note 2.— For helicopters, combination recorders (FDR/CVR) may be used to meet the flight recorder equipage requirements in this Annex.

Editorial Note.— Renumber subsequent notes.

Origin:	<i>Rationale</i>
FLTOPSP/8	Annex 6, Part III includes an additional note on the use of combination recorders which is not found in Part II. This is transferred and made applicable to helicopters only.

Note 45.— For aeroplanes aircraft for which the application for type certification is submitted to a Contracting State before 1 January 2016, specifications applicable to crash-protected flight recorders may be found in EUROCAE ED-112, ED-56A, ED-55, Minimum Operational Performance Specifications (MOPS), or earlier equivalent documents.

Note 65.— For aeroplanes aircraft for which the application for type certification is submitted to a Contracting State on or after 1 January 2016, specifications applicable to crash-protected flight recorders may be found in EUROCAE ED-112A, Minimum Operational Performance Specification (MOPS), or equivalent documents.

2.4.16.1 Aeroplanes — Flight data recorders and aircraft data recording systems

Note.— Parameters to be recorded are listed in Tables A2.3-1 and A2.3-34 of Appendix 2.3.

2.4.16.1.1 Applicability

2.4.16.1.1.1 Recommendation.— *All turbine-engined aeroplanes with a seating configuration of more than five passenger seats and a maximum certificated take-off mass of 5 700 kg or less for which the individual certificate of airworthiness is first issued on or after 1 January 2016 should be equipped with:*

c) *an ADRS which should record at least the first 7 parameters listed in Table A2.3-34 of Appendix 2.3.*

...

2.4.16.2 **Aeroplanes** — Cockpit voice recorders and cockpit audio recording systems

...

2.4.16.3 **Aeroplanes** — Data link recorders

...

2.4.16.4 **Aeroplanes** — Flight recorders — general

...

2.4.16.4.5 Flight recorder electronic documentation

Recommendation.— *The documentation requirement concerning FDR and ADRS parameters provided by operators or owners to accident investigation authorities should be in electronic format and take account of industry specifications.*

Insert new text as follows:

2.4.16.5 Helicopters — Flight data recorders and aircraft data recording systems

Note.— *Parameters to be recorded are listed in Table A2.3-2 of Appendix 2.3.*

2.4.16.5.1 Applicability

2.4.16.5.1.1 All helicopters of a maximum certificated take-off mass of over 3 175 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2016 shall be equipped with an FDR which shall record at least the first 48 parameters listed in Table A2.3-2 of Appendix 2.3.

2.4.16.5.1.2 All helicopters of a maximum certificated take-off mass of over 7 000 kg, or having a passenger seating configuration of more than 19, for which the individual certificate of airworthiness is first issued on or after 1 January 1989, shall be equipped with an FDR which shall record at least the first 30 parameters listed in Table A2.3-2 of Appendix 2.3.

2.4.16.5.1.3 **Recommendation.**— *All helicopters of a maximum certificated take-off mass of over 3 175 kg up to and including 7 000 kg, for which the individual certificate of airworthiness is first issued on or after 1 January 1989, should be equipped with an FDR which should record at least the first 15 parameters listed in Table A2.3-2 of Appendix 2.3.*

2.4.16.5.2 Recording technology

FDRs shall not use engraving metal foil, frequency modulation (FM), photographic film or magnetic tape.

2.4.16.5.3 Duration

All FDRs shall retain the information recorded during at least the last 10 hours of their operation.

2.4.16.6 Helicopters — Cockpit voice recorders and cockpit audio recording systems

2.4.16.6.1 Applicability

2.4.16.6.1.1 All helicopters of a maximum certificated take-off mass of over 7 000 kg shall be equipped with a CVR. For helicopters not equipped with an FDR, at least the main rotor speed shall be recorded on the CVR.

2.4.16.6.1.2 **Recommendation.**— *All helicopters of a maximum certificated take-off mass of over 3 175 kg for which the individual certificate of airworthiness is first issued on or after 1 January 1987 should be equipped with a CVR. For helicopters not equipped with an FDR, at least the main rotor speed should be recorded on the CVR.*

2.4.16.6.2 Recording technology

CVRs shall not use magnetic tape or wire.

2.4.16.6.3 Duration

All helicopters required to be equipped with a CVR shall be equipped with a CVR which shall retain the information recorded during at least the last two hours of its operation.

2.4.16.7 Helicopters — Data link recorders

2.4.16.7.1 Applicability

2.4.16.7.1.1 All helicopters for which the individual certificate of airworthiness is first issued on or after 1 January 2016, which use any of the data link communications applications referred to in 5.1.2 of Appendix 2.3 and are required to carry a CVR, shall record the data link communications messages on a crash-protected flight recorder.

2.4.16.7.1.2 All helicopters for which the individual certificate of airworthiness was first issued before 1 January 2016, that are required to carry a CVR and are modified on or after 1 January 2016 to install and use any of the data link communications applications referred to in 5.1.2 of Appendix 2.3, shall record the data link communications messages on a crash-protected flight recorder, unless the data link communications equipment is compliant with a type certificate issued or aircraft modification first approved prior to 1 January 2016.

Note 1.— Refer to Table 3.C-4 in Attachment 3.C for examples of data link communication recording requirements.

Note 2.— A Class B AIR could be a means for recording data link communications applications messages to and from the helicopters where it is not practical or is prohibitively expensive to record those data link communications applications messages on FDR or CVR.

Note 3.— The “aircraft modifications” refer to modifications to install the data link communications equipment on the aircraft (that is, structural, wiring).

2.4.16.7.1.3 Recommendation.— *All helicopters for which the individual certificate of airworthiness was first issued before 1 January 2016, that are required to carry a CVR and are modified on or after 1 January 2016 to use any of the data link communications applications referred to in 5.1.2 of Appendix 2.3, should record the data link communications messages on a crash-protected flight recorder.*

2.4.16.7.2 Duration

The minimum recording duration shall be equal to the duration of the CVR.

2.4.16.7.3 Correlation

Data link recording shall be able to be correlated to the recorded cockpit audio.

2.4.16.8 Helicopters — Flight recorders — general

2.4.16.8.1 Construction and installation

Flight recorders shall be constructed, located and installed so as to provide maximum practical protection for the recordings in order that the recorded information may be preserved, recovered and transcribed. Flight recorders shall meet the prescribed crashworthiness and fire protection specifications.

2.4.16.8.2 Operation

2.4.16.8.2.1 Flight recorders shall not be switched off during flight time.

2.4.16.8.2.2 To preserve flight recorder records, flight recorders shall be deactivated upon completion of flight time following an accident or incident. The flight recorders shall not be reactivated before their disposition as determined in accordance with Annex 13.

Note 1.— The need for removal of the flight recorder records from the aircraft will be determined by the investigation authority in the State conducting the investigation with due regard to the seriousness of an occurrence and the circumstances, including the impact on the operation.

Note 2.— The operator or owner’s responsibilities regarding the retention of flight recorder records are contained in 2.4.16.8.3

2.4.16.8.3 Flight recorder records

The pilot-in-command, and/or the owner or operator, shall ensure, to the extent possible, in the event the aeroplane becomes involved in an accident or incident, the preservation of all related flight recorder records, and if necessary the associated flight recorders, and their retention in safe custody pending their disposition as determined in accordance with Annex 13.

2.4.16.8.4 Continued serviceability

Operational checks and evaluations of recordings from the flight recorder systems shall be conducted to ensure the continued serviceability of the recorders.

Note.— Procedures for the inspections of the flight recorder systems are given in Appendix 2.3.

2.4.16.8.5 Flight recorders electronic documentation

Recommendation.— *The documentation requirement concerning FDR parameters provided by the operator or owner to accident investigation authorities should be in electronic format and take account of industry specifications.*

Note.— Industry specification for documentation concerning flight recorder parameters may be found in ARINC 647A, Flight Recorder Electronic Documentation, or equivalent document.

End of new text.

Origin:	<i>Rationale</i>
FLTOPSP/8	Helicopter and aeroplane requirements for flight recorder parameters are not aligned. For simplicity, it is proposed to clearly define the requirements for both within separate sections.

2.4.17 Electronic flight bags (EFBs)

...

2.4.17.1 EFB equipment

Where portable EFBs are used on board an ~~aeroplane~~ aircraft, the pilot-in-command and/or the operator/owner shall ensure that they do not affect the performance of the ~~aeroplane~~ aircraft systems, equipment or the ability to operate the ~~aeroplane~~ aircraft.

2.4.17.2 EFB functions

2.4.17.2.1 Where EFBs are used on board an ~~aeroplane~~ aircraft the pilot-in-command and/or the owner/operator shall:

...

2.4.17.2.2 The State of Registry shall issue a specific approval for the operational use of EFB functions to be used for the safe operation of ~~aeroplanes~~ aircraft.

2.4.17.3 EFB specific approval

When issuing a specific approval for the use of EFBs, the State of Registry shall ensure that:

- a) the EFB equipment and its associated installation hardware, including interaction with ~~aeroplane~~ aircraft systems if applicable, meet the appropriate airworthiness certification requirements;

...

2.4.18 Aeroplane Aircraft operated under an Article 83 bis agreement

...

2.4.18.1 An aeroplane aircraft, when operating under an Article 83 bis agreement entered into between the State of Registry and the State of the principal location of a general aviation operator, shall carry a certified true copy of the agreement summary, in either an electronic or hard copy format. When the summary is issued in a language other than English, an English translation shall be included.

...

CHAPTER 2.5 AEROPLANE AIRCRAFT COMMUNICATION, NAVIGATION AND SURVEILLANCE EQUIPMENT

2.5.1 Communication equipment

2.5.1.1 An aeroplane aircraft to be operated in accordance with the instrument flight rules or at night shall be provided with radio communication equipment. Such equipment shall be capable of conducting two-way communication with those aeronautical stations and on those frequencies prescribed by the appropriate authority.

...

2.5.1.3 An aeroplane aircraft to be operated in accordance with VFR, but as a controlled flight, shall, unless exempted by the appropriate authority, be provided with radio communication equipment capable of conducting two-way communication at any time during flight with such aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

2.5.1.4 An aeroplane aircraft to be operated on a flight to which the provisions of 2.4.4.3.1, 2.4.4.4 or 2.4.5 apply shall, unless exempted by the appropriate authority, be provided with radio communication equipment capable of conducting two-way communication at any time during flight with such aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

2.5.1.5 For aeroplanes, the radio communication equipment required in accordance with 2.5.1.1 to 2.5.1.4 shall provide for communication on the aeronautical emergency frequency 121.5 MHz.

2.5.1.6 **Recommendation.**— *For helicopters, the radio communication equipment required in accordance with 2.5.1.1 to 2.5.1.4 should provide for communication on the aeronautical emergency frequency 121.5 MHz.*

Origin:	<i>Rationale</i>
FLTOPSP/8	Aeroplanes are required to have the capability to communicate on 121.5 MHz, whereas helicopters are only recommended to have this capability.

2.5.1.67 For operations where communication equipment is required to meet an RCP specification for performance-based communication (PBC), an aeroplane aircraft shall, in addition to the requirements specified in 2.5.1.1 to 2.5.1.5:

...

- b) have information relevant to the ~~aeroplane~~ aircraft RCP specification capabilities listed in the flight manual or other ~~aeroplane~~ aircraft documentation approved by the State of Design or State of Registry; and
- c) where the ~~aeroplane~~ aircraft is operated in accordance with a MEL, have information relevant to the ~~aeroplane~~ aircraft RCP specification capabilities included in the MEL.

Editorial Note.— Renumber subsequent paragraphs.

2.5.1.910 The State of Registry shall ensure that, in respect of those ~~aeroplanes~~ aircraft mentioned in 2.5.1.67, adequate provisions exist for:

...

2.5.2 Navigation equipment

2.5.2.1 An ~~aeroplane~~ aircraft shall be provided with navigation equipment which will enable it to proceed:

...

2.5.2.2 For operations where a navigation specification for performance-based navigation (PBN) has been prescribed, an ~~aeroplane~~ aircraft shall, in addition to the requirements specified in 2.5.2.1:

...

- b) have information relevant to the ~~aeroplane~~ aircraft navigation specification capabilities listed in the flight manual or other ~~aeroplane~~ aircraft documentation approved by the State of Design or State of Registry; and
- c) where the ~~aeroplane~~ aircraft is operated in accordance with a MEL, have information relevant to the ~~aeroplane~~ aircraft navigation specification capabilities included in the MEL.

Note.— Guidance on ~~aeroplane~~ aircraft documentation is contained in the Performance-based Navigation (PBN) Manual (Doc 9613).

...

2.5.2.6 ~~For aeroplanes,~~ For flights in defined portions of airspace where, based on Regional Air Navigation Agreement, minimum navigation performance specifications (MNPS) are prescribed, an aeroplane shall be provided with navigation equipment which:

...

Origin:	<i>Rationale</i>
FLTOPSP/8	No Standards exist in Annex 6, Part III regarding MNPS; therefore, the existing Standards in Part II are reserved for aeroplanes only.

2.5.2.7 For aeroplanes, For flights in defined portions of airspace where, based on Regional Air Navigation Agreement, a reduced vertical separation minimum (RVSM) of 300 m (1 000 ft) is applied between FL 290 and FL 410 inclusive, an aeroplane:

...

Origin:	<i>Rationale</i>
FLTOPSP/8	No Standards exist in Annex 6, Part III regarding RVSM; therefore, the existing Standards in Part II are reserved for aeroplanes only.

2.5.2.12 The aeroplane aircraft shall be sufficiently provided with navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment will enable the aeroplane aircraft to navigate in accordance with 2.5.2.1 and where applicable 2.5.2.2, 2.5.2.6 and 2.5.2.7.

...

Origin:	<i>Rationale</i>
FLTOPSP/8	This Standard is considered to be applicable to all aircraft, since the reference to 2.5.2.6 (MNPS) and 2.5.2.7 (RVSM) explicitly states these only need to be considered where applicable.

2.5.2.13 On flights in which it is intended to land in instrument meteorological conditions, an aeroplane aircraft shall be provided with radio equipment capable of receiving signals providing guidance to a point from which a visual landing can be effected. This equipment shall be capable of providing such guidance for each aerodrome at which it is intended to land in instrument meteorological conditions and for any designated alternate aerodromes.

2.5.3 Surveillance equipment

2.5.3.1 An aeroplane aircraft shall be provided with surveillance equipment which will enable it to operate in accordance with the requirements of air traffic services.

2.5.3.2 For operations where surveillance equipment is required to meet an RSP specification for performance-based surveillance (PBS), an aeroplane aircraft shall, in addition to the requirements specified in 2.5.3.1:

...

- b) have information relevant to the aeroplane aircraft RSP specification capabilities listed in the flight manual or other aeroplane aircraft documentation approved by the State of Design or State of Registry; and

- c) where the aeroplane/aircraft is operated in accordance with a MEL, have information relevant to the aeroplane/aircraft RSP specification capabilities included in the MEL.

...

2.5.3.5 The State of Registry shall ensure that, in respect of those aeroplane/aircraft mentioned in 2.5.3.2, adequate provisions exist for:

...

CHAPTER 2.6 AEROPLANE/AIRCRAFT CONTINUING AIRWORTHINESS

...

Note 2.— For the purpose of this chapter “helicopter” includes: engines, power transmissions, rotors, components, accessories, instruments, equipment and apparatus including emergency equipment.

Editorial Note.— Renumber subsequent notes

Origin:	<i>Rationale</i>
FLTOPSP/8	The note regarding the use of the term <i>helicopter</i> in the context of continuing airworthiness is transferred from Annex 6, Part III.

...

2.6.1 Owner’s continuing airworthiness responsibilities

2.6.1.1 The owner of an aeroplane/aircraft, or in the case where it is leased, the lessee, shall ensure that, in accordance with procedures acceptable to the State of Registry:

- a) the aeroplane/aircraft is maintained in an airworthy condition;

...

- c) the certificate of airworthiness of the aeroplane/aircraft remains valid.

2.6.1.2 The owner or the lessee shall not operate an aeroplane/aircraft unless maintenance on the aeroplane/aircraft, including any associated engine, propeller/ or rotor and part, is carried out:

- a) by an organization complying with Annex 8, Part II, Chapter 6 that is either approved by the State of Registry of the aeroplane/aircraft or is approved by another Contracting State and is accepted by the State of Registry; or

...

2.6.1.3 The owner or the lessee shall ensure that the maintenance of the aeroplane/aircraft is performed in accordance with a maintenance programme acceptable to the State of Registry.

2.6.2 Continuing airworthiness records

2.6.2.1 The owner of an aeroplane aircraft, or in the case where it is leased, the lessee, shall ensure that the following records are kept for the periods mentioned in 2.6.2.2:

- a) the total time in service (hours, calendar time and cycles, as appropriate) of the aeroplane aircraft and all life-limited components;

...

- d) the time in service (hours, calendar time and cycles, as appropriate) since the last overhaul of the aeroplane aircraft or its components subject to a mandatory overhaul life;

- e) the current status of the aeroplane aircraft's compliance with the maintenance programme; and

...

2.6.2.3 In the event of a temporary change of owner or lessee, the records shall be made available to the new owner or lessee. In the event of any permanent change of owner or lessee, the records shall be transferred to the new owner or lessee.

Origin:	<i>Rationale</i>
FLTOPSP/8	The requirement to make available or transfer records does not appear in Annex 6, Part III; however, it is considered to apply equally to helicopters and is left unmodified here.

Note 1. — Continuing airworthiness records or related documents, other than a valid certificate of airworthiness, need not be carried in the aeroplane aircraft during international flights.

Note 2. — In the context of 2.6.2.3, a judgement on what should be considered as a temporary change of owner or lessee will need to be made by the State of Registry in the light of the need to exercise control over the records, which will depend on access to them and the opportunity to update them.

2.6.2.4 Records kept and transferred in accordance with 2.6.2 shall be maintained in a form and format that ensures readability, security and integrity of the records at all times.

Note 1.— The form and format of the records may include, for example, paper records, film records, electronic records or any combination thereof.

Note 2.— Guidance regarding electronic aircraft continuing airworthiness records is included in the Airworthiness Manual (Doc 9760).

2.6.3 Continuing airworthiness information – for helicopters

The owner of a helicopter over 3 175 kg maximum certificated take-off mass, or in the case where it is leased, the lessee, shall, as required by the State of Registry, ensure that the information resulting from maintenance and operational experience with respect to continuing airworthiness is transmitted as required by Annex 8, Part II, 4.2.4.1 g) and 4.2.5.

Origin:	<i>Rationale</i>
FLTOPSP/8	The requirement to provide information resulting from maintenance and operational experience in accordance with Annex 8 applies to helicopters over 3 175 kg and aeroplanes over 5 700 kg. For aeroplanes, this Standard is included in Annex 6, Part II, Section III (large and turbo-jet aeroplanes); however, as Section III does not apply to helicopters there is a need to include the requirement here.

Editorial Note.— Renumber subsequent paragraphs.

...

CHAPTER 2.7 ~~AEROPLANE~~ AIRCRAFT FLIGHT CREW

...

CHAPTER 2.8 MANUALS, LOGS AND RECORDS

...

2.8.1 Flight manual

Note.— The ~~aeroplane~~ flight manual contains the information specified in Annex 8.

The ~~aeroplane~~ flight manual shall be updated by implementing changes made mandatory by the State of Registry.

Origin:	<i>Rationale</i>
FLTOPSP/8	Reference to the <i>aeroplane flight manual</i> is modified to refer to the <i>flight manual</i> , which includes both aeroplane and helicopter manuals.

2.8.2 Journey log book

2.8.2.1 A journey log book shall be maintained for every ~~aeroplane~~ aircraft engaged in international air navigation in which shall be entered particulars of the ~~aeroplane~~ aircraft, its crew and each journey.

2.8.2.2 **Recommendation.**— *The ~~aeroplane~~ aircraft journey log should contain the following items:*

- a) ~~aeroplane~~ aircraft nationality and registration;

...

Origin:	<i>Rationale</i>
FLTOPSP/8	Annex 6, Part III GA SARPs do not contain requirements for a journey log book; however, this is referred to in the Convention (article 29) and is applicable to all aircraft.

CHAPTER 2.9 SECURITY

2.9.1 Security of aircraft

The pilot-in-command shall be responsible for the security of the aircraft during its operation.

...

Origin:	<i>Rationale</i>
FLTOPSP/8	Annex 6, Part III does not contain any Standard relating to the security of GA helicopters; however, this is considered to be applicable to all aircraft.

APPENDIX 2.1 LIGHTS TO BE DISPLAYED BY AEROPLANES/AIRCRAFT

(Section 2, Chapter 2.4, 2.4.8, refers)

1. TERMINOLOGY

When the following terms are used in this Appendix, they have the following meanings:

Angles of coverage.

...

- c) Angle of coverage L is formed by two intersecting vertical planes, one parallel to the longitudinal axis of the ~~aeroplane~~ aircraft, and the other 110 degrees to the left of the first, when looking forward along the longitudinal axis.
- d) Angle of coverage R is formed by two intersecting vertical planes, one parallel to the longitudinal axis of the ~~aeroplane~~ aircraft, and the other 110 degrees to the right of the first, when looking forward along the longitudinal axis.

Horizontal plane. The plane containing the longitudinal axis and perpendicular to the plane of symmetry of the ~~aeroplane~~ aircraft.

Longitudinal axis of the ~~aeroplane~~ aircraft. A selected axis parallel to the direction of flight at a normal cruising speed, and passing through the centre of gravity of the ~~aeroplane~~ aircraft.

...

Under command. An ~~aeroplane~~ aircraft on the surface of the water is “under command” when it is able to execute manoeuvres as required by the *International Regulations for Preventing Collisions at Sea* for the purpose of avoiding other vessels.

Under way. An ~~aeroplane~~ aircraft on the surface of the water is “under way” when it is not aground or moored to the ground or to any fixed object on the land or in the water.

...

3. LIGHTS TO BE DISPLAYED ON THE WATER

3.1 General

Note.— The lights specified herein are intended to meet the requirements of Annex 2 for lights to be displayed by ~~aeroplanes~~ aircraft on the water.

...

The lights required by ~~aeroplanes~~ aircraft in each case are described below.

...

3.6 When making way but not under command

...

Note.— The display of lights prescribed in 3.5 and 3.6 is to be taken by other aircraft as signals that the ~~aeroplane~~ aircraft showing them is not under command and cannot therefore get out of the way. They are not signals of ~~aeroplanes~~ aircraft in distress and requiring assistance.

Origin:	Rationale
FLTOPSP/8	<p>Annex 6, Part III does not contain specific requirements for lights to be displayed by helicopter; however, it has been confirmed that such requirements are applicable and a new appendix is being created for Part III, to be used with commercial air transport - helicopters.</p> <p>The requirements presented in this Appendix are correct for helicopters, although some may in fact only be needed by aeroplanes since helicopter operations would not permit activities such as towing. Since the lighting requirements are specified by the type of operation, it is considered appropriate to retain the information as existing in the Appendix and make reference to aircraft rather than aeroplanes as needed.</p>

...

APPENDIX 2.3 FLIGHT RECORDERS

(Section 2, Chapter 2.4, 2.4.16, refers)

The material in this Appendix concerns flight recorders intended for installation in ~~aeroplanes~~ aircraft engaged in international air navigation. Crash-protected flight recorders comprise one or more of the following:

...

1. GENERAL REQUIREMENTS

...

1.4 The flight recorder systems shall be installed so that:

...

- d) ~~aeroplane~~ for aircraft for which the individual certificate of airworthiness is first issued on or after 1 January 2023, a flight crew-operated erase function shall be provided on the flight deck which, when activated, modifies the recording of a CVR and AIR so that it cannot be retrieved using

normal replay or copying techniques. The installation shall be designed to prevent activation during flight. In addition, the probability of an inadvertent activation of an erase function during an accident shall also be minimized.

...

1.8 Means shall be provided for an accurate time correlation between the flight recorder systems recordings.

...

2. FLIGHT DATA RECORDER (FDR) AND AIRCRAFT DATA RECORDING SYSTEM (ADRS)

2.1 Start and stop logic

The FDR or ADRS shall start to record prior to the aeroplane aircraft moving under its own power and record continuously until the termination of the flight when the aeroplane aircraft is no longer capable of moving under its own power.

2.2 Parameters to be recorded

Note.— In previous editions of Annex 6, Part II, types of recorders were defined to capture the first evolutions of FDRs.

2.2.1 The parameters that satisfy the requirements for FDRs are listed in Table A2.3-1 for aeroplanes and Table A2.3-2 for helicopters. The number of parameters to be recorded shall depend on aeroplane aircraft complexity. The parameters without an asterisk (*) are mandatory parameters which shall be recorded regardless of aeroplane aircraft complexity. In addition, the parameters designated by an asterisk (*) shall be recorded if an information data source for the parameter is used by aeroplane aircraft systems or the flight crew to operate the aeroplane aircraft. However, other parameters may be substituted with due regard to the aeroplane aircraft type and the characteristics of the recording equipment.

Origin:	<i>Rationale</i>
FLTOPSP/8	The list of parameters to be recorded for aeroplanes and helicopters, while similar, is not fully equivalent. To avoid any confusion in this area it was decided that two entirely separate tables would be used to provide this information, rather than combining the data into one table and annotating individual elements within this.

2.2.2 If further FDR recording capacity is available, recording of the following additional information should be considered:

...

b) additional engine parameters (EPR, N1, fuel flow, etc.); and

c) retardation information including brake application for use in the investigation of landing overruns and rejected take-offs.

2.2.2.3 The parameters that satisfy the recommendations for flight path and speed as displayed to the pilot(s) are listed below. The parameters without an (*) are mandatory parameters which shall be recorded.

In addition, the parameters designated by an (*) are to be recorded if an information source for the parameter is displayed to the pilot (or, for helicopters, if an information data source for the parameter is used by helicopter systems) and is practicable to record:

<i>For aeroplanes</i>	<i>For helicopters</i>
— Pressure altitude	— Pressure altitude
— Indicated airspeed or calibrated airspeed	— Indicated airspeed
— Heading (primary flight crew reference)	— Outside air temperature
— Pitch attitude	— Heading
— Roll attitude	— Normal acceleration
— Engine thrust/power	— Lateral acceleration
— Landing gear status*	— Longitudinal acceleration (body axis)
— Total or outside air temperature*	— Time or relative time count
— Time*	— Navigation data*: drift angle, wind speed, wind direction, latitude/longitude
— Navigation data*: Drift angle, wind speed, wind direction, latitude/longitude	— Radio altitude*
— Radio altitude*	

Origin:	<i>Rationale</i>
FLTOPSP/8	Due to the different operating characteristics of helicopters and aeroplanes, different parameters are required for each type to satisfy the requirements for flight path and speed. To avoid confusion the requirements are separated fully between aeroplanes and helicopters.

2.2.4 The parameters that satisfy the requirements for ADRS are the first 7 parameters listed in Table A2.3-34 for aeroplanes, and A2.3-5 for helicopters.

2.2.5 If further ADRS recording capacity is available, the recording of any parameters from 8 onwards defined in Table A2.3-34 for aeroplanes, and A2.3-5 for helicopters shall be considered.

...

3. COCKPIT VOICE RECORDER (CVR) AND COCKPIT AUDIO RECORDING SYSTEM (CARS)

3.1 Start and stop logic

The CVR or CARS shall start to record prior to the ~~aeroplane~~aircraft moving under its own power and record continuously until the termination of the flight when the ~~aeroplane~~aircraft is no longer capable of moving under its own power. In addition, depending on the availability of electrical power, the CVR or CARS shall start to record as early as possible during the cockpit checks prior to engine start at the beginning of the flight until the cockpit checks immediately following engine shutdown at the end of the flight.

3.2 Signals to be recorded

3.2.1 The CVR shall record simultaneously on four separate channels, or more, at least the following:

- a) voice communication transmitted from or received in the ~~aeroplane~~aircraft by radio;

- b) aural environment on the flight deck;
- c) voice communication of flight crew members on the flight deck using the aeroplane's aircraft's interphone system, if installed;
- d) voice or audio signals identifying navigation or approach aids introduced in the headset or speaker; and
- e) for aeroplanes, digital communications with ATS, unless recorded by the FDR; and
- f) for helicopters, voice communication of flight crew members using the passenger address system, if installed.

Origin:	<i>Rationale</i>
FLTOPSP/8	Minor differences in signals to be recorded are accommodated for aeroplanes and helicopters. In this case it is considered simple enough to distinguish between the elements applicable to each type and a merged list is proposed.

...

3.2.3 The CARS shall record simultaneously on two separate channels, or more, at least the following:

- a) voice communication transmitted from or received in the aeroplane aircraft by radio;
- b) aural environment on the flight deck; and
- c) voice communication of flight crew members on the flight deck using the aeroplane's aircraft's interphone system, if installed.

...

4. AIRBORNE IMAGE RECORDER (AIR) AND AIRBORNE IMAGE RECORDING SYSTEM (AIRS)

4.1 Start and stop logic

The AIR or AIRS shall start to record prior to the aeroplane aircraft moving under its own power and record continuously until the termination of the flight when the aeroplane aircraft is no longer capable of moving under its own power. In addition, depending on the availability of electrical power, the AIR or AIRS shall start to record as early as possible during the cockpit checks prior to engine start at the beginning of the flight until the cockpit checks immediately following engine shutdown at the end of the flight.

...

5. DATA LINK RECORDER (DLR)

5.1 Applications to be recorded

...

5.1.2 Messages applying to the applications listed in Table A2.3-23 shall be recorded. Applications without the asterisk (*) are mandatory applications which shall be recorded regardless of the system complexity. Applications with an (*) shall be recorded only as far as is practicable given the architecture of the system.

Table A2.3-1 Parameter characteristics for flight data recorders - Aeroplanes

...

Table A2.3-2. Parameter characteristics for flight data recorders - Helicopters

Serial number	Parameter	Applicability	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
1	Time (UTC when available, otherwise relative time count or GNSS time sync)		24 hours	4	±0.125% /h	1 s
2	Pressure altitude		-300 m (-1 000 ft) to maximum certificated altitude of aircraft +1 500 m (+5 000 ft)	1	±30 m to ±200m (±100 ft to ±700 ft)	1.5 m (5 ft)
3	Indicated airspeed		As the installed pilot display measuring system	1	±3%	1 kt
4	Heading		360°	1	±2°	0.5°
5	Normal acceleration		-3 g to +6 g	0.125	±0.09 g excluding a datum error of ±0.045 g	0.004 g
6	Pitch attitude		±75° or 100% of useable range whichever is greater	0.5	±2°	0.5°
7	Roll attitude		±180°	0.5	±2°	0.5°
8	Radio transmission keying		On-off (one discrete)	1	—	—
9	Power on each engine		Full range	1 (per engine)	±2%	0.1% of full range
10	Main rotor:					
	Main rotor speed		50–130%	0.51	±2%	0.3% of full range
	Rotor brake		Discrete		—	—
11	Pilot input and/or control surface position — primary controls (collective pitch, longitudinal cyclic pitch, lateral cyclic pitch, tail rotor pedal)		Full range	0.5 (0.25 recommended)	±2% unless higher accuracy uniquely required	0.5% of operating range

Serial number	Parameter	Applicability	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
12	Hydraulics, each system (low pressure and selection)		Discrete	1	—	—
13	Outside air temperature		Sensor range	2	±2°C	0.3°C
14*	Autopilot/ autothrottle/ AFCS mode and engagement status		A suitable combination of discretes	1	—	—
15*	Stability augmentation system engagement		Discrete	1	—	—
16*	Main gearbox oil pressure		As installed	1	As installed	6.895 kN/m ² (1 psi)
17*	Main gearbox oil temperature		As installed	2	As installed	1°C
18	Yaw rate		±400°/second	0.25	±1.5% maximum range excluding datum error of ±5%	±2°/s
19*	Sling load force		0 to 200% of certified load	0.5	±3% of maximum range	0.5% for maximum certified load
20	Longitudinal acceleration		±1 g	0.25	±0.015 g excluding a datum error of ±0.05 g	0.004 g
21	Lateral acceleration		±1 g	0.25	±0.015 g excluding a datum error of ±0.05 g	0.004 g
22*	Radio altitude		-6 m to 750 m (-20 ft to 2 500 ft)	1	±0.6 m (±2 ft) or ±3% whichever is greater below 150 m (500 ft) and ±5% above 150 m (500 ft)	0.3 m (1 ft) below 150 m (500 ft), 0.3 m (1 ft) + 0.5% of full range above 150 m (500 ft)
23*	Vertical beam deviation		Signal range	1	±3%	0.3% of full range
24*	Horizontal beam deviation		Signal range	1	±3%	0.3% of full range
25	Marker beacon passage		Discrete	1	—	—
26	Warnings		Discrete(s)	1	—	—
27	Each navigation receiver frequency selection		Sufficient to determine selected frequency	4	As installed	—
28*	DME 1 and 2 distances		0-370 km (0-200 NM)	4	As installed	1 852 m (1 NM)

Serial number	Parameter	Applicability	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
29*	Navigation data (latitude/longitude, ground speed, drift angle, wind speed, wind direction)		As installed	2	As installed	As installed
30*	Landing gear and gear selector position		Discrete	4	—	—
31*	Engine exhaust gas temperature (T4)		As installed	1	As installed	
32*	Turbine inlet temperature (TIT/ITT)		As installed	1	As installed	
33*	Fuel contents		As installed	4	As installed	
34*	Altitude rate		As installed	1	As installed	
35*	Ice detection		As installed	4	As installed	
36*	Helicopter health and usage monitor system		As installed	—	As installed	—
37	Engine control modes		Discrete	1	—	—
38*	Selected barometric setting (pilot and co-pilot)		As installed	64 (4 recommended)	As installed	0.1 mb (0.01 in Hg)
39*	Selected altitude (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection
40*	Selected speed (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection
41*	Selected Mach (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection
42*	Selected vertical speed (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection
43*	Selected heading (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection

Serial number	Parameter	Applicability	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
44*	Selected flight path (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection
45*	Selected decision height		As installed	4	As installed	Sufficient to determine crew selection
46*	EFIS display format (pilot and co-pilot)		Discrete(s)	4	—	—
47*	Multi-function/engine/alerts display format		Discrete(s)	4	—	—
48*	Event marker		Discrete	1	—	—
49*	GPWS/TAWS/GCAS status (selection of terrain display mode including pop-up display status) and (terrain alerts, both cautions and warnings, and advisories) and (on/off switch position) and (operational status)	Application for type certification is submitted to a Contracting State on or after 1 January 2023	Discrete(s)	1	As installed	
50*	TCAS/ACAS (traffic alert and collision avoidance system) and (operational status)	Application for type certification is submitted to a Contracting State on or after 1 January 2023	Discrete(s)	1	As installed	
51*	Primary flight controls – pilot input forces	Application for type certification is submitted to a Contracting State on or after 1 January 2023	Full range	0.125 (0.0625 recommended)	± 3% unless higher accuracy is uniquely required	0.5% of operating range
52*	Computed centre of gravity	Application for type certification is submitted to a Contracting State on or after 1 January 2023	As installed	64	As installed	1% of full range
53*	Helicopter computed weight	Application for type certification is submitted to a Contracting State on or after 1 January 2023	As installed	64	As installed	1% of full range

Origin: FLTOPSP/8	<i>Rationale</i> The list of parameters to be recorded for aeroplanes and helicopters, while similar, is not fully equivalent. To avoid any confusion in this area it was decided that two entirely separate tables would be used to provide this information, rather than combining the data into one table and annotating individual elements within.
-----------------------------	--

Table A2.3-23. Description of applications for data link recorders

...

Table A2.3-34. Parameter characteristics for aircraft data recording systems - Aeroplanes

...

Table A2.3-5. Parameter characteristics for aircraft data recording systems - Helicopters

N°	Parameter name	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
1	Heading:					
	a) Heading (Magnetic or True)	±180°	1	±2°	0.5°	*Heading is preferred, if not available, yaw rate shall be recorded
	b) Yaw rate	±300°/s	0.25	±1% + drift of 360°/h	2°/s	
2	Pitch:					
	a) Pitch attitude	±90°	0.25	±2°	0.5°	*Pitch attitude is preferred, if not available, pitch rate shall be recorded
	b) Pitch rate	±300°/s	0.25	±1% + drift of 360°/h	2°/s	
3	Roll:					
	a) Roll attitude	±180°	0.25	±2°	0.5°	*Roll attitude is preferred, if not available, roll rate shall be recorded
	b) Roll rate	±300°/s	0.25	±1% + drift of 360°/h	2°/s	
4	Positioning system:					
	a) Time	24 hours	1	±0.5°	0.1°	UTC time preferred where available
	b) Latitude/longitude	Latitude:±90° Longitude:±180°	2 (1 if available)	As installed (0.00015° recommended)	0.00005°	

N°	Parameter name	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
	c) Altitude	-300 m (-1 000 ft) to maximum certificated altitude of aircraft +1 500 m (5 000 ft)	2 (1 if available)	As installed (±15 m (±50 ft) recommended)	1.5 m (5 ft)	
	d) Ground speed	0-1 000 kt	2 (1 if available)	As installed (±5 kt recommended)	1 kt	
	e) Track	0-360°	2 (1 if available)	As installed (± 2° recommended)	0.5°	
	f) Estimated error	Available range	2 (1 if available)	As installed	As installed	Shall be recorded if readily available
5	Normal acceleration	-3 g to + 6 g	0.25 (0.125 if available)	As installed (±0.09 g excluding a datum error of ±0.05 g recommended)	0.004 g	
6	Longitudinal acceleration	±1 g	0.25 (0.125 if available)	As installed (±0.015 g excluding a datum error of ±0.05 g recommended)	0.004 g	
7	Lateral acceleration	±1 g	0.25 (0.125 if available)	As installed (±0.015 g excluding a datum error of ±0.05 g recommended)	0.004 g	
8	External static pressure (or pressure altitude)	34.4 hPa (1.02 in-Hg) to 310.2 hPa (9.16 in-Hg) or available sensor range	1	As installed (±1 hPa (0.3 in-Hg) or ±30 m (±100 ft) to ±210 m (±700 ft) recommended)	0.1 hPa (0.03 in-Hg) or 1.5 m (5 ft)	
9	Outside air temperature (or total air temperature)	-50° to +90°C or available sensor range	2	As installed (±2°C recommended)	1°C	
10	Indicated air speed	As the installed pilot display measuring system or available sensor range	1	As installed (±3% recommended)	1 kt (0.5 kt recommended)	
11	Main rotor speed (Nr)	50% to 130% or available sensor range	0.5	As installed	0.3% of full range	
12	Engine RPM (*)	Full range including overspeed condition	Each engine each second	As installed	0.2% of full range	*For piston-engined helicopters
13	Engine oil pressure	Full range	Each engine each second	As installed (5% of full range recommended)	2% of full range	

N°	Parameter name	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
14	Engine oil temperature	Full range	Each engine each second	As installed (5% of full range recommended)	2% of full range	
15	Fuel flow or pressure	Full range	Each engine each second	As installed	2% of full range	
16	Manifold pressure (*)	Full range	Each engine each second	As installed	0.2% of full range	*For piston-engined helicopters
17	Engine thrust/power/torque parameters required to determine propulsive thrust/power*	Full range	Each engine each second	As installed	0.1% of full range	*Sufficient parameters for example, EPR/N1 or torque/Np as appropriate to the particular engine shall be recorded to determine power. A margin for possible overspeed should be provided. Only for turbine-engined helicopters.
18	Engine gas generator speed (Ng) (*)	0–150%	Each engine each second	As installed	0.2% of full range	*Only for turbine-engined helicopters
19	Free power turbine speed (Nf) (*)	0–150%	Each engine each second	As installed	0.2% of full range	*Only for turbine-engined helicopters
20	Collective pitch	Full range	0.5	As installed	0.1% of full range	
21	Coolant temperature (*)	Full range	1	As installed ($\pm 5^{\circ}\text{C}$ recommended)	1° C	*Only for piston-engined helicopters
22	Main voltage	Full range	Each engine each second	As installed	1 Volt	
23	Cylinder head temperature (*)	Full range	Each cylinder each second	As installed	2% of full range	*Only for piston-engined helicopters
24	Fuel quantity	Full range	4	As installed	1% of full range	
25	Exhaust gas temperature	Full range	Each engine each second	As installed	2% of full range	
26	Emergency voltage	Full range	Each engine each second	As installed	1 Volt	
27	Trim surface position	Full range or each discrete position	1	As installed	0.3% of full range	
28	Landing gear position	Each discrete position*	Each gear every two seconds	As installed		*Where available, record up-and-locked and down-and-locked position

N°	Parameter name	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
29	Novel/unique aircraft features	As required	As required	As required	As required	

Origin:	<i>Rationale</i>
FLTOPSP/8	The list of parameters to be recorded for aeroplanes and helicopters, while similar, is not fully equivalent. To avoid any confusion in this area it was decided that two entirely separate tables would be used to provide this information, rather than combining the data into one table and annotating individual elements within.

APPENDIX 2.4 GENERAL AVIATION SPECIFIC APPROVALS

...

2. SPECIFIC APPROVAL TEMPLATE

...

Notes.—

...

4. Insert the ~~aeroplane~~ aircraft make, model and series, or master series, if a series has been designated. The CAST/ICAO taxonomy is available at: <http://www.intlaviationstandards.org/>.

...

APPENDIX 2.5 ARTICLE 83 bis AGREEMENT SUMMARY

(Chapter 2.4, 2.4.18.4, refers)

...

2. ARTICLE 83 *bis* AGREEMENT SUMMARY

ARTICLE 83 <i>bis</i> AGREEMENT SUMMARY		
Title of the Agreement:		
State of Registry:		Focal point:
State of the principal location of a general aviation operator:		Focal point:
Date of signature:	By State of Registry ¹ :	
	By State of the principal location of a general aviation operator ¹ :	
Duration:	Start Date ¹ :	End Date (if applicable) ² :
Languages of the Agreement		
ICAO Registration No.:		
Umbrella Agreement (if any) with ICAO Registration number:		

Convention on International Civil Aviation	ICAO Annexes affected by the transfer of responsibility in respect of certain functions and duties to the State of the principal location of a general aviation operator		
Article 12: Rules of the air	Annex 2, all chapters	Yes <input type="checkbox"/>	
		No <input type="checkbox"/>	
Article 30 a): Aircraft radio equipment	Radio Station Licence	Yes <input type="checkbox"/>	
		No <input type="checkbox"/>	
Articles 30 b) and 32 a): Licenses of personnel	Annex 1, Chapters 1, 2, 3 and 6; and Annex 6, Part I, Radio Operator; or Annex 6, Part II (qualifications and/or flight crew member licensing); or Annex 6, Part III, Section II (composition of the flight crew) (radio operator); or Annex 6, Part III, Section III (qualifications)	Yes <input type="checkbox"/>	Annex 6: [Specify Part and paragraph] ³
		No <input type="checkbox"/>	
Article 31: Certificates of Airworthiness	Annex 6 Part I or Part III, Section II	Yes <input type="checkbox"/>	[Specify Part and chapters] ³
		No <input type="checkbox"/>	
	Annex 6 Part II or Part III, Section III	Yes <input type="checkbox"/>	[Specify Part and chapters] ³
		No <input type="checkbox"/>	
	Annex 8 Part II, Chapters 3 and 4	Yes <input type="checkbox"/>	[Specify chapters] ³
		No <input type="checkbox"/>	

Aircraft affected by the transfer of responsibilities to the State of the principal location of a general aviation operator					
Aircraft make, model, series	Nationality and registration marks	Serial No.	AOC No. (Commercial air transport)	Dates of transfer of responsibilities	
				From ¹	To (if applicable) ²

Origin:	<i>Rationale</i>
FLTOPSP/8	The reorganization of GA helicopter SARPs necessitates a minor edit to the 83 <i>bis</i> agreement template to remove references to Annex 6, Part III, Section III.

...

ATTACHMENT 2.A CARRIAGE AND USE OF OXYGEN

Supplementary to 2.2.3.811

...

1. OXYGEN SUPPLY

...

1.2 A flight to be operated with a pressurized ~~aeroplane~~ aircraft should not be commenced unless a sufficient quantity of stored breathing oxygen is carried to supply all crew members and passengers, as is appropriate to the circumstances of the flight being undertaken, in the event of loss of pressurization, for any period that the atmospheric pressure in any compartment occupied by them would be less than 700 hPa. In addition, when an ~~aeroplane~~ aircraft is operated at flight altitudes at which the atmospheric pressure is less than 376 hPa, or which, if operated at flight altitudes at which the atmospheric pressure is more than 376 hPa and cannot descend safely within four minutes to a flight altitude at which the atmospheric pressure is equal to 620 hPa, there shall be no less than a 10-minute supply for the occupants of the passenger compartment.

2. USE OF OXYGEN

2.1 All flight crew members, when engaged in performing duties essential to the safe operation of an ~~aeroplane~~ aircraft in flight, should use breathing oxygen continuously whenever the circumstances prevail for which its supply has been indicated to be necessary in 1.1 or 1.2.

...

ATTACHMENT 2.B GUIDE TO CURRENT FLIGHT RECORDER PROVISIONS

Supplementary to Chapter 2, 2.4.16

INTRODUCTION

...

Table A2.C-1. SARPs for the recording of flight parameters - Aeroplanes

...

Table A2.C-2. SARPs for the recording of flight parameters – Helicopters

Date	Maximum certificated take-off mass (MCTOM)	
	Seating configuration of more than 19 passengers or over 7 000 kg	Over 3 175 kg
	All helicopters first certificate of airworthiness	All helicopters first certificate of airworthiness
1989 ⇒	2.4.16.5.1.2	2.4.16.5.1.3
2016 ⇒	2.4.16.6.1.1	2.4.16.6.1.2

Table A2.C-23 CVR/CARS installation SARPs – Aeroplanes

...

Table A2.C-4. CVR/CARS installation SARPs - Helicopters

Date	Maximum certificated take-off mass (MCTOM)	
	Over 7 000 kg	Over 3 175 kg
	All helicopters	All helicopters first certificate of airworthiness
1987 ⇒	2.4.16.6.1.1	2.4.16.6.1.2

...

Origin: FLTOPSP/8	<i>Rationale</i> Additional references are provided for helicopter flight parameter recording and CVR installation.
-----------------------------	--

INITIAL PROPOSAL 3

Runway overrun awareness and alerting system (ROAAS)

SECTION 3
LARGE AND TURBOJET AEROPLANES

...

CHAPTER 3.6 AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

...

3.6.11 Turbine aeroplane - Runway overrun awareness and alerting system (ROASS)

3.6.11.1 **Recommendation.**— *All turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg, for which the individual Certificate of Airworthiness is first issued on or after 1 January 2030, should be equipped with a runway overrun awareness and alerting system (ROASS).*

Note 1.— An example of relevant guidance material related to ROASS may be found in EUROCAE ED-250, Minimum Operation Performance Specification (MOPS) for Runway Overrun Awareness and Alerting System (ROASS).

Note 2.— Operator requirements for the use of a ROASS are contained in PANS-OPS, Volume III, Section 11.

3.6.11.2 Microphones

...

Origin:	<i>Rationale</i>
FLTOPSP/8	<p>Following further study on the implementation of ROASS, including a review of aircraft models affected by the Standards in Annex 6, Part II and the accident/incident data for these aircraft models, there was sufficient justification for including a Recommendation for the use of ROASS in Part II – International General Aviation, Section 3 – Large and Turbojet Aeroplanes.</p> <p>Following the requirements of Article 41 of the Convention, a minimum lead time of 3 years is required for Standards requiring additional equipment to be carried. With a proposed applicability of November 2026, this results in a forward equipage date of 1 January 2030.</p> <p>Note 1 has been revised from the original note in Part I to reflect the issue, reported by industry, that ED-250 is overly prescriptive in places and many ROASS systems which are currently in use or under development do not precisely conform to all of the MOPS in this document.</p>

INITIAL PROPOSAL 4

Other minor amendments

INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES

CHAPTER 1.1 DEFINITIONS

...

Acts of unlawful interference. These are acts or attempted acts such as to jeopardize the safety of civil aviation, and air transport, i.e. including but not limited to:

- • unlawful seizure of aircraft in flight,
- • destruction of an aircraft in service,
- unlawful seizure of aircraft on the ground,
- • hostage-taking on board an aircraft or on aerodromes,
- • forcible intrusion on board an aircraft, at an airport or on the premises of an aeronautical facility,
- • introduction on board an aircraft or at an airport of a weapon or hazardous device or material intended for criminal purposes,
- • use of an aircraft in service for the purpose of causing death, serious bodily injury, or serious damage to property or the environment,
- • communication of false information as to jeopardize the safety of an aircraft in flight or on the ground, of passengers, crew, ground personnel or the general public, at an airport or on the premises of a civil aviation facility.

Origin:	<i>Rationale</i>
FLTOPSP/9	Annex 6 (all parts) refers to acts of unlawful interference; however, the definition included in Part II is no longer consistent with Annex 17. The definition and bulleted format is amended in line with the current Annex 17 definition.

...

Area navigation (RNAV). A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note.—Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.

Origin:	<i>Rationale</i>
FLTOPSP/8	During the development work for the Fifth Edition of the <i>Performance-based Navigation (PBN) Manual</i> (Doc 9613), it was clarified that all area navigation operations should now be included in the PBN concept. The definition was updated to reflect this.

...

Performance-based navigation (PBN). Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

Note.— Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, ~~availability~~ and functionality needed for the proposed operation in the context of a particular airspace concept. Availability of global navigation satellite system signal in space (GNSS SIS) or some other NAVAID infrastructure is considered within the airspace concept in order to enable the navigation application.

Origin:	<i>Rationale</i>
FLTOPSP/8	The definition of performance-based navigation no longer includes <i>availability</i> , but instead refers to it as being part of the GNSS SIS or other navigational aid infrastructure.

...

CHAPTER 3.4 FLIGHT OPERATIONS

...

3.4.2 Operational management

...

3.4.2.8 Fatigue management programme

The operator shall establish and implement a fatigue management programme that ensures that all operator personnel involved in the operation and maintenance of aircraft do not carry out their duties when fatigued. The programme shall address flight and duty times and be included in the operations manual.

Note.— Guidance on fatigue management programmes can be found in the ~~Fatigue Management Manual for General Aviation (Doc 10033)~~ Manual for the Oversight of Fatigue Management Approaches (Doc 9966).

Origin:	<i>Rationale</i>
FLTOPSP/8	Reference is changed to the top level manual relating to fatigue management guidance, which refers to other manuals as appropriate.

...

3.4.3 Flight preparation

...

3.4.3.5 Fuel requirements

...

3.4.3.5.2 The amount of usable fuel to be carried shall, as a minimum, be based on:

...

b) the operating conditions for the planned flight including:

1) anticipated aeroplane mass;

2) **NOTAMs** Notices to Airmen;

...

Origin:	<i>Rationale</i>
FLTOPSP/8	PANS-AIM has been amended to reflect the use of NOTAM as a term, rather than the acronym “Notice to Airmen”. The use of the old term is therefore replaced with the new usage of NOTAM.

3.4.3.8 Refuelling with passengers on board

...

3.4.3.8.2 When refuelling with passengers embarking, on board or disembarking, two-way communication shall be maintained by the aeroplane’s intercommunication system or other suitable means between the ground crew supervising the refuelling and the qualified personnel on board the aeroplane.

Note 1.— The provisions of 3.4.3.58.1 do not necessarily require the deployment of integral aeroplane stairs or the opening of emergency exits as a prerequisite to refuelling.

...

Origin:	<i>Rationale</i>
FLTOPSP/9	Updated with the correct reference.

...

CHAPTER 3.5 AEROPLANE PERFORMANCE OPERATING LIMITATIONS

...

3.5.2 Applicable to aeroplanes certificated in accordance with Parts IIIA and IIIB of Annex 8

3.5.2.5 In applying the Standards of this chapter, account shall be taken of all factors that significantly affect the performance of the aeroplane (such as: mass, operating procedures, the pressure altitude appropriate to the elevation of the aerodrome, runway slope, the ambient temperature, wind, and surface conditions of the runway at the expected time of use, i.e. presence of slush, water and/or ice, for landplanes, water surface condition for seaplanes). Such factors shall be taken into account directly as operational parameters or indirectly by means of allowances or margins, which may be provided in the scheduling of performance data or in the comprehensive and detailed code of performance in accordance with which the aeroplane is being operated.

Note.— Guidelines for using runway surface condition information on board aircraft in accordance with 2.2.4.43.4.4.5 are contained in the PANS-Aerodromes (Doc 9981) and in the Aeroplane Performance Manual (Doc 10064).

Origin:	<i>Rationale</i>
FLTOPSP/9	The reference to runway surface condition information is updated to refer to the relevant information in Section 3 (Large and Turbojet Aircraft).

CHAPTER 3.6 AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

...

3.6.3.4 Aeroplanes on long-range over-water flights

Editorial Note.— *Renumber* subsequent sub paragraphs accordingly.

...

3.6.3.5 Aeroplanes for which the individual certificate of airworthiness was first issued before 1 January 1990

Editorial Note.— *Renumber* subsequent sub-paragraphs and section titles accordingly.

...

Origin:	<i>Rationale</i>
FLTOPSP/9	The paragraphs in Section 3.6 relating to operation of aeroplanes on long range over-water flights and at altitudes with reduced atmospheric pressure are not subordinate to paragraph 3.6.3, which is related to flight recorders. The numbering is corrected to show the correct hierarchy.

CHAPTER 3.8 AEROPLANE CONTINUING AIRWORTHINESS

...

3.8.4 Continuing airworthiness information

The operator of an aeroplane of a maximum certificated take-off mass in excess of 5 700 kg shall, as prescribed by the State of Registry, ensure that the information resulting from maintenance and operational experience with respect to continuing airworthiness, is transmitted as required by Annex 8, Part II, 4.2.3, 1 f) and 4.2.4.

Origin:	<i>Rationale</i>
FLTOPSP/9	Updated with the correct reference.

...

APPENDIX 2.3 FLIGHT RECORDERS

(Section 2, Chapter 2.4, 2.4.16, refers)

...

2. FLIGHT DATA RECORDER (FDR) AND AIRCRAFT DATA RECORDING SYSTEM (ADRS)

...

Table A2.3-1 Parameter characteristics for flight data recorders

Serial number	Parameter	Applicability	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
...						
38*	Selected barometric setting (pilot, co-pilot)		As installed	64	As installed	0.1 mb (0.0403 in-Hg)

...

Table A2.3-3. Parameter characteristics for aircraft data recording systems

No.	Parameter name	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
...						
8	External static pressure (or pressure altitude)	34.4 mb (3.44 in-Hg) to 310.2 mb (31.02 in-Hg) or available sensor range	1	As installed (± 1 mb (0.403 in-Hg) or ± 30 m (± 100 ft) to ± 210 m (± 700 ft) recommended)	0.1 mb (0.0403 in-Hg) or 1.5 m (5 ft)	

...

Origin:	<i>Rationale</i>
FLTOPSP/9	Conversions from mb to in-Hg corrected.

PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS
ANNEX 6
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION
OPERATION OF AIRCRAFT
PART III — *INTERNATIONAL OPERATIONS* — *HELICOPTERS*

**NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT**

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

1. ~~Text to be deleted is shown with a line through it.~~ text to be deleted
2. **New text to be inserted is highlighted with grey shading.** new text to be inserted
3. ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading. new text to replace existing text

PROPOSED AMENDMENT TO
ANNEX 6 — OPERATION OF AIRCRAFT
PART III — INTERNATIONAL OPERATIONS — HELICOPTERS

INITIAL PROPOSAL 1
Authorizations, acceptance and approval

ABBREVIATIONS AND SYMBOLS
(used in this Annex)

...

HEA High elevation aerodromes

...

ANNEX 6 — PART III

SECTION I

GENERAL

**INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

CHAPTER 1. DEFINITIONS

...

Aircraft operating manual. A manual, acceptable to the State of the Operator, containing normal, abnormal and emergency procedures, checklists, limitations, performance information, details of the aircraft systems and other material relevant to the operation of the aircraft.

Note.— *The aircraft operating manual is part of the operations manual.*

...

ANNEX 6 — PART III

SECTION II
INTERNATIONAL COMMERCIAL AIR TRANSPORT

...

CHAPTER 2. FLIGHT OPERATIONS

...

2.3 FLIGHT PREPARATION

...

2.3.5 Meteorological conditions

2.3.5.3 To ensure that an adequate margin of safety is observed in determining whether or not an approach and landing can be safely carried out at each alternate heliport or landing location, the operator shall specify appropriate incremental values for height of cloud base and visibility, ~~acceptable to the State of the Operator,~~ to be added to the operator’s established heliport or landing location operating minima.

<p>Origin: FLTOPSP/8</p>	<p><i>Rationale</i></p> <p>In developing a consistent methodology for addressing authorizations in Annex 6, it was determined that acceptance by the State of the Operator was assumed with the Standards relating to operation, except where specific action was required by the State of the Operator (for approvals and specific approvals). Therefore, no explicit statement of acceptability was needed. If a higher level of authorization was, needed it would be explicitly stated.</p> <p>The Standard requires the operator to define additional cloud base and visibility increments. The State of the Operator is therefore required to ensure it has been done correctly – the addition of ‘acceptable to the State of the Operator’ is implied by the requirement itself and the need to oversee the operation on behalf of the State.</p>
-------------------------------------	--

2.3.6 Fuel and oil requirements

2.3.6.2 *VFR operations.* The fuel and oil carried in order to comply with 2.3.6.1 shall, in the case of VFR operations, be at least the amount to allow the helicopter to:

- c) have an additional amount of fuel to provide for the increased consumption on the occurrence of any of the potential contingencies specified in the operations manual by the operator ~~to the satisfaction of the State of the Operator.~~

2.3.6.3.1 When an alternate is not required, in terms of 2.3.4.2.1 a), to fly to and execute an approach at the heliport or landing location to which the flight is planned, and thereafter to have:

- b) an additional amount of fuel to provide for the increased consumption on the occurrence of any of the potential contingencies specified in the operations manual by the operator ~~to the satisfaction of the State of the Operator.~~

2.3.6.3.2 When an alternate is required, to fly to and execute an approach, and a missed approach, at the heliport or landing location to which the flight is planned, and thereafter:

...

- c) have an additional amount of fuel to provide for the increased consumption on the occurrence of any of the potential contingencies specified in the operations manual by the operator ~~to the satisfaction of the State of the Operator.~~

...

Origin:	<i>Rationale</i>
FLTOPSP/8	The phrase <i>to the satisfaction of the State of the Operator</i> is not defined and does not have a clear meaning in terms of authorizations. Reference is made instead to the contingencies considered by the operator that are included in the operations manual, which itself is reviewed by the State of the Operator. This ensures oversight of the establishment of contingency fuel in a manner which is clear and defined.

...

**CHAPTER 4. HELICOPTER INSTRUMENTS, EQUIPMENT
AND FLIGHT DOCUMENTS**

...

**4.4 INSTRUMENTS AND EQUIPMENT FOR FLIGHTS
OPERATED UNDER VFR AND IFR — BY DAY AND NIGHT**

...

4.4.3 All helicopters when operating in accordance with IFR, or when the helicopter cannot be maintained in a desired attitude without reference to one or more flight instruments, shall be equipped with:

...

- k) a stabilization system, unless it has been demonstrated to the ~~satisfaction of the~~ certifying authority that the helicopter possesses, by nature of its design, adequate stability without such a system;

Origin:	<i>Rationale</i>
FLTOPSP/8	The phrase “to the satisfaction of the certifying authority” is not defined and does not have a clear meaning in terms of authorizations. Removing the reference to “satisfaction” still retains the requirement to demonstrate to the certifying authority that the helicopter does not need a stabilizing system. In this context, there is no benefit to the inclusion of reference to satisfaction; “demonstrated” implies that it has been successfully demonstrated.

...

APPENDIX 3. AIR OPERATOR CERTIFICATE (AOC)
(Section II, Chapter 2, 2.2.1.5 and 2.2.1.6, refers)

...

3. OPERATIONS SPECIFICATIONS FOR EACH AIRCRAFT MODEL

...

Notes.—

...

- 7. *List the ~~geographical~~ area(s) of authorized operation (by geographical coordinates or specific routes, flight information region or national or regional boundaries), including any limitations related to aerodrome elevations (such as high elevation aerodrome (HEA)), as clearly defined by the issuing authority and indicating any designated airspace requiring approval (such as the North Atlantic High Level Airspace (NAT HLA)). The authorized area(s) of operation may be issued in attachments to the operations specifications.*

Origin:	<i>Rationale</i>
FLTOPSP/8	<p>The need to further clarify the means by which the operators area of operations is approved was identified. Additional information is included in Attachment B and the note referring to the area of operations is expanded in line with this guidance.</p> <p>This ensures that specific operations related to the area of operations, such as the use of the NAT HLA or operations to high elevation aerodromes (HEA) are included explicitly in the operations specifications.</p>

...

**ATTACHMENT C. AIR OPERATOR CERTIFICATION
AND VALIDATION**

Supplementary to Section II, Chapter 2, 2.2.1

...

2. REQUIRED TECHNICAL SAFETY EVALUATIONS

...

Insert new text as follows:

2.6 Area of operation

2.6.1 In deciding which area(s) of operation to authorize and include in the operations specifications, the State of the Operator should take into account the following factors:

- a) the adequacy of the operational control (such as staffing, communication means, aircraft tracking means, access to local regulations and weather information) within the proposed area(s) of operation;
- b) the adequacy of ground handling and maintenance arrangements at the departure and destination aerodromes intended to be used;
- c) the capability of the aircraft to operate in the proposed area(s), in particular:

- 1) the performance capability of the aircraft with regard to the terrain;
 - 2) the need for any special equipment or procedures (for example, fuel temperature monitoring and fuel freeze strategy);
 - 3) the performance and reliability of the aircraft systems, with regard to extremes of weather or climate (such as desert, polar, high elevation aerodrome operations);
 - 4) the need for any special dispatch requirements with regard to the content of the MEL; and
 - 5) the availability of the necessary communication, navigation and surveillance equipment;
- d) the communication, navigation and surveillance facilities available over the proposed routes;
- e) the availability of adequate aerodromes within the proposed area(s), and the availability of related navigation data (such as charts, navigation databases);
- f) the availability of adequate search and rescue facilities, and the need to carry special survival equipment;
- g) any special training required for:
- 1) coping with weather or climatic conditions likely to be encountered, including low atmospheric pressure at high elevation aerodromes and crew exposure to solar and cosmic radiations;
 - 2) complying with communication, navigation, surveillance specifications (PBCS, PBN) or with specific operational or airspace requirements (for example, augmented crew, NAT-HLA);
 - 3) complying with non-standard ATC requirements such as the use of non-standard phraseology, altitude reference (such as metres), meteorological information (such as altimeter setting in inches of mercury, wind in metres per second, visibility in miles or feet); and
 - 4) complying with relevant area, route and aerodrome qualification requirements in accordance with Annex 6, Part III, 7.4.2;
- h) the adequacy of relevant parts of the operations manual, in particular with regard to procedures and training programmes; and
- i) for changes to authorized area(s) of operation, the outcome of the operator's management of change process, detailing hazards, safety risk assessments and mitigations related to the changes.

Note.— Guidance on safety risk assessments is contained in the Safety Management Manual (Doc 9859).

2.6.2 In listing the authorized area(s) of operation in the operations specifications, the State of Operator should:

- a) specify whether the use of designated airspaces has been authorized (for example, "NAT, including NAT HLA" or "SAM, including HEA operations up to XX FT elevation"); and

- b) use “worldwide” only if the operator has demonstrated its capability to operate (in terms of equipment, procedures and training), in every area of the world; if some areas or operations are excluded these should be explicitly stated (for example worldwide, excluding polar regions).

End of new text.

3. AUTHORIZATIONS

...

3.4 Provisions that require a technical evaluation

Other provisions of Part III, Section II require the State to have made a technical evaluation. ~~These provisions contain the phrases “acceptable to the State”, “satisfactory to the State”, “determined by the State”, “deemed acceptable by the State”, and “prescribed by the State”.~~ While not necessarily requiring an approval by the State, these Standards do require the State to at least accept the matter at issue after it conducts a specific review or evaluation. These provisions are:

Origin: FLTOPSP/8	<i>Rationale</i> The additional guidance included in this attachment provides items for consideration for the State of the Operator to determine the scope of the authorization, including the need for additional training, procedures and equipment. The need to be specific in describing the extent, and limitations, of the authorization is emphasized, in particular the need to explicitly include designated airspace such as the NAT HLA, and clearly state any exclusions (such as polar operations) where appropriate to ensure the authorization is accurately reflected.
---------------------------------	--

INITIAL PROPOSAL 2

General aviation helicopter

ANNEX 6 — PART III

INTERNATIONAL OPERATIONS COMMERCIAL AIR TRANSPORT — HELICOPTERS

...

CONTENTS

...

Editorial Note.— Delete Section III and Appendix 5. *Renumber* subsequent appendices accordingly.

...

PUBLICATIONS

(referred to in this Annex)

ICAO Publications

...

Annex 6 — *Operation of Aircraft*

Part I — *International Commercial Air Transport — Aeroplanes*

Part II — *International General Aviation — Aeroplanes*

...

ANNEX 6 — PART III

INTERNATIONAL OPERATIONS COMMERCIAL AIR TRANSPORT — HELICOPTERS

FOREWORD

Historical background

...

Following a review by the Flight Operations Panel, it was determined that general aviation Standards and Recommended Practices should be consolidated in one Part of Annex 6. Part III, Section III was deleted and the contents transferred to Annex 6 Part II. Where possible, this was achieved by merging the two sets of requirements and making them applicable to aircraft rather than specifically aeroplane or helicopter. Annex 6, Part II, was renamed *International General Aviation*, while Part III was renamed *International Commercial Air Transport - Helicopters*

Table A shows the origin of subsequent amendments together with a list of the principal subjects involved and the dates on which the Annex and the amendments were adopted by the Council, when they became effective and when they became applicable.

Applicability

The Standards and Recommended Practices included in Annex 6 — *Operation of Aircraft*, Parts I, ~~and II~~ cover the operation of all commercial air transport aeroplanes in international civil aviation, except where specifically excluded. Similarly, ~~the~~ Standards and Recommended Practices in Annex 6, Part III cover the operation of all commercial air transport helicopters in international civil aviation, ~~general aviation as well as commercial air transport operations~~. International general aviation covering both aeroplanes and helicopters is covered in Annex 6, Part II — *International General Aviation*.

...

Origin:	<i>Rationale</i>
FLTOPSP/8	The historical background is updated to refer to the change in location of the helicopter GA SARPs. The applicability is also amended to clarify the new focus of Part III and to redirect the reader to Part II for GA SARPs.

ANNEX 6 — PART III

SECTION I

GENERAL

INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES

...

CHAPTER 2. APPLICABILITY

The Standards and Recommended Practices contained in Annex 6, Part III shall be applicable to all helicopters engaged in international commercial air transport operations ~~or in international general aviation operations~~, except that these Standards and Recommended Practices are not applicable to helicopters engaged in aerial work.

...

Note 2.— Standards and Recommended Practices applicable to international general aviation operations ~~with aeroplanes~~ are to be found in Annex 6, Part II.

Origin:	<i>Rationale</i>
FLTOPSP/8	Updated to reflect the new location following the move of helicopter GA SARPs to Annex 6, Part II.

...

Editorial Note.— Delete all of Annex 6, Part III, Section III (Chapters 1 through 7).

Origin:	<i>Rationale</i>
FLTOPSP/8	The entirety of Annex 6, Part III, Section III is deleted. All relevant SARPs are either covered by existing GA aeroplane SARPs (now edited to refer to aircraft) or, as appropriate, inserted into Annex 6, Part II as additional requirements.

ANNEX 6 — PART III

APPENDICES

...

APPENDIX 4. FLIGHT RECORDERS

(Section II, Chapter 4, 4.3 ~~and Section III, Chapter 4, 4.7, refers)~~

APPENDIX 5. GENERAL AVIATION SPECIFIC APPROVALS*(Section III, Chapter 1, 1.4, refers)**Editorial Note.— Delete Appendix 5 and renumber subsequent appendices accordingly.*

Origin:	<i>Rationale</i>
FLTOPSP/8	With the removal of Annex 6, Part III, Section III, there is no need to provide additional information on specific approvals for GA aircraft. This is now provided in Annex 6, Part II for aeroplanes and helicopters.

APPENDIX 65. ARTICLE 83 bis AGREEMENT SUMMARY*(Section II, Chapter 4, 4.1.5.4 and Section III, Chapter 4, 4.13.4, refers)*

Note.— Section II, Chapter 4, 4.1.5.1 and Section III, Chapter 4, 4.13.1, requires a certified true copy of the agreement summary to be carried on board.

1. Purpose and scope

Recommendation.— *The Article 83 bis agreement summary should contain the information in the template at paragraph 2 or 3 as applicable, in a standardized format.*

2. Article 83 bis agreement summary for commercial air transport

ARTICLE 83 bis AGREEMENT SUMMARY		
Title of the Agreement:		
State of Registry:		Focal point:
State of the principal location of a general aviation operator:		Focal point:
Date of signature:	By State of Registry ¹ :	
	By State of the Operator ¹ :	
Duration:	Start Date ¹ :	End Date (if applicable) ² :
Languages of the Agreement		
ICAO Registration No.:		
Umbrella Agreement (if any) with ICAO Registration number:		
Convention on International Civil Aviation	ICAO Annexes affected by the transfer of responsibility in respect of certain functions and duties to the State of the principal location of a general aviation operator	

Article 12: Rules of the Air	Annex 2, all chapters	Yes <input type="checkbox"/>	
		No <input type="checkbox"/>	
Article 30 a): Aircraft radio equipment	Radio Station Licence	Yes <input type="checkbox"/>	
		No <input type="checkbox"/>	
Articles 30 b) and 32 a): Licenses of personnel	Annex 1, Chapters 1, 2, 3 and 6; and Annex 6, Part I, Radio Operator; or Annex 6, Part II (qualifications and/or flight crew member licensing); or Annex 6, Part III, Section II (composition of the flight crew (radio operator); or Annex 6, Part III, Section III (qualifications)	Yes <input type="checkbox"/>	Annex 6: [Specify Part and paragraph] ³
		No <input type="checkbox"/>	
Article 31: Certificates of Airworthiness	Annex 6	Yes <input type="checkbox"/>	[Specify Part and chapters] ³
	Part I or Part III, Section II	No <input type="checkbox"/>	
	Annex 6	Yes <input type="checkbox"/>	[Specify Part and chapters] ³
	Part II or Part III, Section III	No <input type="checkbox"/>	
	Annex 8	Yes <input type="checkbox"/>	[Specify chapters] ³
	Part II, Chapters 3 and 4	No <input type="checkbox"/>	

Aircraft affected by the transfer of responsibilities to the State of the principal location of a general aviation operator					
Aircraft make, model, series	Nationality and registration marks	Serial No	AOC No. (Commercial air transport)	Dates of transfer of responsibilities	
				From ¹	To (if applicable) ²

3. — Article 83 bis agreement summary for general aviation

Editorial Note.— Delete table that follows and subsequent notes related thereto.

Origin:	<i>Rationale</i>
FLTOPSP/8	The 83 bis agreement template for commercial air transport requires minor editorial changes to reflect the removal of Annex 6, Part III, Section III, while the 83 bis agreement template for general aviation is removed.

...

ANNEX 6 — PART III

ATTACHMENTS

...

**ATTACHMENT F. GUIDE TO CURRENT
FLIGHT RECORDER PROVISIONS**

Supplementary to Section II, Chapter 4, 4.3 and Section III, Chapter 4, 4.7

1. INTRODUCTION

...

Table F-1. SARPs for the recording of flight parameters in Section II

...

Table F-2. ~~SARPs for the recording of flight parameters in Section III~~

Date	Maximum certificated take-off mass (MCTOM)	
	Seating configuration of more than 19 passengers or over 7 000 kg	Over 3 175 kg
	All helicopters first certificate of airworthiness	All helicopters first certificate of airworthiness
1989 ⇒	4.7.1.1.2	4.7.1.1.3
2016 ⇒	4.7.1.1.1	4.7.1.1.1

Table F-32. CVR/CARS installation SARPs in Section II and ~~Section III~~

Date	Maximum certificated take-off mass (MCTOM)	
	Over 7 000 kg	Over 3 175 kg
	All helicopters	All helicopters first certificate of airworthiness
1987 ⇒	4.3.2.1.1 or 4.7.2.1.1	4.3.2.1.2 or 4.7.2.1.2

Table F-43. Data link communications (DLC) recording installation clarification

...

2. TABLE HEADINGS

...

2.4 *DLC recording required* refers to the requirement to record DLC message in accordance with provisions 4.3.3.1.1, 4.3.3.1.2 and 4.3.3.1.3 in Section II and 4.7.3.1.1, 4.7.3.1.2 and 4.7.3.1.3 in Section III.

...

4. EXAMPLES

4.1 For rows 1 and 2:

- The recording requirement is driven by ~~Standards 4.3.3.1.1 and 4.7.3.1.1~~ which is based on when the individual certificate of airworthiness was first issued. Any subsequent airworthiness modifications related to DLC capability do not exempt the helicopter from the requirement to record DLC messages.

4.2 For rows 3 to 5 — General:

- The recording requirement is driven by ~~Standards 4.3.3.1.2 and 4.7.3.1.2~~ and is based on whether or not the helicopter has an airworthiness approval for DLC capabilities and the date of its issue.

...

4.5 For row 5:

...

- Notwithstanding the above, if the activation for use of the DLC equipment is on or after 1 January 2016, DLC messages should be recorded in accordance with ~~Recommendations 4.3.3.1.3 and 4.7.3.1.3~~.

Origin:	<i>Rationale</i>
FLTOPSP/8	References to SARPs for recording parameters in Annex 6, Part II, Section III have been removed as these are now contained in Annex 6, Part II.

INITIAL PROPOSAL 3

Other minor amendments

PUBLICATIONS
(referred to in this Annex)

ICAO Publications

...

Manuals¹

...

Guidance on the Preparation of an Operations Manual (Doc 10153)

...

Preparation of an Operations Manual (Doc 9376)

...

¹ The manuals referenced will be updated as necessary to harmonize the terminology with that used in the new Annex 19.

Origin:	<i>Rationale</i>
FLTOPSP/9	Doc 10153 was published in 2021 and replaced the previous guidance on the <i>Preparation of an Operations Manual</i> (Doc 9376), which became obsolete.

ANNEX 6 – PART III

SECTION I

GENERAL

INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES

CHAPTER 1. DEFINITIONS

...

Acts of unlawful interference. These are acts or attempted acts such as to jeopardize the safety of civil aviation, including but not limited to:

- unlawful seizure of aircraft,
- destruction of an aircraft in service,
- hostage-taking on board aircraft or on aerodromes,
- forcible intrusion on board an aircraft, at an airport or on the premises of an aeronautical facility,
- introduction on board an aircraft or at an airport of a weapon or hazardous device or material intended for criminal purposes,
- use of an aircraft in service for the purpose of causing death, serious bodily injury, or serious damage to property or the environment,
- communication of false information such as to jeopardize the safety of an aircraft in flight or on the ground, of passengers, crew, ground personnel or the general public, at an airport or on the premises of a civil aviation facility.

Origin:	<i>Rationale</i>
FLTOPSP/9	Annex 6 (all parts) refers to acts of unlawful interference, however its definition is only included in Part II, which is no longer consistent with Annex 17. The definition was added in alignment with the current Annex 17 definition.

...

Area navigation (RNAV). A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note.—Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.

Origin:	<i>Rationale</i>
FLTOPSP/8	During the development work for the Fifth Edition of the <i>Performance-based Navigation (PBN) Manual</i> (Doc 9613), it was clarified that all area navigation operations should now be included in the PBN concept. The definition was updated to reflect this.

...

Duty period. A period which starts when a flight- or cabin- crew member is required by an operator to report for or to commence a duty and ends when that person is free from all duties.

Origin:	<i>Rationale</i>
Secretariat	Dashes were removed after <i>flight</i> and <i>cabin</i> to conform with terminology.

...

Flight data analysis. A process of analysing recorded flight data in order to improve the safety of flight operations.

Origin:	<i>Rationale</i>
FLTOPSP/9	Flight data analysis is referred to in Annex 6, Part III but the definition is missing and is included here.

...

Performance-based navigation (PBN). Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

Note.— Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, ~~availability~~ and functionality needed for the proposed operation in the context of a particular airspace concept. Availability of a global navigation satellite system signal in space (GNSS SIS) or some other NAVAID infrastructure is considered within the airspace concept in order to enable the navigation application.

Origin:	<i>Rationale</i>
FLTOPSP/8	The definition of performance-based navigation no longer includes <i>availability</i> , but instead refers to it as being part of the GNSS SIS or other navigational aid infrastructure.

...

ANNEX 6 – PART III

SECTION II

INTERNATIONAL COMMERCIAL AIR TRANSPORT

CHAPTER 1. GENERAL

...

1.1.4 Responsibility for operational control shall be delegated only to the pilot-in-command and to a flight operations officer/flight dispatcher if the operator's approved method of control and supervision of flight operations requires the use of flight operations officer/flight dispatcher personnel.

Note.— Guidance on the operational control organization and the role of the flight operations officer/flight dispatcher is contained in the Manual of Procedures for Operations Inspection, Certification and Continued Surveillance (Doc 8335). Detailed guidance on the authorization, duties and responsibilities of the flight operations officer/flight dispatcher is contained in the ~~manual~~ Guidance on the Preparation of an Operations Manual (Doc ~~9376~~10153). The requirements for age, skill, knowledge and experience for licensed flight operations officers/flight dispatchers are contained in Annex 1.

Origin:	<i>Rationale</i>
FLTOPSP/9	Doc 10153 was published in 2021 and replaced the previous guidance on the <i>Preparation of an Operations Manual</i> (Doc 9376), which became obsolete.

...

CHAPTER 2. FLIGHT OPERATIONS

...

2.3 FLIGHT PREPARATION

...

2.3.5 Meteorological conditions

...

2.3.5.2 A flight to be conducted in accordance with IFR shall not be commenced unless information is available which indicates that conditions ~~at the destination heliport or landing location or, when an alternate is required, at least one alternate heliport or, when no alternate heliport is required, at the destination heliport or landing location,~~ will, at the estimated time of arrival, be at or above the heliport operating minima.

Origin:	<i>Rationale</i>
FLTOPSP/9	Editorial change to the paragraph for clarity.

...

**CHAPTER 3. HELICOPTER PERFORMANCE
OPERATING LIMITATIONS**

...

3.3 OBSTACLE DATA

The operator shall use available obstacle data to develop procedures to comply with the take-off, initial climb, approach and landing phases detailed in the code of performance established by the State of the Operator.

Note.— See Annex 4; Annex 15, Chapter 5 and Appendix 1; and the Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066), Chapter 5 for methods of presentation of certain obstacle data.

Origin: FLTOPSP/8	<i>Rationale</i> The equivalent section in Annex 6, Part I includes a note which refers to additional information on the methods of presentation for obstacle data, which is replicated here for consistency.
---------------------------------	--

...

**CHAPTER 4. HELICOPTER INSTRUMENTS, EQUIPMENT
AND FLIGHT DOCUMENTS**

...

4.7 EMERGENCY LOCATOR TRANSMITTER (ELT)

...

4.7.2 From 1 July 2008, all helicopters operating in performance Class 3 shall be equipped with at least one automatic ELT and, when operating on flights over water as described in 4.5.1 b), with at least one automatic ELT and one ELT(S) in a raft or life jacket.

Origin: FLTOPSP/9	<i>Rationale</i> Updated with the correct reference.
---------------------------------	---

...

CHAPTER 7. HELICOPTER FLIGHT CREW

...

7.3 FLIGHT CREW MEMBER TRAINING PROGRAMMES

...

Note 9.— Guidance material to design flight crew member training programmes and assessment methodologies using the Competency Based Training and Assessment (CBTA) framework on the different

means used to assess competence can be found in the Attachment to Chapter 2 of the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868).

Origin:	<i>Rationale</i>
FLTOPSP/9	Updated note better reflects the nature of the information in PANS-TRG, and provides the updated reference.

...

APPENDIX 4. FLIGHT RECORDERS

...

Table A4-1. Parameter Characteristics for Flight Data Recorders

Serial number	Parameter	Applicability	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
...						
38*	Selected barometric setting (pilot and co-pilot)		As installed	64 (4 recommended)	As installed	0.1 mb (0.0403 in-Hg)

...

Table A4-3. Parameter Characteristics for Aircraft Data Recording Systems

N°	Parameter name	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
...						
8	External static pressure (or pressure altitude)	34.4 hPa (1.02 in-Hg) to 310.2 hPa (9.16 in-Hg) or available sensor range	1	As installed (±1 hPa (0.03 in-Hg) or ±30 m (±100 ft) to ±210 m (±700 ft) recommended)	0.1 hPa (0.003 in-Hg) or 1.5 m (5 ft)	

...

Origin:	<i>Rationale</i>
FLTOPSP/9	Conversions from mb/hPa to in-Hg corrected

PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS
ANNEX 10
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION
AERONAUTICAL TELECOMMUNICATIONS
VOLUME I — RADIO NAVIGATION AIDS

**NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT**

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

1. ~~Text to be deleted is shown with a line through it.~~ text to be deleted
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PROPOSED AMENDMENT TO
ANNEX 10 — AERONAUTICAL TELECOMMUNICATIONS
VOLUME I — RADIO NAVIGATION AIDS

INITIAL PROPOSAL 1

Consequential change to the minor amendments to Annex 6

**INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

CHAPTER 1. DEFINITIONS

...

Area navigation (RNAV). A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note.—~~Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.~~

...

<i>Origin:</i>	<i>Rationale:</i>
FLTOPSP/8	During the development work for the Fifth Edition of the <i>Performance-based Navigation (PBN) Manual</i> (Doc 9613), it was clarified that all area navigation operations should now be included in the PBN concept. The definition was updated to reflect this.

...

Performance-based navigation (PBN). Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

Note.— *Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, ~~availability~~ and functionality needed for the proposed operation in the context of a particular airspace concept. Availability of a global navigation satellite system signal in space (GNSS SIS) or some other NAVAID infrastructure is considered within the airspace concept in order to enable the navigation application.*

Origin:	<i>Rationale</i>
FLTOPSP/8	The definition of performance-based navigation no longer includes <i>availability</i> , but instead refers to it as being part of the GNSS SIS or other navigational aid infrastructure.

ATTACHMENT I to State letter AN 11/6.1.10-23/57

PROPOSED AMENDMENT TO

INTERNATIONAL STANDARDS

ANNEX 11

TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

AIR TRAFFIC SERVICES

**NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT**

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PROPOSED AMENDMENT TO
ANNEX 11 — AIR TRAFFIC SERVICES

INITIAL PROPOSAL 1

Consequential change to the minor amendments to Annex 6

**INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

CHAPTER 1. DEFINITIONS

...

Area navigation (RNAV). A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note.— ~~Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.~~

Origin:	<i>Rationale</i>
FLTOPSP/8	During the development work for the Fifth Edition of the <i>Performance-based Navigation (PBN) Manual</i> (Doc 9613), it was clarified that all area navigation operations should now be included in the PBN concept. The definition was updated to reflect this.

...

Performance-based navigation (PBN). Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

Note.— *Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, ~~availability~~ and functionality needed for the proposed operation in the context of a particular airspace concept. Availability of a global navigation satellite system signal in space (GNSS SIS) or some other NAVAIID infrastructure is considered within the airspace concept in order to enable the navigation application.*

Origin:	<i>Rationale</i>
FLTOPSP/8	The definition of performance-based navigation no longer includes <i>availability</i> , but instead refers to it as being part of the GNSS SIS or other navigational aid infrastructure.

PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS
ANNEX 15
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION
AERONAUTICAL INFORMATION SERVICES

**NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT**

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PROPOSED AMENDMENT TO
ANNEX 15 — AERONAUTICAL INFORMATION SERVICES

INITIAL PROPOSAL 1

Consequential change to the minor amendments to Annex 6

**INTERNATIONAL STANDARDS AND
RECOMMENDED PRACTICES**

CHAPTER 1. GENERAL

...

1.1 Definitions

...

Area navigation (RNAV). A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note.— ~~Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.~~

Origin:	<i>Rationale</i>
FLTOPSP/8	During the development work for the Fifth Edition of the <i>Performance-based Navigation (PBN) Manual</i> (Doc 9613), it was clarified that all area navigation operations should now be included in the PBN concept. The definition was updated to reflect this.

...

Performance-based navigation (PBN). Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

Note.— *Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, ~~availability~~ and functionality needed for the proposed operation in the context of a particular airspace concept. Availability of a global navigation satellite system signal in space (GNSS SIS) or some other NAVAID infrastructure is considered within the airspace concept in order to enable the navigation application.*

Origin:	<i>Rationale</i>
FLTOPSP/8	The definition of performance-based navigation no longer includes <i>availability</i> , but instead refers to it as being part of the GNSS SIS or other navigational aid infrastructure.

PROPOSED AMENDMENT TO
DOC 4444
PROCEDURES FOR AIR NAVIGATION SERVICES — AIR TRAFFIC MANAGEMENT

**NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT**

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

1. ~~Text to be deleted is shown with a line through it.~~ text to be deleted
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PROPOSED AMENDMENT TO

PROCEDURES FOR AIR NAVIGATION SERVICES — AIR TRAFFIC MANAGEMENT
(PANS-ATM, Doc 4444)

INITIAL PROPOSAL 1

Consequential change to the minor amendments to Annex 6

Chapter 1

DEFINITIONS

...

Performance-based navigation (PBN). Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

Note.— Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, ~~availability~~ and functionality needed for the proposed operation in the context of a particular airspace concept. Availability of a global navigation satellite system signal in space (GNSS SIS) or some other NAVAID infrastructure is considered within the airspace concept in order to enable the navigation application.

...

Origin:	<i>Rationale</i>
FLTOPSP/8	The definition of performance-based navigation no longer includes <i>availability</i> , but instead refers to it as being part of the GNSS SIS or other navigational aid infrastructure.

PROPOSED AMENDMENT TO

DOC 8168

PROCEDURES FOR AIR NAVIGATION SERVICES — AIRCRAFT OPERATIONS
VOLUME III — AIRCRAFT OPERATING PROCEDURES

**NOTES ON THE EDITORIAL PRESENTATION OF THE PROPOSED
AMENDMENT**

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

1. ~~Text to be deleted is shown with a line through it.~~ text to be deleted
2. **New text to be inserted is highlighted with grey shading.** new text to be inserted
3. ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading. new text to replace existing text

PROPOSED AMENDMENT TO

**PROCEDURES FOR AIR NAVIGATION SERVICES — AIRCRAFT OPERATIONS
VOLUME III — AIRCRAFT OPERATING PROCEDURES
(PANS-OPS, Doc 8168)**

INITIAL PROPOSAL

Section 1

**DEFINITIONS, ABBREVIATIONS AND
ACRONYMS AND UNITS OF MEASUREMENT**

...

Chapter 2

ABBREVIATIONS AND ACRONYMS

...

ROAAS Runway overrun awareness and alerting system

...

Insert new text as follows:

Section 12

RUNWAY SAFETY
(Annex 6, Part I, 6.26 and Part II, 3.6.11 refer)

Chapter 1

**OPERATION OF RUNWAY OVERRUN AWARENESS AND
ALERTING SYSTEM (ROAAS) EQUIPMENT**

1.1 ROAAS OVERVIEW

1.1.1 The runway overrun awareness and alerting system (ROAAS) is intended to provide increased situational awareness for flight crews during approach and landing about possibly exceeding the runway end on landing. Alerts are generated based on runway database information combined with aircraft state and performance data.

1.1.2 Where fitted, the ROAAS shall be used to reduce the risk of longitudinal runway excursion.

1.2 OPERATOR REQUIREMENTS

1.2.1 The operator shall ensure they have established and documented:

- a) a training programme for flight crew on the use of the ROAAS, including appropriate action to take in the event of receiving an alert; and
- b) procedures for flight crew use.

1.2.2 Operators shall inform flight crews of the scheduled destination and alternate runways for which ROAAS is unavailable. This information shall be clearly stated in the operations manual, Part C (Areas, Routes and Aerodromes) or other relevant documentation.

1.3 USE OF RUNWAY OVERRUN AWARENESS AND ALERTING SYSTEMS

1.3.1 Where an alert is generated by the ROAAS, the pilot shall respond according to the established operator procedures.

1.3.2 Where spurious alerts are reported, the ROAAS may be inhibited by the flight crew according to established operator procedure.

Origin:	<i>Rationale</i>
FLTOPSP/8	<p>Operator requirements in PANS-OPS, Volume III are focussed on ensuring that an operator with aeroplanes affected by the ROAAS Standards in Annex 6, Parts I and II have established suitable training plans and procedures to ensure the benefit from carriage of the equipment is realized.</p> <p>Specific requirements are included to ensure that the system, where carried, must be used and the pilots respond to warnings and alerts, following operator established procedures, when these are generated.</p>

PROPOSED AMENDMENT TO
DOC 10066
PROCEDURES FOR AIR NAVIGATION SERVICES —
AERONAUTICAL INFORMATION MANAGEMENT

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PROPOSED AMENDMENT TO

***PROCEDURES FOR AIR NAVIGATION SERVICES — AERONAUTICAL INFORMATION
MANAGEMENT***

(PANS-AIM, Doc 10066)

INITIAL PROPOSAL 1

Consequential change to the minor amendments to Annex 6

Chapter 1

DEFINITIONS

...

Area navigation (RNAV). A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note.—Area navigation includes performance based navigation as well as other operations that do not meet the definition of performance based navigation.

...

Origin:	<i>Rationale</i>
FLTOPSP/8	During the development work for the Fifth Edition of the <i>Performance-based Navigation (PBN) Manual</i> (Doc 9613), it was clarified that all area navigation operations should now be included in the PBN concept. The definition was updated to reflect this.

ATTACHMENT N to State letter AN 11/6.1.10-23/57

**RESPONSE FORM TO BE COMPLETED AND RETURNED TO ICAO TOGETHER
WITH ANY COMMENTS YOU MAY HAVE ON THE PROPOSED AMENDMENTS**

To: The Secretary General
International Civil Aviation Organization
999 Robert-Bourassa Boulevard
Montréal, Quebec
Canada, H3C 5H7

(State) _____

Please make a checkmark (✓) against one option for each amendment. If you choose options “agreement with comments” or “disagreement with comments”, **please provide your comments on separate sheets.**

	<i>Agreement without comments</i>	<i>Agreement with comments*</i>	<i>Disagreement without comments</i>	<i>Disagreement with comments</i>	<i>No position</i>
Amendment to Annex 2 (Attachment B refers)					
Amendment to Annex 3 (Attachment C refers)					
Amendment to Annex 4 (Attachment D refers)					
Amendment to Annex 6, Part I (Attachment E refers)					
Amendment to Annex 6, Part II (Attachment F refers)					
Amendment to Annex 6, Part III (Attachment G refers)					
Amendment to Annex 10, Volume I (Attachment H refers)					
Amendment to Annex 11 (Attachment I refers)					
Amendment to Annex 15 (Attachment J refers)					
Amendment to PANS-ATM (Doc 4444) (Attachment K refers)					
Amendment to PANS-OPS, Volume III (Doc 8168) (Attachment L refers)					
Amendment to PANS-AIM (Doc 10066) (Attachment M refers)					

*“Agreement with comments” indicates that your State or organization agrees with the intent and overall thrust of the amendment proposal; the comments themselves may include, as necessary, your reservations concerning certain parts of the proposal and/or offer an alternative proposal in this regard.

Signature: _____ Date: _____

— END —