



ICAO

International Standards
and Recommended Practices

Annex 6 to the Convention on International Civil Aviation

Operation of Aircraft

Part II — International General Aviation — Aeroplanes
Tenth Edition, July 2018



This edition supersedes, on 8 November 2018, all previous editions of Part II of Annex 6.

For information regarding the applicability of the Standards and Recommended Practices, see Foreword.

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AMENDMENTS

Amendments are announced in the supplements to the *Products and Services Catalogue*; the Catalogue and its supplements are available on the ICAO website at www.icao.int. The space below is provided to keep a record of such amendments.

RECORD OF AMENDMENTS AND CORRIGENDA

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ABBREVIATIONS AND SYMBOLS

(used in this Annex)

Abbreviations

AC	Alternating current
ACAS	Airborne collision avoidance system
ADREP	Accident/incident reporting
ADRS	Aircraft data recording system
ADS	Automatic dependent surveillance
AFCS	Automatic flight control system
AIR	Airborne image recorder
AIRS	Airborne image recording system
AOC	Air operator certificate
APCH	Approach
APU	Auxiliary power unit
AR	Authorization required
ARINC	Aeronautical Radio, Incorporated
ASE	Altimetry system error
ATC	Air traffic control
ATM	Air traffic management
ATN	Aeronautical telecommunication network
ATS	Air traffic services
CARS	Cockpit audio recording system
CAT I	Category I
CAT II	Category II
CAT III	Category III
CAT IIIA	Category IIIA
CAT IIIB	Category IIIB
CAT IIIC	Category IIIC
CFIT	Controlled flight into terrain
CG	Centre of gravity
cm	Centimetre
CPDLC	Controller-pilot data link communications
CVR	Cockpit voice recorder
CVS	Combined vision system
DA	Decision altitude
DA/H	Decision altitude/height
DC	Direct current
D-FIS	Data link-flight information services
DH	Decision height
DLR	Data link recorder
DLRS	Data link recording system
DME	Distance measuring equipment
DSTRK	Desired track

EFB	Electronic flight bag
EFIS	Electronic flight instrument system
EGT	Exhaust gas temperature
EICAS	Engine indication and crew alerting system
ELT	Emergency locator transmitter
ELT(AD)	Automatic deployable ELT
ELT(AF)	Automatic fixed ELT
ELT(AP)	Automatic portable ELT
ELT(S)	Survival ELT
EPR	Engine pressure ratio
EUROCAE	European Organisation for Civil Aviation Equipment
EVS	Enhanced vision system
FANS	Future air navigation system
FDR	Flight data recorder
FL	Flight level
FM	Frequency modulation
ft	Foot
ft/min	Feet per minute
g	Normal acceleration
GBAS	Ground-based augmentation system
GCAS	Ground collision avoidance system
GLS	GBAS landing system
GNSS	Global navigation satellite system
GPS	Global positioning system
GPWS	Ground proximity warning system
hPa	Hectopascal
HUD	Head-up display
IAOPA	International Council of Aircraft Owner and Pilot Associations
IBAC	International Business Aviation Council
IFR	Instrument flight rules
ILS	Instrument landing system
IMC	Instrument meteorological conditions
inHg	Inch of mercury
INS	Inertial navigation system
ISA	International standard atmosphere
kg	Kilogram
km	Kilometre
km/h	Kilometres per hour
kt	Knot
lbf	Pound-force
LED	Light emitting diode
m	Metre
mb	Millibar
m/s	Metres per second
MDA	Minimum descent altitude

MDA/H	Minimum descent altitude/height
MDH	Minimum descent height
MEL	Minimum equipment list
MHz	Megahertz
MLS	Microwave landing system
MMEL	Master minimum equipment list
MNPS	Minimum navigation performance specification
MOPS	Minimum operational performance specification
NAV	Navigation
NM	Nautical mile
NVIS	Night vision imaging systems
N ₁	Low pressure compressor speed (two-stage compressor); fan speed (three-stage compressor)
N ₂	High pressure compressor speed (two-stage compressor); intermediate pressure compressor (three-stage compressor)
N ₃	High pressure compressor speed (three-stage compressor)
OCA	Obstacle clearance altitude
OCA/H	Obstacle clearance altitude/height
OCH	Obstacle clearance height
PANS	Procedures for Air Navigation Services
PBC	Performance-based communication
PBN	Performance-based navigation
PBS	Performance-based surveillance
RCP	Required communication performance
RNAV	Area navigation
RNP	Required navigation performance
RNPSOR	Required navigation performance and special operational requirements
RSP	Required surveillance performance
RTCA	Radio Technical Commission for Aeronautics
RVR	Runway visual range
RVSM	Reduced vertical separation minima
SBAS	Satellite-based augmentation system
SI	International System of Units
SOP	Standard operating procedure
SVS	Synthetic vision system
TAWS	Terrain awareness system
TCAS	Traffic alert and collision avoidance system
TLA	Thrust lever angle
TLS	Target level of safety
TVE	Total vertical error
UTC	Coordinated universal time
V _D	Design diving speed
V _{SO}	Stalling speed or the minimum steady flight speed in the landing configuration
VFR	Visual flight rules
VMC	Visual meteorological conditions

VOR	VHF omnidirectional radio range
VSM	Vertical separation minima
WXR	Weather radar

Symbols

°C	Degrees Celsius
%	Per cent

PUBLICATIONS

(referred to in this Annex)

ICAO Publications

Conventions and Related Acts

Convention on International Civil Aviation (Doc 7300)

Protocol Relating to an Amendment to the Convention on International Civil Aviation (Article 83 bis) (Doc 9318)

Annexes to the Convention on International Civil Aviation

Annex 1 — Personnel Licensing

Annex 2 — Rules of the Air

Annex 3 — Meteorological Service for International Air Navigation

Annex 5 — Units of Measurement to be Used in Air and Ground Operations

Annex 6 — Operation of Aircraft

Part I — International Commercial Air Transport — Aeroplanes

Part III — International Operations — Helicopters

Annex 8 — Airworthiness of Aircraft

Annex 10 — Aeronautical Telecommunications

Volume III — Communication Systems (Part I — Digital Data Communication Systems; Part II — Voice Communication Systems)

Volume IV — Surveillance and Collision Avoidance Systems

Annex 11 — Air Traffic Services

Annex 12 — Search and Rescue

Annex 13 — Aircraft Accident and Incident Investigation

Annex 14 — Aerodromes

Volume I — Aerodrome Design and Operations

Annex 15 — Aeronautical Information Services

Annex 16 — Environmental Protection

Volume I — Aircraft Noise

Annex 18 — *The Safe Transport of Dangerous Goods by Air*

Annex 19 — *Safety Management*

Procedures for Air Navigation Services

ATM — Air Traffic Management (Doc 4444)

OPS — Aircraft Operations (Doc 8168)

Volume I — *Flight Procedures*

Volume II — *Construction of Visual and Instrument Flight Procedures*

Regional Supplementary Procedures (Doc 7030)

Manuals

Airport Services Manual (Doc 9137)

Part 1 — *Rescue and Fire Fighting*

Part 8 — *Airport Operational Services*

Airworthiness Manual (Doc 9760)

Fatigue Management Manual for General Aviation (Doc 10033)

Flight Planning and Fuel Management (FPFM) Manual (Doc 9976)

Human Factors Training Manual (Doc 9683)

Manual of Aircraft Ground De-icing/Anti-icing Operations (Doc 9640)

Manual of All-Weather Operations (Doc 9365)

Manual of Civil Aviation Medicine (Doc 8984)

Manual on Electronic Flight Bags (EFBs) (Doc 10020)

Manual on a 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive (Doc 9574)

Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869) (previously titled the *Manual on Required Communication Performance (RCP)*)

Performance-based Navigation (PBN) Manual (Doc 9613)

Policy and Guidance Material on the Economic Regulation of International Air Transport (Doc 9587)

Safety Management Manual (SMM) (Doc 9859)

Other publications

Aeronautical Radio, Incorporated (ARINC), ARINC-647A

European Organisation for Civil Aviation Equipment (EUROCAE) Documents ED-55, ED-56A, ED-76, ED-77, E-112, E-112A, ED-155

International Maritime Organization (IMO), *International Regulations for Preventing Collisions at Sea*
Radio Technical Commission for Aeronautics (RTCA), DO-200A and DO-201A

United States Federal Aviation Administration, FAA Report No. DOT/FAA/AR-99-63

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ANNEX 6 — PART II

INTERNATIONAL GENERAL AVIATION — AEROPLANES

FOREWORD

Historical background

Standards and Recommended Practices for the Operation of Aircraft — International General Aviation were first adopted by the Council on 2 December 1968 pursuant to the provisions of Article 37 of the Convention on International Civil Aviation (Chicago, 1944) and designated as Annex 6, Part II, to the Convention. They became effective on 2 April 1969 and applicable on 18 September 1969.

Annex 6, Part II, was developed in the following manner: the Fifteenth Session of the Assembly, Montréal, June–July 1965, adopted Resolution A15-15: “Consideration of the needs of international general aviation in relation to the scope of ICAO technical activities”. Subsequently, the Fourth Air Navigation Conference (Montréal, November–December 1965) recommended a series of factors which it considered should be taken into account in extending the scope of Annex 6 to meet the needs of general aviation in accordance with the directives of Assembly Resolution A15-15.

The Fourth Air Navigation Conference recommended that the International Standards and Recommended Practices to be developed for International General Aviation Operations exclude, for the present, aerial work operations. It was however clearly the view of the conference that the Annex should be framed in such a manner as to facilitate its extension to cover aerial work operations at a later date, should such extension prove desirable.

Based on the above considerations, draft International Standards and Recommended Practices for the Operation of International General Aviation Aircraft were developed by the Air Navigation Commission and, after amendment following the usual consultation with the Member States of the Organization, were adopted by the Council so as to become, together with the Foreword approved by the Council, the text of this Annex. In developing this material in 1965 the Air Navigation Commission was guided by the following philosophies:

Presentation and conformity with Annex 6, Part I. The Annex should be, as nearly as practicable, equivalent in scope and conform as closely as possible to Annex 6 (now Annex 6, Part I).

Applicability. Although the definition of general aviation originally used in this Annex encompassed aerial work operations, these were specifically excluded from the provisions of this Annex by Chapter 1.2 — Applicability.

Level of safety. The Annex should ensure an acceptable level of safety to passengers and third parties (third parties meaning persons on the ground and persons in the air in other aircraft). Also, as some international general aviation operations (typically under 5 700 kg) would be performed by crews less experienced and less skilled, with less reliable equipment, to less rigorous standards and with greater freedom of action than in commercial air transport operations, it was therefore accepted that the passenger in international general aviation aircraft would not necessarily enjoy the same level of safety as the fare-paying passenger in commercial air transport. However, it was recognized that in ensuring an acceptable degree of safety for third parties, an acceptable level of safety for flight crews and passengers would be achieved.

Freedom of action. The maximum freedom of action consistent with maintaining an acceptable level of safety should be granted to international general aviation.

Responsibility. The responsibility that devolves upon the operator in Annex 6, Part I, should, in Part II of the Annex, fall upon the owner and pilot-in-command. Precedent for this course of action exists in Annex 2.

Consequent to the adoption of Annex 6, Part III, *International Operations — Helicopters*, an amendment to the title was introduced to indicate that Annex 6, Part II was applicable only to aeroplanes.

In 1986 the Air Navigation Commission commenced a review of Annex 6, Part II, and concluded that the definition of general aviation should be revised to exclude aerial work thus recognizing that aerial work was a distinct aspect of civil aviation and recognizing the exclusion of aerial work from the applicability of Annex 6, Part II. As with the Fourth Air Navigation Conference in 1965, the Air Navigation Commission was not aware of any degree of international aerial work operations which would necessitate the development of International Standards and Recommended Practices. The revised definitions for general aviation and aerial work and the revised applicability chapter were submitted to States in the usual manner and approved by the Council in March 1990.

In 2005 and 2006, the Air Navigation Commission completed a thorough review of Annex 6, Part II, with the intent of modernizing the provisions to reflect the significant changes in general aviation since the Annex was initially developed. The Commission considered new general aviation dynamics reflected by the increasing use of large, technically advanced turbine-engined aeroplanes in international general aviation operations. The Commission endorsed the philosophy established during initial development of the Annex that the owner and pilot-in-command must assume responsibility for the safety of operations in non-commercial operations where travel is not open to the general public. In such operations the Standards and Recommended Practices need not be as prescriptive as those in Annex 6, Part I, due to the inherent self-responsibility of the owner and pilot-in-command. The State does not have an equivalent “duty of care” to protect the occupants as it does for fare-paying customers in commercial operations. The Commission endorsed the level-of-safety philosophy that the Standards and Recommended Practices of Annex 6, Part II, must protect the interests of third parties. It was therefore agreed that the basic provisions of Annex 6, Part II, should remain applicable to all general aviation operations, but updated to reflect current technologies and operational procedures and the use of safety management systems where appropriate.

The Commission also considered that additional provisions should be added for the larger, more complex operations, and all general aviation operations using turbojet aeroplanes. In this regard the Commission decided to add an additional section applicable to this sector of general aviation.

In large and turbojet operations, it was concluded that their complexity warrants provisions governing the operator, whereas in the initial development of Annex 6, Part II, the provisions applied to the owner and pilot-in-command. A review of the safety record of this general aviation sector showed that the principles of individual operator responsibility and industry codes of practice have been effective given that the safety record is excellent and essentially equivalent to large, scheduled air transport governed by Annex 6, Part I.

The Commission also expressed the need for a more modern approach to rulemaking through application of “performance-based” Standards. Such an approach was being considered for other Annexes, including Annex 6, Part III. Performance-based Standards are facilitated through use of industry “codes of practice”, and the Commission endorsed reference to acceptable codes in the development of an updated Annex 6, Part II.

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.

The Standards and Recommended Practices represent minimum provisions and, together with those of Annex 6 — *Operation of Aircraft*, Part I — *International Commercial Air Transport — Aeroplanes*, now cover the operation of all aeroplanes in international civil aviation, except in aerial work operations.

It will be noted that the Standards and Recommended Practices contained in Annex 6, Part II, when applied to the operation of large aeroplanes, are less stringent than those in Annex 6, Part I, applicable to the same or similar aeroplanes when used in commercial air transport operations. Nevertheless, it is considered that, in conjunction with existing provisions in Annexes 1 and 8, Annex 6, Part II, ensures an adequate level of safety for the operations envisaged for the large aeroplanes in question. In this connection attention is drawn to the point that the entire performance Standards of Annex 8 are applicable to all aeroplanes of over 5 700 kg mass intended for the carriage of passengers or cargo or mail for international air navigation, of which the prototype was submitted for certification on or after 13 December 1964. Moreover, by virtue of Annex 1 the pilot of an aircraft certificated for operation with a minimum crew of at least two pilots must hold a type rating for that aircraft type.

Action by Contracting States

Notification of differences. The attention of Contracting States is drawn to the obligation imposed by Article 38 of the Convention by which Contracting States are required to notify the Organization of any differences between their national regulations and practices and the International Standards contained in this Annex and any amendments thereto. Contracting States are invited to extend such notification to any differences from the Recommended Practices contained in this Annex, and any amendments thereto, when the notification of such differences is important for the safety of air navigation. Further, Contracting States are invited to keep the Organization currently informed of any differences which may subsequently occur, or of the withdrawal of any differences previously notified. A specific request for notification of differences will be sent to Contracting States immediately after the adoption of each amendment to this Annex.

The attention of States is also drawn to the provision of Annex 15 related to the publication of differences between their national regulations and practices and the related ICAO Standards and Recommended Practices through the Aeronautical Information Service, in addition to the obligation of States under Article 38 of the Convention.

Promulgation of information. The establishment and withdrawal of and changes to facilities, services and procedures affecting aircraft operations provided in accordance with the Standards and Recommended Practices specified in this Annex should be notified and take effect in accordance with the provisions of Annex 15.

Status of Annex components

An Annex is made up of the following component parts, not all of which, however, are necessarily found in every Annex; they have the status indicated:

1.— *Material comprising the Annex proper:*

- a) *Standards and Recommended Practices* adopted by the Council under the provisions of the Convention. They are defined as follows:

Standard: Any specification for physical characteristics, configuration, matériel, performance, personnel or procedure, the uniform application of which is recognized as necessary for the safety or regularity of international air navigation and to which Contracting States will conform in accordance with the Convention; in the event of impossibility of compliance, notification to the Council is compulsory under Article 38.

Recommended Practice: Any specification for physical characteristics, configuration, matériel, performance, personnel or procedure, the uniform application of which is recognized as desirable in the interest of safety, regularity or efficiency of international air navigation, and to which Contracting States will endeavour to conform in accordance with the Convention.

- b) Appendices comprising material grouped separately for convenience but forming part of the Standards and Recommended Practices adopted by the Council.
- c) Definitions of terms used in the Standards and Recommended Practices which are not self-explanatory in that they do not have accepted dictionary meanings. A definition does not have independent status but is an essential part of each Standard and Recommended Practice in which the term is used, since a change in the meaning of the term would affect the specification.
- d) Tables and Figures which add to or illustrate a Standard or Recommended Practice and which are referred to therein, form part of the associated Standard or Recommended Practice and have the same status.

It is to be noted that some Standards in this Annex incorporate, by reference, other specifications having the status of Recommended Practices. In such cases, the text of the Recommended Practice becomes part of the Standard.

2.— *Material approved by the Council for publication in association with the Standards and Recommended Practices:*

- a) *Forewords* comprising historical and explanatory material based on the action of the Council and including an explanation of the obligations of States with regard to the application of the Standards and Recommended Practices ensuing from the Convention and the Resolution of Adoption;
- b) *Introductions* comprising explanatory material introduced at the beginning of parts, chapters or sections of the Annex to assist in the understanding of the application of the text;
- c) *Notes* included in the text, where appropriate, to give factual information or references bearing on the Standards or Recommended Practices in question, but not constituting part of the Standards or Recommended Practices;
- d) *Attachments* comprising material supplementary to the Standards and Recommended Practices, or included as a guide to their application.

Selection of language

This Annex has been adopted in six languages — English, Arabic, Chinese, French, Russian and Spanish. Each Contracting State is requested to select one of those texts for the purpose of national implementation and for other effects provided for in the Convention, either through direct use or through translation into its own national language, and to notify the Organization accordingly.

Editorial practices

The following practice has been adhered to in order to indicate at a glance the status of each statement: *Standards* have been printed in light face roman; *Recommended Practices* have been printed in light face italics, the status being indicated by the prefix **Recommendation**; *Notes* have been printed in light face italics, the status being indicated by the prefix *Note*.

The following editorial practice has been followed in the writing of specifications: for Standards the operative verb “shall” is used, and for Recommended Practices the operative verb “should” is used.

The units of measurement used in this document are in accordance with the International System of Units (SI) as specified in Annex 5 to the Convention on International Civil Aviation. Where Annex 5 permits the use of non-SI alternative units these are shown in parentheses following the basic units. Where two sets of units are quoted it must not be assumed that the pairs of values are equal and interchangeable. It may, however, be inferred that an equivalent level of safety is achieved when either set of units is used exclusively.

Any reference to a portion of this document, which is identified by a number and/or title, includes all subdivisions of that portion.

Throughout this Annex, the use of the male gender should be understood to include male and female persons.

In order to maintain a comprehensive edition of this Annex, the latest amendments have been consolidated in a new edition of the Annex. In so doing, provisions with particular applicability dates have been adjusted editorially, as appropriate.

Table A. Amendments to Annex 6, Part II

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject(s)</i>	<i>Adopted Effective Applicable</i>
1st Edition	Fifteenth Session of the Assembly (Resolution A15-15) and Fourth Air Navigation Conference		2 December 1968 2 April 1969 18 September 1969
1	Sixth Air Navigation Conference	a) The requirement for additional instruments in aeroplanes operated as controlled VFR flights in the en-route phase; and b) the permitting of aeroplanes, when unable to navigate by visual references to landmarks, to be navigated by equipment other than radio navigation equipment, e.g. solely by self-contained navigation means, provided that certain equipment capabilities are met, thus eliminating any requirement for the carriage of radio navigation equipment.	1 June 1970 1 October 1970 4 February 1971
2 (2nd Edition)	Special Meeting on Aircraft Noise in the Vicinity of Aerodromes	The inclusion of a specification for aeroplanes to be operated within the weight limitations imposed by the applicable noise certification Standards, except in prescribed circumstances, and to carry a document attesting noise certification.	2 April 1971 2 August 1971 6 January 1972
3	Seventh Air Navigation Conference	The inclusion of a Recommended Practice covering the design, carriage and installation of emergency location beacons — aircraft, in such aeroplanes and on such flights as may be determined by the appropriate authority.	29 May 1973 1 October 1973 23 May 1974
4	Revision of Annex 12, the Air Navigation Commission's study concerning interception of civil aircraft and the Council action in pursuance of Assembly Resolution A18-16	a) Provisions for the marking of break-in points on aircraft; b) provisions for reducing the risk for intercepted aircraft; c) the revision of the Introductory Note to Chapter 3 of the Annex. The revision points to a practical method for States to discharge their functions in the cases of lease, charter and interchange of aircraft in international operations.	4 February 1975 4 June 1975 9 October 1975

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject(s)</i>	<i>Adopted Effective Applicable</i>
5	Studies by the Air Navigation Commission, Amendment 60 to Annex 3 and Amendment 30 to Annex 14	Requirements for the provision and use of flight crew safety harnesses; amplification of specifications for the type of timepiece required for operations in accordance with the instrument flight rules and controlled VFR flights; and revision of the definitions of Aerodrome and Meteorological information.	7 April 1976 7 August 1976 30 December 1976
6	Asia/Pacific (ASIA/PAC) Regional Air Navigation Meeting	The requirement for the carriage of survival radio equipment over those areas in which search and rescue would be especially difficult to be determined by States rather than Regional Air Navigation Agreement.	16 June 1976 16 October 1976 6 October 1977
7	Air Navigation Commission study	Recommendation for the fitting of ground proximity warning systems to certain aeroplanes.	15 December 1977 15 April 1978 10 August 1978
8	Air Navigation Commission study	Introduction of requirements for navigation equipment to meet minimum navigation performance specifications (MNPS).	2 April 1980 2 August 1980 27 November 1980
9	Air Navigation Commission study	Revision of the provisions relating to exterior lights to align with new provisions in Annexes 2 and 8.	22 March 1982 22 July 1982 25 November 1982
10 (3rd Edition)	Seventh meeting of the Obstacle Clearance Panel, Aerodromes, Air Routes and Ground Aids (AGA) Divisional Meeting (1981), amendments consequential to adoption of Annexes 5 and 18	Introduced provisions related to development and use of instrument approach procedures, authority and competence to taxi aeroplanes. Changes to the requirements for the carriage of dangerous goods as a result of adoption by the Council of Annex 18. Units of measurement were brought in line with the provisions of Annex 5 and the <i>Note</i> in Chapter 3 concerning lease, charter and interchange was updated. The term “aerodrome operating minima” was introduced in lieu of “aerodrome meteorological minima”, and definitions of “decision altitude/height” and “minimum descent altitude/height” were entered in Chapter 1.	20 May 1983 20 September 1983 24 November 1983
11	Accident Prevention and Investigation Divisional Meeting, AIG (1979)	Introduction of provisions relating to flight recorders. Introduction of related guidance material in an attachment.	8 March 1985 29 July 1985 21 November 1985
12	Air Navigation Commission	Carriage of information on board aircraft; communication equipment on 121.5 MHz.	14 March 1986 27 July 1986 20 November 1986
13	Seventh meeting of the Obstacle Clearance Panel, Air Navigation Commission studies	Supply and use of oxygen and pressurization failure warning; refuelling with passengers on board; provision of climb performance data with all engines operating.	14 March 1986 27 July 1986 20 November 1986

Amendment	Source(s)	Subject(s)	Adopted Effective Applicable
14 (4th Edition)	Air Navigation Commission review of the Annex, Stage I, Third meeting of the Visual Flight Rules Operations Panel, Air Navigation Commission study	a) Revision of the definitions of aerial work and general aviation. Revision of the definition of alternate aerodrome to introduce take-off, en-route and destination alternate aerodromes. Introduction of a new definition for a commercial air transport operation and the definitions for flight plan and flight recorder; b) deletion of the reference to aerial work from the applicability; c) alignment with Annex 6, Part I, particularly with respect to flight recorder records subsequent to accidents or incidents and the requirement for a Mach number indicator; d) elimination of the term “controlled VFR flight”; e) introduction of guidance material concerning flight data recording of important operational information in aeroplanes with electronic displays.	19 March 1990 30 July 1990 15 November 1990
15	Fifth meeting of the Operations Panel, Seventh and Eighth meetings of the Review of the General Concept of Separation Panel, Accident Investigation Divisional Meeting (AIG/1992), Air Navigation Commission studies	a) Revision of definitions of aerodrome operating minima, decision altitude/height, minimum descent altitude/height and introduction of definition of obstacle clearance altitude/height; b) introduction of new definitions for emergency locator transmitters (ELTs), required navigation performance (RNP) and RNP type; c) introduction of the definition for the classification of instrument approach and landing operations; d) revision of the requirements concerning the use of engraving metal foil flight data recorders; e) introduction of carriage requirements for emergency locator transmitters (ELTs) to replace provisions regarding survival radio equipment and emergency location beacon; f) introduction of a requirement that the navigation equipment carried shall enable the aircraft to proceed in accordance with RNP types prescribed for the intended route(s) or area(s) and provisions to permit the uniform implementation of 300 m (1 000 ft) VSM above FL 290.	21 March 1994 25 July 1994 10 November 1994
16 (5th Edition)	Air Navigation Commission studies, Fourteenth meeting of the Dangerous Goods Panel, editorial amendment, text alignment with Annex 6, Part I and/or Part III, consequential amendment	a) Introduction of revised definitions; b) inclusion of references to Article 35 of the Convention; c) revision of the provisions concerning operating facilities, briefing, aeroplane airworthiness and safety precautions, destination alternate aerodromes, limitations imposed by weather conditions, use of oxygen and safety harness; d) new provisions concerning all aeroplanes on all flights, all aeroplanes operated as VFR flights and ground proximity warning systems (GPWS); e) revision of the provisions concerning aeroplanes operated in accordance with the instrument flight rules (IFR); f) revision of the provisions concerning the composition of the flight crew; and g) revision of the provisions concerning the carriage and use of oxygen.	10 March 1995 24 July 1995 9 November 1995

Amendment	Source(s)	Subject(s)	Adopted Effective Applicable
17	Fourth meeting of the Secondary Surveillance Radar Improvements and Collision Avoidance Systems Panel (SICASP/4)	Requirement for aeroplanes to be equipped with pressure-altitude reporting transponders.	19 February 1996 15 July 1996 7 November 1996
18 (6th Edition)	First meeting of the Flight Recorder Panel, ICAO and Industry CFIT Task Force, Air Navigation Commission studies, Amendment 162 to Annex 1, Amendment 38 to Annex 11, editorial amendment	a) Introduction of new and revised definitions for psychoactive substances and required navigation performance; b) revision of the notes concerning lease and interchange; c) introduction of a note concerning use of psychoactive substances; and d) new and revised provisions concerning ground proximity warning systems, pressure-altitude reporting transponders and flight recorders.	20 March 1998 20 July 1998 5 November 1998
19	Second meeting of the Flight Recorder Panel, Air Navigation Commission studies	a) Revised definitions; and b) new provisions concerning the mandatory carriage of ELTs operating on 406 MHz and 121.5 MHz, the addition of a predictive terrain hazard warning function to the ground proximity warning system (GPWS), pressure-altitude reporting transponders and the introduction of an implementation date for the recording of digital communications.	15 March 1999 19 July 1999 4 November 1999
20	Air Navigation Commission studies	a) Revised definitions; and b) revision of the duties of the pilot-in-command and the introduction of criteria for instrument approach operations.	15 March 2000 17 July 2000 2 November 2000
21	Second meeting of the Flight Recorder Panel, Third meeting of the Global Navigation Satellite System Panel, Fifth meeting of the Continuing Airworthiness Panel	a) Update of the provisions pertaining to flight recorders, including the recording of digital communications; FDR requirements for new aircraft; revised parameter listings; introduction of two-hour duration CVRs; b) amendment of the classification of instrument approach and landing operations; c) new provisions pertaining to approach with vertical guidance (APV) operations; and d) new definitions and update of provisions pertaining to maintenance-related requirements.	9 March 2001 16 July 2001 1 November 2001
22	Air Navigation Commission studies	Revised requirements for the ground proximity warning system (GPWS) and forward-looking terrain avoidance function.	15 March 2002 15 July 2002 28 November 2002
23	Separation and Airspace Safety Panel	Authorization by the State of Registry for operations in RNP airspace.	13 March 2003 14 July 2003 27 November 2003

Amendment	Source(s)	Subject(s)	Adopted Effective Applicable
24	Separation and Airspace Safety Panel and Air Navigation Commission studies	a) New definitions and provisions regarding height-keeping performance and height-monitoring requirements associated with reduced vertical separation minimum (RVSM) operations; and b) new requirements for the carriage of airborne collision avoidance systems (ACAS II) in general aviation aeroplanes, and associated training requirements for pilots.	28 February 2005 11 July 2005 24 November 2005
25	Fourteenth meeting of the Obstacle Clearance Panel (OCP/14)	Pilot awareness of operational requirements determined by procedure design.	6 March 2006 — —
26	First meeting of the Operational Data Link Panel (OPLINKP/1) and Air Navigation Commission study	a) Amendments to Standards to facilitate implementation of the available technology in relation to the use of automatic dependent surveillance — contract (ADS-C) and to the introduction of required communication performance (RCP) in the provision of air traffic services (ATS); and b) mandatory carriage requirements of emergency locator transmitters (ELTs) as of 1 July 2008.	14 March 2007 16 July 2007 22 November 2007 1 July 2008
27 (7th Edition)	Secretariat with the assistance of IBAC and IAOPA; Secretariat with the assistance of the Required Navigation Performance and Special Operational Requirements (RNPSOR) Study Group	a) Introduces provisions reflecting current practices in international general aviation as well changes to the basic structure of the Annex; and b) amendments to definitions and Standards to align required navigation performance (RNP) and area navigation (RNAV) terminology with the performance-based navigation (PBN) concept.	7 March 2008 20 July 2008 18 November 2010
28	Seventh meeting of the Operations Panel (OPSP/7)	a) Amendment to the definition of “approach and landing operations using instrument approach procedures” to show a reduced RVR requirement for CAT II and CAT IIIA and B; and b) new Recommendation 3.4.4.4 to introduce provisions for climbs and descents to reduce unnecessary ACAS II resolution advisories.	2 March 2009 20 July 2009 18 November 2010
29	Secretariat, with the assistance of the Separation and Airspace Safety Panel (SASP); ninth meeting of the Operations Panel Working Group of the Whole (OPSP/WG/ WHL/9); twelfth meeting of the Airworthiness Panel Working Group of the Whole (AIRP/WG/ WHL/12); Secretariat, with the assistance of the second meeting of the Flight Recorder Panel Working Group of the Whole (FLIRECP/WG/ WHL/2)	a) Amendment to the provisions concerning reduced vertical separation minimum (RVSM) long-term monitoring requirements; b) new provisions for head-up displays (HUD)/enhanced vision systems (EVS); c) amendment to provisions to provide consistency in propulsion terminology; and d) new and updated provisions regarding flight recorders.	26 February 2010 12 July 2010 18 November 2010

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject(s)</i>	<i>Adopted Effective Applicable</i>
30	Secretariat, in order to implement the Council mandate, pursuant to Assembly Resolution A37-9	The use of a halon replacement agent in lavatory fire extinguishers on or after 31 December 2011 and 31 December 2016 for hand-held fire extinguishers.	13 June 2011 30 October 2011 15 December 2011
31	Secretariat, with the assistance of the third meeting of the Flight Recorder Panel Working Group of the Whole (FLIRECP/WP/WHL/3)	Amendment concerning carriage requirements for flight recorders.	7 March 2012 16 July 2012 15 November 2012
32-A	Twelfth meeting of the Operations Panel Working Group of the Whole (OPSP/WG/WHL/12); Special Meeting of the Safety Management Panel (SMP/SM/1)	Amendment concerning: a) timepiece requirements and approach ban; b) the transfer of safety management provisions to Annex 19.	25 February 2013 15 July 2013 14 November 2013
32-B	Secretariat supported by the Approach Classification Task Force (ACTF) in coordination with the Aerodromes Panel (AP), the Instrument Flight Procedure Panel (IFPP), the Navigation Systems Panel (NSP) and the Operations Panel (OPSP)	Amendment concerning provisions related to instrument approach operations and procedures as a result of the new approach classification.	25 February 2013 15 July 2013 13 November 2014
33 (8th edition)	Seventh, eighth, ninth, tenth and eleventh meetings of the Instrument Flight Procedures Panel Working Group of the Whole (IFPP/WG-WHL/7, 8, 9, 10 and 11); fifteenth meeting of the Operations Panel Working Group of the Whole (OPSP/WG/WHL/15); fifth meeting of the Flight Recorder Panel Working Group of the Whole (FLIRECP/WG/WHL/5)	Amendment concerning: a) procedure design criteria and charting requirements to support PBN approach and departure operations; b) harmonization of provisions concerning EFBs, HUDs and vision systems, and fuel use. Introduction of a reference to general aviation guidance for fatigue management programmes; c) flight recorder requirements to: reference updated EUROCAE Minimum Operational Performance Specifications (MOPS); include the use of Class C lightweight airborne image recording systems (AIRS); include a seating configuration limitation for the carriage of lightweight flight recorders in small aeroplanes; align underwater location device (ULD) requirements with Annex 6, Part I; and include less stringent inspection requirements for flight recorder systems.	3 March 2014 14 July 2014 13 November 2014

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject(s)</i>	<i>Adopted Effective Applicable</i>
34-A (9th Edition)	First meeting of the Flight Operations Panel (FLTOPSP/1); Secretariat, with the assistance of the seventh meeting of the Flight Recorder Panel (FLIRECP/7); second meeting of the Operational Data Link Panel (OPLINKP/2)	Amendment concerning: <ul style="list-style-type: none"> a) harmonization and alignment of terms and language, updated performance-based navigation (PBN) provisions, and enhanced vision systems (EVS); b) carriage requirements of flight recorders — extended duration of cockpit voice recorders (CVRs); and c) performance-based communication and surveillance (PBCS). 	2 March 2016 11 July 2016 10 November 2016
34-B	Group of Experts on Protection of Accident and Incident Records (GEPAIR), stemming from the work of the Safety Information Protection Task Force (SIP TF)	Amendment concerning the protection of flight recorder recordings in normal operations.	2 March 2016 11 July 2016 7 November 2019
34-C	Friction Task Force (FTF) of the Aerodrome Design and Operations Panel (ADOP)	Amendment concerning the use of an enhanced global reporting format for assessing and reporting runway surface conditions.	2 March 2016 11 July 2016 5 November 2020
35	39th Session of the Assembly	Amendment concerning the applicability date for halon agent replacement in portable fire extinguishers.	25 November 2016 2 February 2017 27 April 2017
36 (10th Edition)	Ninth meeting of the Flight Recorder Specific Working Group (FLIRECSWG/9); third and fourth meeting of the Airworthiness Panel (AIRP/3 and AIRP/4); and the and thirteenth meeting of the Instrument Flight Procedure Panel (IFPP/13)	<ul style="list-style-type: none"> a) flight recorder requirements to include: CVR and AIR erase function; additional FDR parameters to be recorded; and simplification of flight recorder provisions; b) approval and global recognition of approved maintenance organizations (AMOs) (Phases I and II) and the introduction of the electronic aircraft maintenance records (EAMR) framework; and c) amendments as a result of the restructuring of the Procedures for Air Navigation Services — Aircraft Operations, Volume I — Flight Procedures (Doc 8168). 	7 March 2018 16 July 2018 8 November 2018

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 in international general aviation, they have the following meanings:

Acts of unlawful interference. These are acts or attempted acts such as to jeopardize the safety of civil aviation and air transport, i.e.:

- unlawful seizure of aircraft in flight,
- 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,
- 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.

Aerial work. An aircraft operation in which an aircraft is used for specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc.

Aerodrome. A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

Aerodrome operating minima. The limits of usability of an aerodrome 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.

Aeroplane. A power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

Aircraft. Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

Air traffic service (ATS). A generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service).

Airworthy. The status of an aircraft, engine, propeller or part when it conforms to its approved design and is in a condition for safe operation.

Alternate aerodrome. An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome 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 aerodromes include the following:

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

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

Destination alternate. An alternate aerodrome at which an aircraft would be able to land should it become either impossible or inadvisable to land at the aerodrome of intended landing.

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

Altimetry system error (ASE). The difference between the altitude indicated by the altimeter display, assuming a correct altimeter barometric setting, and the pressure altitude corresponding to the undisturbed ambient pressure.

Appropriate airworthiness requirements. The comprehensive and detailed airworthiness codes established, adopted or accepted by a Contracting State for the class of aircraft, engine or propeller under consideration.

Area navigation (RNAV). A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or spaced-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.

Cabin crew member. A crew member who performs, in the interest of safety of passengers, duties assigned by the operator or the pilot-in-command of the aircraft, but who shall not act as a flight crew member.

Combined vision system (CVS). A system to display images from a combination of an enhanced vision system (EVS) and a synthetic vision system (SVS).

Commercial air transport operation. An aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.

Continuing airworthiness. The set of processes by which an aircraft, engine, propeller 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 or associated part.

Continuous descent final approach (CDFA). A technique, consistent with stabilized approach procedures, for flying the final approach segment of a non-precision instrument approach procedure as a continuous descent, without level-off, from an altitude/height at or above the final approach fix altitude/height to a point approximately 15 m (50 ft) above the landing runway threshold or the point where the flare manoeuvre should begin for the type of aircraft flown.

Corporate aviation operation. The non-commercial operation or use of aircraft by a company for the carriage of passengers or goods as an aid to the conduct of company business, flown by a professional pilot(s) employed to fly the aircraft.

Dangerous goods. Articles or substances which are capable of posing a risk to health, safety, property or the environment and which are shown in the list of dangerous goods in the Technical Instructions or which are classified according to those Instructions.

Note.— Dangerous goods are classified in Annex 18, Chapter 3.

Decision altitude (DA) or decision height (DH). A specified altitude or height in a 3D instrument approach operation at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.

Note 1.— Decision altitude (DA) is referenced to mean sea level and decision height (DH) is referenced to the threshold elevation.

Note 2.— The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In Category III operations with a decision height the required visual reference is that specified for the particular procedure and operation.

Note 3.— For convenience where both expressions are used they may be written in the form “decision altitude/height” and abbreviated “DA/H”.

Electronic flight bag (EFB). An electronic information system, comprised of equipment and applications for flight crew, which allows for the storing, updating, displaying and processing of EFB functions to support flight operations or duties.

Emergency locator transmitter (ELT). A generic term describing equipment which broadcast distinctive signals on designated frequencies and, depending on application, may be automatically activated by impact or be manually activated. An ELT may be any of the following:

Automatic fixed ELT (ELT(AF)). An automatically activated ELT which is permanently attached to an aircraft.

Automatic portable ELT (ELT(AP)). An automatically activated ELT which is rigidly attached to an aircraft but readily removable from the aircraft.

Automatic deployable ELT (ELT(AD)). An ELT which is rigidly attached to an aircraft and which is automatically deployed and activated by impact, and, in some cases, also by hydrostatic sensors. Manual deployment is also provided.

Survival ELT (ELT(S)). An ELT which is removable from an aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by survivors.

Engine. A unit used or intended to be used for aircraft propulsion. It consists of at least those components and equipment necessary for functioning and control, but excludes the propeller/rotors (if applicable).

Enhanced vision system (EVS). A system to display electronic real-time images of the external scene achieved through the use of image sensors.

Note.— EVS does not include night vision imaging systems (NVIS).

Extended flight over water. A flight operated over water at a distance of more than 93 km (50 NM), or 30 minutes at normal cruising speed, whichever is the lesser, away from land suitable for making an emergency landing.

Final approach segment (FAS). That segment of an instrument approach procedure in which alignment and descent for landing are accomplished.

Flight crew member. A licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period.

Flight manual. A manual, associated with the certificate of airworthiness, containing limitations within which the aircraft is to be considered airworthy, and instructions and information necessary to the flight crew members for the safe operation of the aircraft.

Flight plan. Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

Flight recorder. Any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation.

Automatic deployable flight recorder (ADFR). A combination flight recorder installed on the aircraft which is capable of automatically deploying from the aircraft.

Flight simulation training device. Any one of the following three types of apparatus in which flight conditions are simulated on the ground:

A flight simulator, which provides an accurate representation of the flight deck of a particular aircraft type to the extent that the mechanical, electrical, electronic, etc. aircraft systems control functions, the normal environment of flight crew members, and the performance and flight characteristics of that type of aircraft are realistically simulated;

A flight procedures trainer, which provides a realistic flight deck environment, and which simulates instrument responses, simple control functions of mechanical, electrical, electronic, etc. aircraft systems, and the performance and flight characteristics of aircraft of a particular class;

A basic instrument flight trainer, which is equipped with appropriate instruments, and which simulates the flight deck environment of an aircraft in flight in instrument flight conditions.

Flight time — aeroplanes. The total time from the moment an aeroplane first moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight.

Note.— Flight time as here defined is synonymous with the term “block to block” time or “chock to chock” time in general usage which is measured from the time an aeroplane first moves for the purpose of taking off until it finally stops at the end of the flight.

General aviation operation. An aircraft operation other than a commercial air transport operation or an aerial work operation.

Head-up display (HUD). A display system that presents flight information into the pilot’s forward external field of view.

Industry codes of practice. Guidance material developed by an industry body, for a particular sector of the aviation industry to comply with the requirements of the International Civil Aviation Organization’s Standards and Recommended Practices, other aviation safety requirements and the best practices deemed appropriate.

Note.— Some States accept and reference industry codes of practice in the development of regulations to meet the requirements of Annex 6, Part II, and make available, for the industry codes of practice, their sources and how they may be obtained.

Instrument approach operations. An approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for executing instrument approach operations:

- a) a two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and
- b) a three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance.

Note.— Lateral and vertical navigation guidance refers to the guidance provided either by:

- a) a ground-based radio navigation aid; or
- b) computer-generated navigation data from ground-based, space-based, self-contained navigation aids or a combination of these.

Instrument approach procedure (IAP). A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply. Instrument approach procedures are classified as follows:

Non-precision approach (NPA) procedure. An instrument approach procedure designed for 2D instrument approach operations Type A.

Note.— Non-precision approach procedures may be flown using a continuous descent final approach (CDFA) technique. CDFAs with advisory vertical navigation (VNAV) guidance calculated by on-board equipment are considered 3D instrument approach operations. CDFAs with manual calculation of the required rate of descent are considered 2D instrument approach operations. For more information on CDFAs, refer to PANS-OPS (Doc 8168), Volume I, Part II, Section 5.

Approach procedure with vertical guidance (APV). A performance-based navigation (PBN) instrument approach procedure designed for 3D instrument approach operations Type A.

Precision approach (PA) procedure. An instrument approach procedure based on navigation systems (ILS, MLS, GLS and SBAS CAT I) designed for 3D instrument approach operations Type A or B.

Note.— Refer to Section 2, Chapter 2.2, 2.2.2.2.2, for instrument approach operation types.

Instrument meteorological conditions (IMC). Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling,* less than the minima specified for visual meteorological conditions.

Note.— The specified minima for visual meteorological conditions are contained in Chapter 4 of Annex 2.

Isolated aerodrome. A destination aerodrome for which there is no destination alternate aerodrome suitable for a given aeroplane type.

Large aeroplane. An aeroplane of a maximum certificated take-off mass of over 5 700 kg.

* As defined in Annex 2.

Maintenance.[†] The performance of tasks required to ensure the continuing airworthiness of an aircraft, including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair.

Maintenance.^{††} The performance of tasks on an aircraft, engine, propeller or associated part required to ensure the continuing airworthiness of an aircraft, engine, propeller or associated part including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair.

Maintenance programme. A document which describes the specific scheduled maintenance tasks and their frequency of completion and related procedures, such as a reliability programme, necessary for the safe operation of those aircraft to which it applies.

Maintenance release.[†] A document which contains a certification confirming that the maintenance work to which it relates has been completed in a satisfactory manner, either in accordance with the approved data and the procedures described in the maintenance organization's procedures manual or under an equivalent system.

Maintenance release.^{††} A document which contains a certification confirming that the maintenance work to which it relates has been completed in a satisfactory manner in accordance with appropriate airworthiness requirements.

Meteorological information. Meteorological report, analysis, forecast, and any other statement relating to existing or expected meteorological conditions.

Minimum descent altitude (MDA) or minimum descent height (MDH). A specified altitude or height in a 2D instrument approach operation or circling approach operation below which descent must not be made without the required visual reference.

Note 1.— Minimum descent altitude (MDA) is referenced to mean sea level and minimum descent height (MDH) is referenced to the aerodrome elevation or to the threshold elevation if that is more than 2 m (7 ft) below the aerodrome elevation. A minimum descent height for a circling approach is referenced to the aerodrome elevation.

Note 2.— The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach the required visual reference is the runway environment.

Note 3.— For convenience when both expressions are used they may be written in the form “minimum descent altitude/height” and abbreviated “MDA/H”.

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

Note.— A modification may also include the embodiment of the modification which is a maintenance task subject to a maintenance release. Further guidance on aircraft maintenance — modification and repair is contained in the Airworthiness Manual (Doc 9760).

Navigation specification. A set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications:

Required navigation performance (RNP) specification. A navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP, e.g. RNP 4, RNP APCH.

[†] Applicable until 4 November 2020.

^{††} Applicable as of 5 November 2020.

Area navigation (RNAV) specification. A navigation specification based on area navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV, e.g. RNAV 5, RNAV 1.

Note 1.— The Performance-based Navigation (PBN) Manual (Doc 9613), Volume II, contains detailed guidance on navigation specifications

Note 2.— The term RNP, previously defined as “a statement of the navigation performance necessary for operation within a defined airspace”, has been removed from this Annex as the concept of RNP has been overtaken by the concept of PBN. The term RNP in this Annex is now solely used in the context of navigation specifications that require performance monitoring and alerting, e.g. RNP 4 refers to the aircraft and operating requirements, including a 4 NM lateral performance with on-board performance monitoring and alerting that are detailed in Doc 9613.

Night. The hours between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise, as may be prescribed by the appropriate authority.

Note.— Civil twilight ends in the evening when the centre of the sun’s disc is 6 degrees below the horizon and begins in the morning when the centre of the sun’s disc is 6 degrees below the horizon.

Obstacle clearance altitude (OCA) or obstacle clearance height (OCH). The lowest altitude or the lowest height above the elevation of the relevant runway threshold or the aerodrome elevation as applicable, used in establishing compliance with appropriate obstacle clearance criteria.

Note 1.— Obstacle clearance altitude is referenced to mean sea level and obstacle clearance height is referenced to the threshold elevation or in the case of non-precision approach procedures to the aerodrome elevation or the threshold elevation if that is more than 2 m (7 ft) below the aerodrome elevation. An obstacle clearance height for a circling approach procedure is referenced to the aerodrome elevation.

Note 2.— For convenience when both expressions are used they may be written in the form “obstacle clearance altitude/height” and abbreviated “OCA/H”.

Operating base. The location from which operational control is exercised.

Note.— An operating base is normally the location where personnel involved in the operation of the aeroplane work and the records associated with the operation are located. An operating base has a degree of permanency beyond that of a regular point of call.

Operational control. The exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of the safety of the aircraft and the regularity and efficiency of the flight.

Operational flight plan. The operator’s plan for the safe conduct of the flight based on considerations of aeroplane performance, other operating limitations and relevant expected conditions on the route to be followed and at the aerodromes concerned.

Operations manual. A manual containing procedures, instructions and guidance for use by operational personnel in the execution of their duties.

Operator. The person, organization or enterprise engaged in or offering to engage in an aircraft operation.

Note.— In the context of Annex 6, Part II, the operator is not engaged in the transport of passengers, cargo or mail for remuneration or hire.

Performance-based communication (PBC). Communication based on performance specifications applied to the provision of air traffic services.

Note.— An RCP specification includes communication performance requirements that are allocated to system components in terms of the communication to be provided and associated transaction time, continuity, availability, integrity, safety and functionality needed for the proposed operation in the context of a particular airspace concept.

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.

Performance-based surveillance (PBS). Surveillance based on performance specifications applied to the provision of air traffic services.

Note.— An RSP specification includes surveillance performance requirements that are allocated to system components in terms of the surveillance to be provided and associated data delivery time, continuity, availability, integrity, accuracy of the surveillance data, safety and functionality needed for the proposed operation in the context of a particular airspace concept.

Pilot-in-command. The pilot designated by the operator or the owner as being in command and charged with the safe conduct of a flight.

Point of no return. The last possible geographic point at which an aircraft can proceed to the destination aerodrome as well as to an available en-route alternate aerodrome for a given flight.

Psychoactive substances. Alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded.

Repair.[†] The restoration of an aeronautical product to an airworthy condition to ensure that the aircraft continues to comply with the design aspects of the appropriate airworthiness requirements used for the issuance of the type certificate for the respective aircraft type, after it has been damaged or subjected to wear.

Repair.^{††} The restoration of an aircraft, engine, propeller or associated part to an airworthy condition in accordance with the appropriate airworthiness requirements after it has been damaged or subjected to wear.

Required communication performance (RCP) specification. A set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based communication.

Required surveillance performance (RSP) specification. A set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based surveillance.

Runway visual range (RVR). The range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line.

[†] Applicable until 4 November 2020.

^{††} Applicable as of 5 November 2020.

State of Registry. The State on whose register the aircraft is entered.

Note.— In the case of the registration of aircraft of an international operating agency on other than a national basis, the States constituting the agency are jointly and severally bound to assume the obligations which, under the Chicago Convention, attach to a State of Registry. See, in this regard, the Council Resolution of 14 December 1967 on Nationality and Registration of Aircraft Operated by International Operating Agencies which can be found in Policy and Guidance Material on the Economic Regulation of International Air Transport (Doc 9587).

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

Synthetic vision system (SVS). A system to display data-derived synthetic images of the external scene from the perspective of the flight deck.

Target level of safety (TLS). A generic term representing the level of risk which is considered acceptable in particular circumstances.

Total vertical error (TVE). The vertical geometric difference between the actual pressure altitude flown by an aircraft and its assigned pressure altitude (flight level).

Visual meteorological conditions (VMC). Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling,* equal to or better than specified minima.

Note.— The specified minima are contained in Chapter 4 of Annex 2.

* As defined in Annex 2.

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.

Note 1.— Standards and Recommended Practices applicable to the operation of aeroplanes by operators authorized to conduct international commercial air transport operations are to be found in Annex 6, Part I.

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.

Note 3.— Section 2 of Annex 6, Part II, applies to all international general aviation aeroplane operations, including those covered in Section 3. Section 3 adds additional requirements for large aeroplanes, turbojet aeroplanes and corporate aviation operations.

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ANNEX 6 — PART II

SECTION 2

GENERAL AVIATION OPERATIONS

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CHAPTER 2.1 GENERAL

Note 1.— Although the Convention on International Civil Aviation allocates to the State of Registry certain functions which that State is entitled to discharge, or obligated to discharge, as the case may be, the Assembly recognized, in Resolution A23-13, that the State of Registry may be unable to fulfil its responsibilities adequately in instances where aircraft are leased, chartered or interchanged — in particular without crew — by the operator of another State and that the Convention may not adequately specify the rights and obligations of the State of the operator in such instances until such time as Article 83 bis of the Convention enters into force. Accordingly, the Council urged that if, in the above-mentioned instances, the State of Registry finds itself unable to discharge adequately the functions allocated to it by the Convention, it delegate to the State of the Operator, subject to acceptance by the latter State, those functions of the State of Registry that can more adequately be discharged by the State of the Operator. It was understood that pending entry into force of Article 83 bis of the Convention the foregoing action would only be a matter of practical convenience and would not affect either the provisions of the Chicago Convention prescribing the duties of the State of Registry or any third State. However, as Article 83 bis of the Convention entered into force on 20 June 1997, such transfer agreements will have effect in respect of Contracting States which have ratified the related Protocol (Doc 9318) upon fulfilment of the conditions established in Article 83 bis.

Note 2.— In the case of international operations effected jointly with aeroplanes 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.

2.1.1 Compliance with laws, regulations and procedures

2.1.1.1 The pilot-in-command shall comply with the laws, regulations and procedures of those States in which operations are conducted.

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.

Note.— 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 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 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 the essential information concerning the search and rescue services in the area over which the aeroplane 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

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.

2.1.3 Use of psychoactive substances

Note.— Provisions concerning the use of psychoactive substances are contained in Annex 1, 1.2.7 and Annex 2, 2.5.

2.1.4 Specific approvals

The pilot-in-command shall not conduct operations for which a specific approval is required unless such approval has been issued by the State of Registry. Specific approvals shall follow the layout and contain at least the information listed in Appendix 2.4.