COVER SHEET TO AMENDMENT 13

INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES

OPERATION OF AIRCRAFT

ANNEX 6
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

PART III
INTERNATIONAL OPERATIONS — HELICOPTERS

SIXTH EDITION — JULY 2007

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Checklist of Amendments to Annex 6, Part III

	Effective date	*Date of applicability*
Sixth Edition (incorporates Amendments 1–12)	16 July 2007	22 November 2007 1 July 2008
Amendment 13 (adopted by the Council on 3 March 2008) Replacement pages (iii), (vii), (viii), (x), (xii), (xiii), (xxi), I-1-2 to I-1-10, II-1-2 to II-1-4, II-2-1 to II-2-12, II-4-1, II-5-1, II-5-2, II-7-2, II-8-1, II-9-1, III-5-1, III-5-2, APP 1-1, APP 1-2, APP 3-1 to APP 3-4, ATT C-1, ATT C-4, ATT F-1 to ATT F-7, ATT G-1, ATT H-1, ATT H-3	20 July 2008	20 November 2008 1 January 2010

Transmittal note

Amendment 13

to the

International Standards and
Recommended Practices

OPERATION OF AIRCRAFT

(Annex 6, Part III to the Convention on International Civil Aviation)

1. Insert the following replacement pages in Annex 6, Part III (Sixth Edition) to incorporate Amendment 13 which becomes applicable on 20 November 2008:

a)	Pages (iii), (vii) and (viii)	— Table of Contents
b)	Page (x)	— Abbreviations and symbols
c)	Page (xii) and (xiii)	— Publications
d)	Page (xxi)	— Foreword
e)	Pages I-1-2 to I-1-10	— Section I, Chapter 1
f)	Pages II-1-2 to II-1-4	— Section II, Chapter 1
g)	Pages II-2-1 to II-2-12	— Section II, Chapter 2
h)	Page II-4-1	— Section II, Chapter 4
i)	Pages II-5-1 and II-5-2	— Section II, Chapter 5
j)	Page II-7-2	— Section II, Chapter 7
k)	Page II-8-1	— Section II, Chapter 8
l)	Page II-9-1	— Section II, Chapter 9
m)	Pages III-5-1 and III-5-2	— Section III, Chapter 5
n)	Pages APP 1-1 and APP 1-2	— Appendix 1

o) Pages APP 3-1 to APP 3-4 — Appendix 3

p) Pages ATT C-1 and ATT C-4 — Attachment C

q) Pages ATT F-1 to ATT F-7 — Attachment F

r) Page ATT G-1 — Attachment G

s) Pages ATT H-1 and ATT H-3 — Attachment H

2. Record the entry of this amendment on page (ii).

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ATTACHMENTS

ABBREVIATIONS AND SYMBOLS
(used in this Annex)

Abbreviations

ACAS	Airborne collision avoidance systems
ADS-C	Automatic dependent surveillance — contract
AFCS	Automatic flight control system
AIG	Accident investigation and prevention
AOC	Aeronautical operational control
AOC	Air operator certificate
ATC	Air traffic control
ATM	Air traffic management
ATS	Air traffic services
CAA	Civil Aviation Authority
CAT I	Category I
CAT II	Category II
CAT III	Category III
CAT IIIA	Category IIIA
CAT IIIB	Category IIIB
CAT IIIC	Category IIIC
CDL	Configuration deviation list
CFIT	Controlled flight into terrain
cm	Centimetre
CPDLC	Controller-pilot data link communications
CVR	Cockpit voice recorder
DA	Decision altitude
DA/H	Decision altitude/height
D-FIS	Data link-flight information services
DH	Decision height
Distance DR	The horizontal distance that the helicopter has travelled from the end of the take-off distance available
DME	Distance measuring equipment
ECAM	Electronic centralized aircraft monitor
EFIS	Electronic flight instrument system
EGT	Exhaust gas temperature
EICAS	Engine indication and crew alerting system
ELT	Emergency locator transmitter
ELT(AF)	Automatic fixed ELT
ELT(AP)	Automatic portable ELT
ELT(AD)	Automatic deployable ELT
ELT(S)	Survival ELT
EUROCAE	European Organization for Civil Aviation Equipment
EPR	Engine pressure ratio
FATO	Final approach and take-off area
FDAU	Flight data acquisition unit
FDR	Flight data recorder
FM	Frequency modulation
ft	Foot

g	Normal acceleration
hPa	Hectopascal
HUMS	Health and usage monitor system
IFR	Instrument flight rules
ILS	Instrument landing system
IMC	Instrument meteorological conditions
in Hg	Inch of mercury
kg	Kilogram
km	Kilometre
kN	Kilonewton
kt	Knot
LDAH	Landing distance available
LDP	Landing decision point
LDRH	Landing distance required
m	Metre
mb	Millibar
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
MOPS	Minimum operational performance specification
NAV	Navigation
N_1	Low pressure compressor speed (two-stage compressor); fan speed (three-stage compressor)
NM	Nautical mile
NVIS	Night vision imaging systems
OCA	Obstacle clearance altitude
OCA/H	Obstacle clearance altitude/height
OCH	Obstacle clearance height
PANS	Procedures for Air Navigation Services
PBN	Performance-based navigation
PNR	Point of no return
psi	Pound per square inch
R	Rotor radius
RCP	Required communication performance
RNAV	Area navigation
RNP	Required navigation performance
RTODR	Rejected take-off distance required
RVR	Runway visual range
SI	International System of Units
SICASP	Secondary Surveillance Radar Improvements and Collision Avoidance Systems Panel
SOP	Standard operating procedures

T_4	Engine exhaust gas temperature
TDP	Take-off decision point
TIT	Turbine inlet temperature
TLOF	Touchdown and lift-off area
TODAH	Take-off distance available
TODRH	Take-off distance required
UTC	Coordinated universal time
VFR	Visual flight rules
VMC	Visual meteorological conditions
V_{TOSS}	Take-off safety speed. The minimum speed at which climb shall be achieved with the critical power-unit inoperative, the remaining power-units operating within approved operating limits
V_y	Best rate of climb speed
WXR	Weather

Symbols

°C	Degrees Celsius
%	Per cent

PUBLICATIONS
(referred to in this Annex)

Convention on International Civil Aviation (Doc 7300)

European Organization for Civil Aviation Equipment (EUROCAE) Documents ED55 and ED56A

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

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 4 — Aeronautical Charts

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Part I — *International Commercial Air Transport — Aeroplanes*
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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*
Volume II — *Heliports*

Annex 15 — Aeronautical Information Services

Annex 16 — Environmental Protection
Volume I — *Aircraft Noise*

Annex 18 — The Safe Transport of Dangerous Goods by Air

Procedures for Air Navigation Services

OPS — Aircraft Operations (Doc 8168)
Volume I — *Flight Procedures*
Volume II — *Construction of Visual and Instrument Flight Procedures*

ATM — Air Traffic Management (Doc 4444)

TRG — Training (Doc 9868)

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)

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

Human Factors Training Manual (Doc 9683)

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

Manual of Procedures for Operations Inspection, Certification and Continued Surveillance (Doc 8335)

Manual of Procedures for the Establishment of a State's Personnel Licensing System (Doc 9379)

Manual on Required Communications Performance (RCP) (Doc 9869)

Performance-based Navigation Manual (Doc 9613)

Preparation of an Operations Manual (Doc 9376)

Safety Management Manual (SMM) (Doc 9859)

Safety Oversight Manual (Doc 9734)
Part A — *The Establishment and Management of a State's Safety Oversight System*

Training Manual (Doc 7192)
Part D-3 — *Flight Operations Officers/Flight Dispatchers*

Circular

Guidance on the Implementation of Article 83 bis *of the Convention on International Civil Aviation* (Cir 295)

Amendment	*Source*		*Subject(s)*	*Adopted* *Effective* *Applicable*
12 (6th Edition)	Air Navigation Commission study, First meeting of the Operational Data Link Panel (OPLINKP/1), and Secretariat study assisted by the Helicopter Tilt-Rotor Study Group	a)	Amendments to Standards to facilitate implementation of the available technology in relation to the use of automatic dependant surveillance — contract (ADS-C) and to the introduction of required communication performance (RCP) in the provision of air traffic services (ATS);	14 March 2007 16 July 2007 22 November 2007 1 July 2008
		b)	a closer alignment of the provisions of Annex 6, Part III, with recognized regulatory practices;	
		c)	a change to the definitions of performance classes;	
		d)	a change to permit appropriate consideration for achieving a safe forced landing in the event of an engine failure for operations in performance Classes 2 and 3;	
		e)	the addition of new provisions relating to commercial operations under instrument meteorological conditions;	
		f)	a new definition of the term "operation";	
		g)	the introduction of the concept of "offshore operations"; and	
		h)	mandatory carriage requirements for emergency locator transmitters (ELTs) as of 1 July 2008).	
13	Secretariat; Secretariat with the assistance of the Required Navigation Performance and Special Operational Requirements (RNPSOR) Study Group	a)	Amendments to definitions and Standards and Recommended Practices to strengthen the oversight and requirements of foreign operators and to harmonize the air operator certificate in content and, as of 1 January 2010, in layout; and	3 March 2008 20 July 2008 20 November 2008 1 January 2010
		b)	amendments to definitions and Standards to align required navigation performance (RNP) and area navigation (RNAV) terminology with the performance-based navigation concept.	

INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES

CHAPTER 1. DEFINITIONS

When the following terms are used in the Standards and Recommended Practices for international operations with helicopters, they have the following meanings:

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.

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.

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.

Air operator certificate (AOC). A certificate authorizing an operator to carry out specified commercial air transport operations.

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. Alternate heliports include the following:

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

En-route alternate. A heliport at which a helicopter would be able to land after experiencing an abnormal or emergency condition while en route.

Destination alternate. An alternate heliport to which a helicopter may proceed 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 operations using instrument approach procedures. Instrument approach and landing operations are classified as follows:

Non-precision approach and landing operations. An instrument approach and landing which utilizes lateral guidance but does not utilize vertical guidance.

Approach and landing operations with vertical guidance. An instrument approach and landing which utilizes lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations.

Precision approach and landing operations. An instrument approach and landing using precision lateral and vertical guidance with minima as determined by the category of operation.

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

a) a ground-based navigation aid; or

b) computer generated navigation data.

Categories of precision approach and landing operations:

Category I (CAT I) operation. A precision instrument approach and landing with a decision height not lower than 60 m (200 ft) and with either a visibility not less than 800 m or a runway visual range not less than 550 m.

Category II (CAT II) operation. A precision instrument approach and landing with a decision height lower than 60 m (200 ft), but not lower than 30 m (100 ft), and a runway visual range not less than 350 m.

Category IIIA (CAT IIIA) operation. A precision instrument approach and landing with:

a) a decision height lower than 30 m (100 ft) or no decision height; and

b) a runway visual range not less than 200 m.

Category IIIB (CAT IIIB) operation. A precision instrument approach and landing with:

a) a decision height lower than 15 m (50 ft) or no decision height; and

b) a runway visual range less than 200 m but not less than 50 m.

Category IIIC (CAT IIIC) operation. A precision instrument approach and landing with no decision height and no runway visual range limitations.

Note.— Where decision height (DH) and runway visual range (RVR) fall into different categories of operation, the instrument approach and landing operation would be conducted in accordance with the requirements of the most demanding category (e.g. an operation with a DH in the range of CAT IIIA but with an RVR in the range of CAT IIIB would be considered a CAT IIIB operation or an operation with a DH in the range of CAT II but with an RVR in the range of CAT I would be considered a CAT II operation).

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.

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.

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.

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

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.

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

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 the precision approach or approach with vertical guidance 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".

Defined point after take-off (DPATO). The point, within the take-off and initial climb phase, before which the helicopter's ability to continue the flight safely, with one engine inoperative, is not assured and a forced landing may be required.

Note.— Defined points apply to helicopters operating in performance Class 2 only.

Defined point before landing (DPBL). The point, within the approach and landing phase, after which the helicopter's ability to continue the flight safely, with one engine inoperative, is not assured and a forced landing may be required.

Note.— Defined points apply to helicopters operating in performance Class 2 only.

Elevated heliport. A heliport located on a raised structure on land.

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.

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 must be planned to ensure that obstacles can be cleared by an appropriate margin. In the event of failure of the critical power-unit, operators may need to adopt alternative procedures.

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

Flight duty period. The total time from the moment a flight crew member commences duty, immediately subsequent to a rest period and prior to making a flight or a series of flights, to the moment the flight crew member is relieved of all duties having completed such flight or series of flights.

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 operations officer/flight dispatcher. A person designated by the operator to engage in the control and supervision of flight operations, whether licensed or not, suitably qualified in accordance with Annex 1, who supports, briefs and/or assists the pilot-in-command in the safe conduct of the flight.

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.

Flight safety documents system. A set of interrelated documentation established by the operator, compiling and organizing information necessary for flight and ground operations, and comprising, as a minimum, the operations manual and the operator's maintenance control manual.

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 — 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.

Note 1.— The State may provide guidance in those cases where the definition of flight time does not describe or permit normal practices. Examples are: crew change without stopping the rotors; and rotors running engine wash procedure following a flight. In any case, the time when rotors are running between sectors of a flight is included within the calculation of flight time.

Note 2.— This definition is intended only for the purpose of flight and duty time regulations.

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

Ground handling. Services necessary for an aircraft's arrival at, and departure from, an airport, other than air traffic services.

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 precision approach and landing operations, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H) as appropriate to the category of the operation;

c) landing in approach and landing operations with vertical guidance, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H); and

d) landing in non-precision approach and landing operations, expressed in terms of visibility and/or runway visual range, minimum descent altitude/height (MDA/H) and, if necessary, cloud conditions.

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 and efficiency of aeronautical operations.

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.

Integrated survival suit. A survival suit which meets the combined requirements of the survival suit and life jacket.

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

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

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 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.

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.

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 descent altitude (MDA) or ***minimum descent height (MDH).*** A specified altitude or height in a non-precision approach or circling approach 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".

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* As defined in Annex 2.

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.

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:

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.

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

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.

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.

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 approaches 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 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".

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.

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 helicopter performance, other operating limitations and relevant expected conditions on the route to be followed and at the heliports concerned.

Operations in performance Class 1. Operations with performance such that, in the event of a critical power-unit 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 power-unit 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 a power-unit failure at any time during the flight, a forced landing will be required.

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

Operations specifications. The authorizations, conditions and limitations associated with the air operator certificate and subject to the conditions in the operations manual.

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

Operator's maintenance control manual. A document which describes the operator's procedures necessary to ensure that all scheduled and unscheduled maintenance is performed on the operator's aircraft on time and in a controlled and satisfactory manner.

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.

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

Required communication performance (RCP). A statement of the performance requirements for operational communication in support of specific ATM functions.

Required communication performance type (RCP type). A label (e.g. RCP 240) that represents the values assigned to RCP parameters for communication transaction time, continuity, availability and integrity.

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.

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. A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

Safety programme. An integrated set of regulations and activities aimed at improving safety.

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 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 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. 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, a power-unit 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.

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.

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* As defined in Annex 2.

V_{TOSS}. The minimum speed at which climb shall be achieved with the critical power-unit inoperative, the remaining power-units 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.

CHAPTER 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 an operator of another State and that the Convention may not adequately specify the rights and obligations of the State of an 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 helicopters not all of which are registered in the same Contracting State, nothing in this Part of the Annex 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.

1.1 Compliance with laws, regulations and procedures

1.1.1 Operators shall ensure that their employees when abroad know that they must comply with the laws, regulations and procedures of the States in which their helicopters are operated.

1.1.2 Operators shall ensure that all pilots are familiar with the laws, regulations and procedures, pertinent to the performance of their duties, prescribed for the areas to be traversed, the heliports to be used and the air navigation facilities relating thereto. The operator shall ensure that other members of the flight crew are familiar with such of these regulations and procedures as are pertinent to the performance of their respective duties in the operation of the helicopter.

Note.— Information for pilots and flight operations personnel 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.

1.1.3 Operators shall ensure that flight crew members demonstrate the ability to speak and understand the language used for radiotelephony communications as specified in Annex 1.

1.1.4 An operator or a designated representative shall have responsibility for operational control.

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

1.1.5 Responsibility for operational control shall be delegated only to the pilot-in-command and to a flight operations officer/flight dispatcher if an 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* Preparation of an Operations Manual *(Doc 9376). The requirements for age, skill, knowledge and experience for licensed flight operations officers/flight dispatchers are contained in Annex 1.*

1.1.6 If an emergency situation which endangers the safety of the helicopter or persons becomes known first to the flight operations officer/flight dispatcher, action by that person in accordance with 2.6.1 shall include, where necessary, notification to the appropriate authorities of the nature of the situation without delay, and requests for assistance if required.

1.1.7 If an emergency situation which endangers the safety of the helicopter 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 the Operator. Such reports shall be submitted as soon as possible and normally within ten days.

1.1.8 Operators shall ensure that pilots-in-command have available on board the helicopter all the essential information concerning the search and rescue services in the area over which the helicopter will be flown.

Note.— This information may be made available to the pilot by means of the operations manual or such other means as is considered appropriate.

1.1.9 An operator shall establish and maintain an accident prevention and flight safety programme.

Note.— Guidance on accident prevention is contained in the Preparation of an Operations Manual *(Doc 9376).*

1.1.10 **Recommendation.—** *An operator of a helicopter of a certificated take-off mass in excess of 7 000 kg or having a passenger seating configuration of more than 9 and fitted with a flight data recorder should establish and maintain a flight data analysis programme as part of its accident prevention and flight safety programme.*

Note.— An operator may contract the operation of a flight data analysis programme to another party while retaining overall responsibility for the maintenance of such a programme.

1.1.11 Any flight data analysis programme shall be non-punitive and contain adequate safeguards to protect the source(s) of the data.

1.2 Compliance by a foreign operator with laws, regulations and procedures of a State

1.2.1 When a State identifies a case of non-compliance or suspected non-compliance by a foreign operator with laws, regulations and procedures applicable within that State's territory, or a similar serious safety issue with that operator, that State shall immediately notify the operator and, if the issue warrants it, the State of the Operator. Where the State of the Operator and the State of Registry are different, such notification shall also be made to the State of Registry, if the issue falls within the responsibilities of that State and warrants a notification.

1.2.2 In the case of notification to States as specified in 1.2.1, if the issue and its resolution warrant it, the State in which the operation is conducted shall engage in consultations with the State of the Operator and the State of Registry, as applicable, concerning the safety standards maintained by the operator.

Note.— The Manual of Procedures for Operations Inspection, Certification and Continued Surveillance *(Doc 8335) provides guidance on the surveillance of operations by foreign operators. The manual also contains guidance on the*

consultations and related activities, as specified in 1.2.2, including the ICAO model clause on aviation safety, which, if included in a bilateral or multilateral agreement, provides for consultations among States, when safety issues are identified by any of the parties to a bilateral or multilateral agreement on air services.

1.3 Safety management

1.3.1 States shall establish a safety programme in order to achieve an acceptable level of safety in the operation of aircraft.

1.3.2 The acceptable level of safety to be achieved shall be established by the State(s) concerned.

Note.— Guidance on safety programmes is contained in the Safety Management Manual (SMM) *(Doc 9859), and the definition of acceptable levels of safety is contained in Attachment E to Annex 11.*

1.3.3 **Recommendation.—** *States should require, as part of their safety programme, that an operator implement a safety management system acceptable to the State of the Operator that, as a minimum:*

a) identifies safety hazards;

b) ensures that remedial action necessary to maintain an acceptable level of safety is implemented;

c) provides for continuous monitoring and regular assessment of the safety level achieved; and

d) aims to make continuous improvement to the overall level of safety.

1.3.4 From 1 January 2009, States shall require, as part of their safety programme, that an operator implement a safety management system acceptable to the State of the Operator that, as a minimum:

a) identifies safety hazards;

b) ensures that remedial action necessary to maintain an acceptable level of safety is implemented;

c) provides for continuous monitoring and regular assessment of the safety level achieved; and

d) aims to make continuous improvement to the overall level of safety.

1.3.5 A safety management system shall clearly define lines of safety accountability throughout the operator's organization, including a direct accountability for safety on the part of senior management.

Note.— Guidance on safety management systems is contained in the Safety Management Manual (SMM) *(Doc 9859).*

1.3.6 An operator shall establish a flight safety documents system, for the use and guidance of operational personnel, as part of its safety management system.

Note.— Guidance on the development and organization of a flight safety documents system is provided in Attachment G.

1.4 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.

1.5 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.

CHAPTER 2. FLIGHT OPERATIONS

2.1 Operating facilities

2.1.1 An operator 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 available and directly required on such flight, for the safe operation of the helicopter and the protection of the passengers, are adequate for the type of operation under which the flight is to be conducted and are adequately operated for this purpose.

Note.— "Reasonable means" in this Standard is intended to denote the use, at the point of departure, of information available to the operator either through official information published by the aeronautical information services or readily obtainable from other sources.

2.1.2 An operator shall ensure that any inadequacy of facilities observed in the course of operations is reported to the authority responsible for them, without undue delay.

2.2 Operational certification and supervision

2.2.1 The air operator certificate

2.2.1.1 An operator shall not engage in commercial air transport operations unless in possession of a valid air operator certificate issued by the State of the Operator.

2.2.1.2 The air operator certificate shall authorize the operator to conduct commercial air transport operations in accordance with the operations specifications.

Note.— Provisions for the content of the air operator certificate and its associated operations specifications are contained in 2.2.1.5 and 2.2.1.6.

2.2.1.3 The issue of an air operator certificate by the State of the Operator shall be dependent upon the operator demonstrating an adequate organization, method of control and supervision of flight operations, training programme as well as ground handling and maintenance arrangements consistent with the nature and extent of the operations specified.

Note.— Attachment F contains guidance on the issue of an air operator certificate.

2.2.1.4 The continued validity of an air operator certificate shall depend upon the operator maintaining the requirements of 2.2.1.3 under the supervision of the State of the Operator.

2.2.1.5 The air operator certificate shall contain at least the following information and, from 1 January 2010, shall follow the layout of Appendix 3, paragraph 2:

a) the State of the Operator and the issuing authority;

b) the air operator certificate number and its expiration date;

c) the operator name, trading name (if different) and address of the principal place of business;

d) the date of issue and the name, signature and title of the authority representative; and

e) the location, in a controlled document carried on board, where the contact details of operational management can be found.

2.2.1.6 The operations specifications associated with the air operator certificate shall contain at least the information listed in Appendix 3, paragraph 3, and, from 1 January 2010, shall follow the layout of Appendix 3, paragraph 3.

Note.— Attachment F, paragraph 3.2.2, contains additional information that may be listed in the operations specifications associated with the air operator certificate.

2.2.1.7 Air operator certificates and their associated operations specifications first issued from 20 November 2008 shall follow the layouts of Appendix 3, paragraphs 2 and 3.

2.2.1.8 The State of the Operator shall establish a system for both the certification and the continued surveillance of the operator in accordance with Appendix 1 to ensure that the required standards of operations established in 2.2 are maintained.

2.2.2 Surveillance of operations by a foreign operator

2.2.2.1 Contracting States shall recognize as valid an air operator certificate issued by another Contracting State provided that the requirements under which the certificate was issued are at least equal to the applicable Standards specified in this Annex.

2.2.2.2 States shall establish a programme with procedures for the surveillance of operations in their territory by a foreign operator and for taking appropriate action when necessary to preserve safety.

2.2.2.3 An operator shall meet and maintain the requirements established by the States in which the operations are conducted.

Note.— Guidance on the surveillance of operations by foreign operators may be found in the Manual of Procedures for Operations Inspection, Certification and Continued Surveillance *(Doc 8335).*

2.2.3 Operations manual

2.2.3.1 An operator shall make available, for the use and guidance of operations personnel concerned, an operations manual constructed using the guidance contained in Attachment H. The operations manual shall be amended or revised as is necessary to ensure that the information contained therein is kept up to date. All such amendments or revisions shall be notified to all personnel that are required to use this manual.

2.2.3.2 The State of the Operator shall establish a requirement for the operator to provide a copy of the operations manual together with all amendments and/or revisions, for review and acceptance and, where required, approval. The operator shall incorporate in the operations manual such mandatory material as the State of the Operator may require.

Note 1.— Guidance for the organization and contents of an operations manual is provided in Attachment H.

Note 2.— Specific items in an operations manual require the approval of the State of the Operator in accordance with the Standards in 2.2.8, 4.1.3, 7.3.1 and 10.3.

2.2.4 Operating instructions — general

2.2.4.1 An operator shall ensure that all operations personnel are properly instructed in their particular duties and responsibilities and the relationship of such duties to the operation as a whole.

2.2.4.2 A helicopter rotor shall not be turned under power, for the purpose of flight, without a qualified pilot at the controls. The operator shall provide appropriately specific training and procedures to be followed for all personnel, other than qualified pilots, who are likely to carry out the turning of a rotor under power for purposes other than flight.

2.2.4.3 **Recommendation.—** *The operator should issue operating instructions and provide information on helicopter climb performance with all engines operating to enable the pilot-in-command to determine the climb gradient that can be achieved during the take-off and initial climb phase for the existing take-off conditions and intended take-off technique. This information should be based on the helicopter manufacturer's or other data, acceptable to the State of the Operator, and should be included in the operations manual.*

2.2.5 In-flight simulation of emergency situations

An operator shall ensure that when passengers or cargo are being carried, no emergency or abnormal situations shall be simulated.

2.2.6 Checklists

The checklists provided in accordance with 4.1.4 shall be used by flight crews prior to, during and after all phases of operations, and in emergency, to ensure compliance with the operating procedures contained in the aircraft operating manual, the flight manual or other documents associated with the certificate of airworthiness and otherwise in the operations manual. The design and utilization of checklists shall observe Human Factors principles.

Note.— Guidance material on the application of Human Factors principles can be found in the Human Factors Training Manual *(Doc 9683).*

2.2.7 Minimum flight altitudes (operations under IFR)

2.2.7.1 An operator shall be permitted to establish minimum flight altitudes for those routes flown for which minimum flight altitudes have been established by the State flown over or the responsible State, provided that they shall not be less than those established by that State, unless specifically approved.

2.2.7.2 An operator shall specify the method by which it is intended to determine minimum flight altitudes for operations conducted over routes for which minimum flight altitudes have not been established by the State flown over, or the responsible State, and shall include this method in the operations manual. The minimum flight altitudes determined in accordance with the above method shall not be lower than specified in Annex 2.

2.2.7.3 **Recommendation.—** *The method for establishing the minimum flight altitudes should be approved by the State of the Operator.*

2.2.7.4 **Recommendation.—** *The State of the Operator should approve such method only after careful consideration of the probable effects of the following factors on the safety of the operation in question:*

a) the accuracy and reliability with which the position of the helicopter can be determined;

b) the inaccuracies in the indications of the altimeters used;

c) the characteristics of the terrain (e.g. sudden changes in the elevation);

d) the probability of encountering unfavourable meteorological conditions (e.g. severe turbulence and descending air currents);

e) possible inaccuracies in aeronautical charts; and

f) airspace restrictions.

2.2.8 Heliport operating minima (operations under IFR)

2.2.8.1 The State of the Operator shall require that the operator establish heliport operating minima for each heliport to be used in operations and shall approve the method of determination of such minima. Such minima shall not be lower than any that may be established for such heliports by the State in which the heliport is located, except when specifically approved by that State.

Note.— This Standard does not require the State in which the heliport is located to establish heliport operating minima.

2.2.8.2 The State of the Operator shall require that in establishing the heliport operating minima which will apply to any particular operation, full account shall be taken of:

a) the type, performance and handling characteristics of the helicopter;

b) the composition of the flight crew, their competence and experience;

c) the physical characteristics of the heliport, and direction of approach;

d) the adequacy and performance of the available visual and non-visual ground aids;

e) the equipment available on the helicopter for the purpose of navigation and/or control of the flight path during the approach to landing and the missed approach;

f) the obstacles in the approach and missed approach areas and the obstacle clearance altitude/height for the instrument approach procedures;

g) the means used to determine and report meteorological conditions; and

h) the obstacles in the climb-out areas and necessary clearance margins.

2.2.8.3 Category II and Category III instrument approach and landing operations shall not be authorized unless RVR information is provided.

2.2.8.4 **Recommendation.—** *For instrument approach and landing operations, heliport operating minima below 800 m visibility should not be authorized unless RVR information or an accurate measurement or observation of visibility is provided.*

Note.— Guidance on the operationally desirable and currently attainable accuracy of measurement or observation is given in Annex 3, Attachment B.

2.2.9 Fuel and oil records

2.2.9.1 An operator shall maintain fuel and oil records to enable the State of the Operator to ascertain that, for each flight, the requirements of 2.3.6 have been complied with.

2.2.9.2 Fuel and oil records shall be retained by the operator for a period of three months.

2.2.10 Crew

2.2.10.1 *Pilot-in-command.* For each flight, the operator shall designate one pilot to act as pilot-in-command.

2.2.10.2 *Flight time, flight duty periods and rest periods.* An operator shall formulate rules to limit flight time and flight duty periods and for the provision of adequate rest periods for all its crew members. These rules shall be in accordance with the regulations established by the State of the Operator, or approved by that State, and included in the operations manual.

Note.— Guidance on the establishment of limitations is given in Attachment C.

2.2.10.3 An operator shall maintain current records of the flight time, flight duty periods and rest periods of all its crew members.

2.2.11 Passengers

2.2.11.1 An operator shall ensure that passengers are made familiar with the location and use of:

a) seat belts or harnesses;

b) emergency exits;

c) life jackets, if the carriage of life jackets is prescribed;

d) oxygen dispensing equipment, if the provision of oxygen for the use of passengers is prescribed; and

e) other emergency equipment provided for individual use, including passenger emergency briefing cards.

2.2.11.2 The operator shall ensure that the passengers are informed of the location and general manner of use of the principal emergency equipment carried for collective use.

2.2.11.3 In an emergency during flight, passengers shall be instructed in such emergency action as may be appropriate to the circumstances.

2.2.11.4 The operator 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 a helicopter shall be secured in their seats by means of the seat belts or harnesses provided.

2.2.12 Over-water flights

All helicopters on flights over water in a hostile environment in accordance with 4.5.1 shall be certificated for ditching. Sea state shall be an integral part of ditching information.

2.3 Flight preparation

2.3.1 A flight, or series of flights, shall not be commenced until flight preparation forms have been completed certifying that the pilot-in-command is satisfied that:

a) the helicopter is airworthy;

b) the instruments and equipment prescribed in Chapter 4, for the particular type of operation to be undertaken, are installed and are sufficient for the flight;

c) a maintenance release as prescribed in 6.7 has been issued in respect of the helicopter;

d) the mass of the helicopter 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;

f) a check has been completed indicating that the operating limitations of Chapter 3 can be complied with for the flight to be undertaken; and

g) the Standards of 2.3.3 relating to operational flight planning have been complied with.

Note.— 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.

2.3.2 Completed flight preparation forms shall be kept by an operator for a period of three months.

2.3.3 Operational flight planning

2.3.3.1 An operational flight plan shall be completed for every intended flight or series of flights, and approved by the pilot-in-command, and shall be lodged with the appropriate authority. The operator shall determine the most efficient means of lodging the operational flight plan.

2.3.3.2 The operations manual shall describe the content and use of the operational flight plan.

2.3.4 Alternate heliports

2.3.4.1 *Take-off alternate heliport*

2.3.4.1.1 A take-off alternate heliport shall be selected and specified in the operational flight plan if the weather conditions at the heliport of departure are at or below the applicable heliport operating minima.

2.3.4.1.2 For a heliport to be selected as a take-off alternate, the available information shall indicate that, at the estimated time of use, the conditions will be at or above the heliport operating minima for that operation.

2.3.4.2 *Destination alternate heliport*

2.3.4.2.1 For a flight to be conducted in accordance with IFR, at least one destination alternate shall be specified in the operational flight plan and the flight plan, unless:

a) the duration of the flight and the meteorological conditions prevailing are such that there is reasonable certainty that, at the estimated time of arrival at the heliport of intended landing, and for a reasonable period before and after such time, the approach and landing may be made under visual meteorological conditions as prescribed by the State of the Operator; or

b) the heliport of intended landing is isolated and no suitable alternate is available. A point of no return (PNR) shall be determined.

2.3.4.2.2 For a heliport to be selected as a destination alternate, the available information shall indicate that, at the estimated time of use, the conditions will be at or above the heliport operating minima for that operation.

2.3.4.2.3 **Recommendation.**— *For a flight departing to a destination which is forecast to be below the heliport operating minima, two destination alternates should be selected. The first destination alternate should be at or above the heliport operating minima for destination and the second at or above the heliport operating minima for alternate.*

2.3.4.3 Suitable offshore alternates shall be specified subject to the following:

a) the offshore alternates shall be used only after 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 alternates;

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.

2.3.4.4 **Recommendation.**— *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.*

2.3.5 Weather conditions

2.3.5.1 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 or in the intended area of operations under VFR will, at the appropriate time, be such as to render compliance with these rules possible.

Note.— When a flight is conducted in accordance with VFR, the use of night vision imaging systems (NVIS) or other vision enhancing systems does not diminish the requirement to comply with the provisions of 2.3.5.1.

2.3.5.2 A flight to be conducted in accordance with IFR shall not be commenced unless the information is available which indicates that conditions at the heliport of intended landing or, when an alternate is required, 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.

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

2.3.5.4 A flight to be planned or expected to operate in suspected or known ground icing conditions shall not be commenced unless the helicopter 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 helicopter is kept in an airworthy condition prior to take-off.

Note.— Guidance material is given in the Manual of Aircraft Ground De-icing/Anti-icing Operations *(Doc 9640).*

2.3.6 Fuel and oil supply

2.3.6.1 *All helicopters.* A flight shall not be commenced unless, taking into account both the meteorological conditions and any delays that are expected in flight, the helicopter carries sufficient fuel and oil to ensure that it can safely complete the flight. In addition, a reserve shall be carried to provide for contingencies.

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 sufficient to allow the helicopter:

a) to fly to the heliport to which the flight is planned;

b) to fly thereafter for a period of 20 minutes at best-range speed; and

c) to have an additional amount of fuel, sufficient to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the State of the Operator.

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

2.3.6.3.1 When an alternate is not required, in terms of 2.3.4.2.1 a), to fly to the heliport to which the flight is planned, and thereafter:

a) to fly 30 minutes at holding speed at 450 m (1 500 ft) above the destination heliport under standard temperature conditions and approach and land; and

b) to have an additional amount of fuel, sufficient to provide for the increased consumption on the occurrence of any of the potential contingencies specified 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 to which the flight is planned, and thereafter:

a) to fly to the alternate specified in the flight plan; and then

b) 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) to have an additional amount of fuel, sufficient to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the State of the Operator.

2.3.6.3.3 When no suitable alternate is available, in terms of 2.3.4.2.1 (e.g. the destination is isolated), sufficient fuel shall be carried to enable the helicopter to fly to the destination to which the flight is planned and thereafter for a period that will, based on geographic and environmental considerations, enable a safe landing to be made.

2.3.6.4 In computing the fuel and oil required in 2.3.6.1, 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 prescribed in the operations manual for loss of pressurization, where applicable, or failure of one power-unit 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 2.3.6 precludes amendment of a flight plan in flight in order to replan the flight to another heliport, provided that the requirements of 2.3.6 can be complied with from the point where the flight has been replanned.

2.3.7 Refuelling with passengers on board or rotors turning

Recommendation.— *A helicopter should not be refuelled when passengers are embarking, on board, disembarking or when the rotor is turning unless the operator is granted specific authorization by the State of the Operator setting forth the conditions under which such fuelling may be carried out.*

Note 1.— 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.*

Note 2.— Additional precautions are required when refuelling with fuels other than aviation kerosene or when refuelling results in a mixture of aviation kerosene with other aviation turbine fuels, or when an open line is used.

2.3.8 Oxygen supply

Note.— Approximate altitudes in the Standard Atmosphere corresponding to the values of absolute pressure used in the text are as follows:

Absolute pressure	Metres	Feet
700 hPa	*3 000*	*10 000*
620 hPa	*4 000*	*13 000*
376 hPa	*7 600*	*25 000*

2.3.8.1 A flight to be operated at flight altitudes at which the atmospheric pressure in personnel compartments will be less than 700 hPa shall not be commenced unless sufficient stored breathing oxygen is carried to supply:

a) all crew members and 10 per cent of the passengers for any period in excess of 30 minutes that the pressure in compartments occupied by them will be between 700 hPa and 620 hPa;

b) the crew and passengers for any period that the atmospheric pressure in compartments occupied by them will be less than 620 hPa.

2.3.8.2 A flight to be operated with a pressurized helicopter shall not be commenced unless a sufficient quantity of stored breathing oxygen is carried to supply all the 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 the helicopter is operated at flight altitudes at which the atmospheric pressure is more than 376 hPa and cannot descend safely to a flight altitude at which the atmospheric pressure is equal to 620 hPa within four minutes, there shall be no less than a 10-minute supply for the occupants of the passenger compartment.

2.4 In-flight procedures

2.4.1 Heliport operating minima

2.4.1.1 A flight shall not be continued towards the heliport of intended landing, unless the latest available information indicates that at the expected time of arrival, a landing can be effected at that heliport, or at least one alternate heliport, in compliance with the operating minima established in accordance with 2.2.8.1.

2.4.1.2 An instrument approach shall not be continued beyond the outer marker fix in case of precision approach, or below 300 m (1 000 ft) above the heliport in case of non-precision approach, unless the reported visibility or controlling RVR is above the specified minimum.

2.4.1.3 If, after passing the outer marker fix in case of precision approach, or after descending below 300 m (1 000 ft) above the heliport in case of non-precision approach, 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, a helicopter shall not continue its approach-to-land at any heliport beyond a point at which the limits of the operating minima specified for that heliport would be infringed.

2.4.2 Meteorological observations

Note.— The procedures for making meteorological observations on board aircraft in flight and for recording and reporting them are contained in Annex 3, the PANS-ATM (Doc 4444) and the appropriate Regional Supplementary Procedures *(Doc 7030).*

2.4.3 Hazardous flight conditions

Hazardous flight conditions encountered, other than those associated with meteorological conditions, shall be reported to the appropriate aeronautical station as soon as possible. The reports so rendered shall give such details as may be pertinent to the safety of other aircraft.

2.4.4 Flight crew members at duty stations

2.4.4.1 *Take-off and landing.* All flight crew members required to be on flight deck duty shall be at their stations.

2.4.4.2 *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 helicopter or for physiological needs.

2.4.4.3 *Seat belts.* All flight crew members shall keep their seat belt fastened when at their stations.

2.4.4.4 *Safety harness.* Any flight crew member occupying a pilot's seat shall keep the safety harness fastened during the take-off and landing phases; all other flight crew members shall keep their safety harness fastened during the take-off and landing phases unless the shoulder straps interfere with the performance of their duties, in which case the shoulder straps may be unfastened but the seat belt must remain fastened.

Note.— Safety harness includes shoulder straps and a seat belt which may be used independently.

2.4.5 Use of oxygen

All flight crew members, when engaged in performing duties essential to the safe operation of a helicopter in flight, shall use breathing oxygen continuously whenever the circumstances prevail for which its supply has been required in 2.3.8.1 or 2.3.8.2.

2.4.6 Safeguarding of cabin crew and passengers in pressurized aircraft in the event of loss of pressurization

Recommendation.— *Cabin crew should be safeguarded so as to ensure reasonable probability of their retaining consciousness during any emergency descent which may be necessary in the event of loss of pressurization and, in addition, they should have such means of protection as will enable them to administer first aid to passengers during stabilized flight following the emergency. Passengers should be safeguarded by such devices or operational procedures as will ensure reasonable probability of their surviving the effects of hypoxia in the event of loss of pressurization.*

Note.— It is not envisaged that cabin crew will always be able to provide assistance to passengers during emergency descent procedures which may be required in the event of loss of pressurization.

2.4.7 Instrument flight procedures

2.4.7.1 One or more instrument approach procedures to serve each final approach and take-off area or heliport utilized for instrument flight operations shall be approved and promulgated by the State in which the heliport is located, or by the State which is responsible for the heliport when located outside the territory of any State.

2.4.7.2 All helicopters operated in accordance with IFR shall comply with the instrument approach procedures approved by the State in which the heliport is located, or by the State which is responsible for the heliport when located outside the territory of any State.

Note 1.— Operational procedures recommended for the guidance of operations personnel involved in instrument flight operations are described in PANS-OPS (Doc 8168), Volume I.

Note 2.— Criteria for the construction of instrument flight procedures for the guidance of procedure specialists are provided in PANS-OPS (Doc 8168), Volume II.

2.4.8 Helicopter operating procedures for noise abatement

Recommendation.— *An operator should ensure that take-off and landing procedures take into account the need to minimize the effect of helicopter noise.*

2.5 Duties of pilot-in-command

2.5.1 The pilot-in-command shall be responsible for the operation and safety of the helicopter and for the safety of all crew members, passengers and cargo on board, from the moment the engine(s) are started until the helicopter finally comes to rest at the end of the flight, with the engine(s) shut down and the rotor blades stopped.

2.5.2 The pilot-in-command shall ensure that the checklists specified in 2.2.6 are complied with in detail.

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 helicopter, resulting in serious injury or death of any person or substantial damage to the helicopter or property.

Note.— A definition of the term "serious injury" is contained in Annex 13.

2.5.4 The pilot-in-command shall be responsible for reporting all known or suspected defects in the helicopter, to the operator, at the termination of the flight.

2.5.5 The pilot-in-command shall be responsible for the journey log book or the general declaration containing the information listed in 9.4.1.

Note.— By virtue of Resolution A10-36 of the Tenth Session of the Assembly (Caracas, June–July 1956) "the general declaration, [described in Annex 9] when prepared so as to contain all the information required by Article 34 [of the Convention on International Civil Aviation] with respect to the journey log book, may be considered by Contracting States to be an acceptable form of journey log book".

2.6 Duties of flight operations officer/flight dispatcher

2.6.1 A flight operations officer/flight dispatcher in conjunction with a method of control and supervision of flight operations in accordance with 2.2.1.3 shall:

a) assist the pilot-in-command in flight preparation and provide the relevant information;

b) assist the pilot-in-command in preparing the operational and ATS flight plans, sign when applicable and file the ATS flight plan with the appropriate ATS unit; and

c) furnish the pilot-in-command while in flight, by appropriate means, with information which may be necessary for the safe conduct of the flight.

2.6.2 In the event of an emergency, a flight operations officer/flight dispatcher shall:

a) initiate such procedures as outlined in the operations manual while avoiding taking any action that would conflict with ATC procedures; and

b) convey safety-related information to the pilot-in-command that may be necessary for the safe conduct of the flight, including information related to any amendments to the flight plan that become necessary in the course of the flight.

Note.— It is equally important that the pilot-in-command also convey similar information to the flight operations officer/flight dispatcher during the course of a flight, particularly in the context of emergency situations.

2.7 Carry-on baggage

The operator shall ensure that all baggage carried onto a helicopter and taken into the passenger cabin is adequately and securely stowed.

CHAPTER 4. HELICOPTER INSTRUMENTS, EQUIPMENT, AND FLIGHT DOCUMENTS

Note.— Specifications for the provision of helicopter communication and navigation equipment are contained in Chapter 5.

4.1 General

4.1.1 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 helicopters according to the helicopter 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 accepted by the State of Registry.

4.1.2 A helicopter shall carry a certified true copy of the air operator certificate specified in 2.2.1, and a copy of the operations specifications relevant to the helicopter type, issued in conjunction with the certificate. When the certificate and the associated operations specifications are issued by the State of the Operator in a language other than English, an English translation shall be included.

Note.— Provisions for the content of the air operator certificate and its associated operations specifications are contained in 2.2.1.5 and 2.2.1.6.

4.1.3 The operator shall include in the operations manual a minimum equipment list (MEL), approved by the State of the Operator which will enable the pilot-in-command to determine whether a flight may be commenced or continued from any intermediate stop should any instrument, equipment or systems become inoperative. Where the State of the Operator is not the State of Registry, the State of the Operator shall ensure that the MEL does not affect the helicopter's compliance with the airworthiness requirements applicable in the State of Registry.

Note.— Attachment E contains guidance on the minimum equipment list.

4.1.4 The operator shall make available to operations staff and crew members an aircraft operating manual, for each aircraft type operated, containing the normal, abnormal and emergency procedures relating to the operation of the aircraft. The manual shall include details of the aircraft systems and of the checklists to be used. The design of the manual shall observe Human Factors principles. The manual shall be easily accessible to the flight crew during all flight operations.

Note.— Guidance material on the application of Human Factors principles can be found in the Human Factors Training Manual *(Doc 9683).*

4.2 All helicopters on all flights

4.2.1 A helicopter shall be equipped with instruments that will enable the flight crew to control the flight path of the helicopter, carry out any required procedural manoeuvres and observe the operating limitations of the helicopter in the expected operating conditions.

4.2.2 A helicopter shall be equipped with:

a) one or more first-aid kits as appropriate to the number of passengers the helicopter is authorized to carry;

Note.— Guidance on the contents of first-aid kits is given in Attachment D.

b) portable fire extinguishers of a type which, when discharged, will not cause dangerous contamination of the air within the helicopter. At least one shall be located in:

1) the pilot's compartment; and

2) each passenger compartment that is separate from the pilot's compartment and that is not readily accessible to the flight crew.

Note.— Any portable fire extinguisher so fitted in accordance with the certificate of airworthiness of the helicopter may count as one prescribed.

c) 1) a seat or berth for each person over an age to be determined by the State of the Operator;

2) a seat belt for each seat and restraining belts for each berth; and

3) a safety harness for each flight crew seat. The safety harness for each pilot seat shall incorporate a device which will automatically restrain the occupant's torso in the event of rapid deceleration.

Recommendation.— *When dual controls are fitted, the safety harness for each pilot seat should incorporate a restraining device to prevent the upper body of an incapacitated occupant from interfering with the flight controls.*

Note 1.— Depending on the design, the lock on an inertia reel device may suffice for this purpose.

Note 2.— Safety harness includes shoulder straps and a seat belt which may be used independently.

d) means of ensuring that the following information and instructions are conveyed to passengers:

1) when seat belts or harnesses are to be fastened;

2) when and how oxygen equipment is to be used if the carriage of oxygen is required;

3) restrictions on smoking;

4) location and use of life jackets or equivalent individual flotation devices where their carriage is required; and

5) location and method of opening emergency exits; and

e) if fuses are used, spare electrical fuses of appropriate ratings for replacement of those accessible in flight.

4.2.3 A helicopter shall carry:

a) the operations manual prescribed in 2.2.2, or those parts of it that pertain to flight operations;

b) the helicopter flight manual for the helicopter, or other documents containing performance data required for the application of Chapter 3 and any other information necessary for the operation of the helicopter within the terms of its certificate of airworthiness, unless these data are available in the operations manual; and

CHAPTER 5. HELICOPTER COMMUNICATION AND NAVIGATION EQUIPMENT

5.1 Communication equipment

5.1.1 A helicopter shall be provided with radio communication equipment capable of:

a) conducting two-way communication for heliport control purposes;

b) receiving meteorological information at any time during flight;

c) conducting two-way communication at any time during flight with at least one aeronautical station and with such other aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

Note.— The requirements of 5.1.1 are considered fulfilled if the ability to conduct the communications specified therein is established during radio propagation conditions which are normal for the route.

5.1.2 The radio communication equipment required in accordance with 5.1.1 shall provide for communications on the aeronautical emergency frequency.

5.1.3 For flights in defined portions of airspace or on routes where an RCP type has been prescribed, a helicopter shall, in addition to the requirements specified in 5.1.1:

a) be provided with communication equipment which will enable it to operate in accordance with the prescribed RCP type(s); and

b) be authorized by the State of the Operator for operations in such airspace.

Note.— Information on RCP and associated procedures, and guidance concerning the approval process, are contained in the Manual on Required Communications Performance (RCP) *(Doc 9869). This document also contains references to other documents produced by States and international bodies concerning communication systems and RCP.*

5.2 Navigation equipment

5.2.1 A helicopter shall be provided with navigation equipment which will enable it to proceed:

a) in accordance with its operational flight plan; and

b) in accordance with the requirements of air traffic services;

except when, if not so precluded by the appropriate authority, navigation for flights under VFR is accomplished by visual reference to landmarks.

5.2.2 For operations where a navigation specification for performance-based navigation has been prescribed, a helicopter shall, in addition to the requirements specified in 5.2.1:

a) be provided with navigation equipment which will enable it to operate in accordance with the prescribed navigation specification(s); and

b) be authorized by the State of the Operator for such operations.

Note.— Information on performance-based navigation, and guidance concerning the implementation and operational approval process, are contained in the Performance-based Navigation Manual *(Doc 9613). This document also contains a comprehensive list of references to other documents produced by States and international bodies concerning navigation systems.*

5.2.3 The helicopter 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 helicopter to navigate in accordance with 5.2.1 and, where applicable, 5.2.2.

5.2.4 On flights in which it is intended to land in instrument meteorological conditions, a helicopter shall be provided with appropriate navigation equipment providing guidance to a point from which a visual landing can be effected. This equipment shall be capable of providing such guidance at each heliport at which it is intended to land in instrument meteorological conditions and at any designated alternate heliports.

5.3 Installation

The equipment installation shall be such that the failure of any single unit required for either communications or navigation purposes or both will not result in the failure of another unit required for communications or navigation purposes.

CHAPTER 7. HELICOPTER FLIGHT CREW

7.1 Composition of the flight crew

7.1.1 The number and composition of the flight crew shall not be less than that specified in the operations manual. The flight crews shall include flight crew members in addition to the minimum numbers specified in the flight manual or other documents associated with the certificate of airworthiness, when necessitated by considerations related to the type of helicopter used, the type of operation involved and the duration of flight between points where flight crews are changed.

7.1.2 The flight crew shall include at least one member authorized by the State of Registry to operate the type of radio transmitting equipment to be used.

Note.— Some States have dispensed with the system of issuing radio licences.

7.2 Flight crew member emergency duties

An operator shall, for each type of helicopter, assign to all flight crew members the necessary functions they are to perform in an emergency or in a situation requiring emergency evacuation. Annual training in accomplishing these functions shall be contained in the operator's training programme and shall include instruction in the use of all emergency and life-saving equipment required to be carried, and drills in the emergency evacuation of the helicopter.

7.3 Flight crew member training programmes

7.3.1 An 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:

a) include ground and flight training facilities and properly qualified instructors as determined by the State of the Operator;

b) consist of ground and flight training for the type(s) of helicopter on which the flight crew member serves;

c) include proper flight crew coordination and training for all types of emergency and abnormal situations or procedures caused by powerplant, transmission, rotor, airframe or systems malfunctions, fire or other abnormalities;

d) include training in knowledge and skills related to the visual and instrument flight procedures for the intended area of operation, human performance and threat and error management, the transport of dangerous goods and, where applicable, procedures specific to the environment in which the helicopter is to be operated;

e) ensure that all flight crew members know the functions for which they are responsible and the relation of these functions to the functions of other crew members, particularly in regard to abnormal or emergency procedures; and

f) be given on a recurrent basis, as determined by the State of the Operator and shall include an assessment of competence.

Note 1.— Paragraph 2.2.5 prohibits the in-flight simulation of emergency or abnormal situations when passengers or cargo are being carried.

Note 2.— Flight training may, to the extent deemed appropriate by the State of the Operator, be given in flight simulation training devices approved by the State for that purpose.

Note 3.— The scope of the recurrent training required by 7.2 and 7.3 may be varied and need not be as extensive as the initial training given in a particular type of helicopter.

Note 4.— The use of correspondence courses and written examinations as well as other means may, to the extent deemed feasible by the State of the Operator, be utilized in meeting the requirements for periodic ground training.

Note 5.— Provisions for training in the transport of dangerous goods are contained in Annex 18.

Note 6.— Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the Human Factors Training Manual *(Doc 9683).*

Note 7.— Information for pilots and flight operations personnel 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.

Note 8.— Guidance material to design flight crew training programmes can be found in the manual Preparation of an Operations Manual *(Doc 9376).*

Note 9.— Guidance material on the different means used to assess competence can be found in the Attachment to Chapter 2 of the PANS-TRG (Doc 9868).

7.3.2 The requirement for recurrent flight training in a particular type of helicopter shall be considered fulfilled by:

a) the use, to the extent deemed feasible by the State of the Operator, of flight simulation training devices approved by that State for that purpose; or

b) the completion within the appropriate period of the proficiency check required by 7.4.4 in that type of helicopter.

7.4 Qualifications

Note.— See the Manual of Procedures for the Establishment of a State's Personnel Licensing System *(Doc 9379) for guidance of a general nature on cross-crew qualification, mixed-fleet flying and cross-credit.*

7.4.1 Recent experience — pilot-in-command

7.4.1.1 An operator shall not assign a pilot to act as pilot-in-command of a type or variant of a type of helicopter unless, on the same type of helicopter within the preceding 90 days, that pilot has made at least three take-offs and landings.

7.4.1.2 When a pilot-in-command is flying several variants of the same type of helicopter or different types of helicopters with similar characteristics in terms of operating procedures, systems and handling, the State shall decide under which conditions the requirements of 7.4.1.1 for each variant or each type of helicopter can be combined.

CHAPTER 8. FLIGHT OPERATIONS OFFICER/FLIGHT DISPATCHER

8.1 When the State of the Operator requires that a flight operations officer/flight dispatcher, employed in conjunction with an approved method of control and supervision of flight operations be licensed, that flight operations officer/flight dispatcher shall be licensed in accordance with the provisions of Annex 1.

8.2 In accepting proof of qualifications other than the option of holding of a flight operations officer/flight dispatcher licence, the State of the Operator, in accordance with the approved method of control and supervision of flight operations, shall require that, as a minimum, such persons meet the requirements specified in Annex 1 for the flight operations officer/flight dispatcher licence.

8.3 A flight operations officer/flight dispatcher shall not be assigned to duty unless that person has:

a) satisfactorily completed an operator-specific training course that addresses all the specific components of its approved method of control and supervision of flight operations specified in 2.2.1.3;

Note.— Guidance on the composition of such training syllabi is provided in the Training Manual *(Doc 7192), Part D-3* — Flight Operations Officers/Flight Dispatchers.

b) made within the preceding 12 months, at least a one-way qualification flight in a helicopter over any area for which that person is authorized to exercise flight supervision. The flight shall include landings at as many heliports as practicable;

Note.— For the purpose of the qualification flight, the flight operations officer/flight dispatcher must be able to monitor the flight crew intercommunication system and radio communications, and be able to observe the actions of the flight crew.

c) demonstrated to the operator a knowledge of:

1) the contents of the operations manual described in Attachment H;

2) the radio equipment in the helicopters used; and

3) the navigation equipment in the helicopters used;

d) demonstrated to the operator a knowledge of the following details concerning operations for which the officer is responsible and areas in which that individual is authorized to exercise flight supervision:

1) the seasonal meteorological conditions and the sources of meteorological information;

2) the effects of meteorological conditions on radio reception in the helicopters used;

3) the peculiarities and limitations of each navigation system which is used by the operation; and

4) the helicopter loading instructions;

e) satisfied the operator as to knowledge and skills related to human performance as they apply to dispatch duties; and

f) demonstrated to the operator the ability to perform the duties specified in 2.6.

8.4 **Recommendation.**— *A flight operations officer/flight dispatcher assigned to duty should maintain complete familiarization with all features of the operations which are pertinent to such duties, including knowledge and skills related to human performance.*

Note.— Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the Human Factors Training Manual *(Doc 9683).*

8.5 **Recommendation.**— *A flight operations officer/flight dispatcher should not be assigned to duty after 12 consecutive months of absence from such duty, unless the provisions of 8.3 are met.*

CHAPTER 9. MANUALS, LOGS AND RECORDS

Note.— The following additional manuals, logs and records are associated with this Annex but are not included in this chapter:

Fuel and oil records — see 2.2.9

Maintenance records — see 6.8

Flight time, flight duty periods and rest periods records — see 2.2.10.3

Flight preparation forms — see 2.3

Operational flight plan — see 2.3.3

Pilot-in-command operational qualification records — see 7.4.3.4.

9.1 Flight manual

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

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

9.2 Operator's maintenance control manual

The operator's maintenance control manual provided in accordance with 6.2, which may be issued in separate parts, shall contain the following information:

a) a description of the procedures required by 6.1.1 including, when applicable:

   1) a description of the administrative arrangements between the operator and the approved maintenance organization;

   2) a description of the maintenance procedures and the procedures for completing and signing a maintenance release when maintenance is based on a system other than that of an approved maintenance organization;

b) names and duties of the person or persons required by 6.1.4;

c) a reference to the maintenance programme required by 6.3.1;

d) a description of the methods used for the completion and retention of the operator's maintenance records required by 6.4;

e) a description of the procedures for monitoring, assessing and reporting maintenance and operational experience required by 6.5.1;

f) a description of the procedures for complying with the service information reporting requirements of Annex 8, Part II, 4.2.3 f) and 4.2.4;

g) a description of procedures for assessing continuing airworthiness information and implementing any resulting actions, as required by 6.5.2;

h) a description of the procedures for implementing action resulting from mandatory continuing airworthiness information;

i) a description of establishing and maintaining a system of analysis and continued monitoring of the performance and efficiency of the maintenance programme, in order to correct any deficiency in that programme;

j) a description of helicopter types and models to which the manual applies;

k) a description of procedures for ensuring that unserviceabilities affecting airworthiness are recorded and rectified;

l) a description of the procedures for advising the State of Registry of significant in-service occurrences;

m) a description of procedures to control the leasing of aircraft and related aeronautical products; and

n) a description of the maintenance control manual amendment procedures.

9.3 Maintenance programme

9.3.1 A maintenance programme for each helicopter as required by 6.3 shall contain the following information:

a) maintenance tasks and the intervals at which these are to be performed, taking into account the anticipated utilization of the helicopter;

b) when applicable, a continuing structural integrity programme;

c) procedures for changing or deviating from a) and b) above; and

d) when applicable, condition monitoring and reliability programme descriptions for helicopter systems, components, power transmissions, rotors and powerplants.

9.3.2 Maintenance tasks and intervals that have been specified as mandatory in approval of the type design shall be identified as such.

9.3.3 **Recommendation.**— *The maintenance programme should be based on maintenance programme information made available by the State of Design or by the organization responsible for the type design, and any additional applicable experience.*

9.4 Journey log book

9.4.1 **Recommendation.**— *The helicopter journey log book should contain the following items and the corresponding Roman numerals:*

I — Helicopter nationality and registration.

II — Date.

CHAPTER 5. HELICOPTER COMMUNICATION AND NAVIGATION EQUIPMENT

5.1 Communication equipment

5.1.1 A helicopter to be operated in accordance with IFR 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.

Note.— The requirements of 5.1.1 are considered fulfilled if the ability to conduct the communications specified therein is established during radio propagation conditions which are normal for the route.

5.1.2 When compliance with 5.1.1 requires that more than one communication equipment unit be provided, each shall be independent of the other or others to the extent that a failure in any one will not result in failure of any other.

5.1.3 A helicopter 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.

5.1.4 A helicopter to be operated on a flight to which the provisions of 4.3 or 4.4 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.

5.1.5 **Recommendation.—** *The radio communication equipment required in accordance with 5.1.1 to 5.1.4 should provide for communication on the aeronautical emergency frequency.*

5.1.6 For flights in defined portions of airspace or on routes where an RCP type has been prescribed, a helicopter shall, in addition to the requirements specified in 5.1.1 to 5.1.5:

a) be provided with communication equipment which will enable it to operate in accordance with the prescribed RCP type(s); and

b) be authorized by the State of Registry for operations in such airspace.

Note.— Information on RCP and associated procedures, and guidance concerning the approval process, are contained in the Manual on Required Communications Performance (RCP) *(Doc 9869). This document also contains references to other documents produced by States and international bodies concerning communication systems and RCP.*

5.2 Navigation equipment

5.2.1 A helicopter shall be provided with navigation equipment which will enable it to proceed:

a) in accordance with its flight plan; and

b) in accordance with the requirements of air traffic services;

except when, if not so precluded by the appropriate authority, navigation for flights under VFR is accomplished by visual reference to landmarks. For international general aviation, landmarks shall be located at least every 110 km (60 NM).

5.2.2 For operations where a navigation specification for performance-based navigation has been prescribed, a helicopter shall, in addition to the requirements specified in 5.2.1:

a) be provided with navigation equipment which will enable it to operate in accordance with the prescribed navigation specification(s); and

b) be authorized by the State of the Operator for such operations.

Note.— Information on performance-based navigation and associated procedures, and guidance concerning the implementation and operational approval process, are contained in the Performance-based Navigation Manual *(Doc 9613). This document also contains a comprehensive list of references to other documents produced by States and international bodies concerning navigation systems.*

5.2.3 The helicopter 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 helicopter to navigate in accordance with 5.2.1 and, where applicable, 5.2.2.

Note.— For international general aviation, this requirement may be met by means other than the duplication of equipment.

5.2.4 On flights in which it is intended to land in instrument meteorological conditions, a helicopter shall be provided with appropriate navigation equipment providing guidance to a point from which a visual landing can be effected. This equipment shall be capable of providing such guidance at each heliport at which it is intended to land in instrument meteorological conditions and at any designated alternate heliports.

APPENDIX 1. SAFETY OVERSIGHT OF AIR OPERATORS

(See Section II, Chapter 2, 2.2.1.8)

1. Primary aviation legislation

1.1 The State of the Operator shall enact and implement laws that enable the State to regulate civil aviation through a Civil Aviation Authority or equivalent organization established for that purpose. The legislation shall empower the authority to discharge the oversight responsibilities of the State. The legislation shall provide for the making of regulations, the certification and continued supervision of air operators, and the resolution of safety issues identified by the authority.

Note.— The term authority as used in this Appendix refers to the Civil Aviation Authority as well as equivalent organizations, including inspectors and staff.

1.2 The State of the Operator shall ensure that the laws of the State require air operators to provide the authority with access to their personnel records, aircraft, operations and facilities and associated records for the purpose of certification and continued surveillance.

Note.— Guidance on the critical elements of a system that enables a State to discharge its responsibility for inspection, certification and continued surveillance of operations is contained in the Safety Oversight Manual *(Doc 9734)*, Part A — The Establishment and Management of a State's Safety Oversight System, *the* Manual of Procedures for Operations Inspection, Certification and Continued Surveillance *(Doc 8335), and the* Airworthiness Manual *(Doc 9760).*

2. Specific operating regulations

2.1 The State of the Operator shall adopt regulations that provide for the certification and continued surveillance of aircraft operations and the maintenance of aircraft in conformity with the Annexes to the Convention on International Civil Aviation.

2.2 The State of the Operator shall ensure that its regulations are sufficiently comprehensive, detailed, and current with respect to changes in technology and the operating environment to ensure that satisfactory compliance will result in an acceptable level of safety for the operations undertaken.

3. CAA structure and safety oversight functions

3.1 The State of the Operator shall ensure that the authority is responsible for the safety oversight of air operators and that it has resources appropriate to the size and complexity of civil air operations under the jurisdiction of the State, to effectively discharge the responsibilities of the State.

3.2 The State of the Operator shall ensure that authority inspectors have adequate support, credentials, and transportation to accomplish, independently, their certification and continued surveillance tasks.

4. Technical guidance

4.1 The State of the Operator shall ensure that authority inspectors are provided with technical guidance manuals containing the policies, procedures, and standards to be used in the certification and continued surveillance of air operators.

4.2 The State of the Operator shall ensure that authority inspectors are provided with technical guidance containing the policies, procedures, and standards to be used in the resolution of safety issues, including enforcement.

4.3 The State of the Operator shall ensure that authority inspectors are provided with guidance that addresses ethics, personal conduct, and the avoidance of actual or perceived conflicts of interest in the performance of official duties.

5. Qualified technical personnel

5.1 The State of the Operator shall use a methodology to determine its inspector staffing requirements according to the size and complexity of civil air operations in that State.

5.2 **Recommendation.** *The methodology in 5.1 should be documented.*

5.3 The State of the Operator shall establish qualification requirements to ensure that its inspector personnel have operational or technical work experience and training compatible with those activities they are required to certificate or inspect.

Note.— Guidance on experience and training for inspectors is contained in the Manual of Procedures for Operations Inspection, Certification and Continued Surveillance *(Doc 8335).*

5.4 The State of the Operator shall require authority inspectors to complete initial and recurrent training in relevant technical subjects (including aircraft-specific subjects) and in skills necessary to effectively accomplish their certification and continued surveillance tasks.

5.5 **Recommendation.—** *The State of the Operator should take the necessary measures, such as conditions of service, to ensure that qualified inspectors are recruited and retained.*

6. Licensing and certification obligations

6.1 The State of the Operator shall use a documented process for the certification of air operators that includes thorough technical evaluations that lead to approval or acceptance of procedures, documents and operations as specified in Section II.

6.2 The State of the Operator shall require, prior to commencement of new commercial air transport operations, air operators to demonstrate that they can safely conduct the proposed operations.

7. Continued surveillance obligations

7.1 The State of the Operator shall use a documented process for the continued surveillance of air operators to verify the continued validity of the air operator certificates issued by the authority.

7.2 The State of the Operator shall use an ongoing surveillance plan to confirm that operators continue to meet the relevant requirements for initial certification and that each air operator is functioning satisfactorily.

APPENDIX 3. AIR OPERATOR CERTIFICATE (AOC)

(Note. — See Section II, Chapter 2, 2.2.1.5 and 2.2.1.6)

1. Purpose and scope

1.1 The AOC and its associated model-specific operations specifications shall contain the minimum information required in paragraphs 2 and 3 respectively, in a standardized format.

1.2 The air operator certificate and its associated operations specifications shall define the operations for which an operator is authorized.

Note.— Attachment F, paragraph 3.2.2, contains additional information that may be listed in the operations specifications associated with the air operator certificate.

2. AOC template

Note.— Section II, Chapter 4, 4.1.2, requires a certified true copy of the AOC to be carried aboard.

<table>
<tr><th colspan="3">AIR OPERATOR CERTIFICATE</th></tr>
<tr><td rowspan="2">[1]</td><td>STATE OF THE OPERATOR[2]</td><td>[1]</td></tr>
<tr><td>ISSUING AUTHORITY[3]</td><td></td></tr>
<tr><td>AOC #[4]:
Expiry date[5]:</td><td>OPERATOR NAME[6]

Dba trading name[7]:
Operator address[8]:
Telephone[9]:
Fax:
E-mail:</td><td>OPERATIONAL POINTS OF CONTACT[10]

Contact details, at which operational management can be contacted without undue delay, are listed in _____[11].</td></tr>
<tr><td colspan="3">This certificate certifies that _____[12] is authorized to perform commercial air operations, as defined in the attached operations specifications, in accordance with the operations manual and the _____[13].</td></tr>
<tr><td>Date of issue[14]:</td><td colspan="2">Name and signature[15]:
Title:</td></tr>
</table>

Notes.—

1. *For use of the State of the Operator.*
2. *Replace by the name of the State of the Operator.*
3. *Replace by the identification of the issuing authority of the State of the Operator.*

4. *Unique AOC number, as issued by the State of the Operator.*
5. *Date after which the AOC ceases to be valid (dd-mm-yyyy).*
6. *Replace by the operator's registered name.*
7. *Operator's trading name, if different. Insert "dba" before the trading name (for "doing business as").*
8. *Operator's principal place of business address.*
9. *Operator's principal place of business telephone and fax details, including the country code. E-mail to be provided if available.*
10. *The contact details include the telephone and fax numbers, including the country code, and the e-mail address (if available) at which operational management can be contacted without undue delay for issues related to flight operations, airworthiness, flight and cabin crew competency, dangerous goods and other matters as appropriate.*
11. *Insert the controlled document, carried on board, in which the contact details are listed, with the appropriate paragraph or page reference. e.g.: "Contact details are listed in the operations manual, Gen/Basic, Chapter 1, 1.1" or "... are listed in the operations specifications, page 1" or "... are listed in an attachment to this document".*
12. *Operator's registered name.*
13. *Insert reference to the appropriate civil aviation regulations.*
14. *Issuance date of the AOC (dd-mm-yyyy).*
15. *Title, name and signature of the authority representative. In addition, an official stamp may be applied on the AOC.*

3. Operations specifications for each aircraft model

Note.— Section II, Chapter 4, 4.1.2, requires a copy of the operations specifications of this section to be carried aboard.

3.1 For each helicopter model in the operator's fleet, identified by helicopter make, model and series, the following list of authorizations, conditions and limitations shall be included: issuing authority contact details, operator name and AOC number, date of issue and signature of the authority representative, aircraft model, types and area of operations, special limitations and authorizations.

Note.— If authorizations and limitations are identical for two or more models, these models may be grouped in a single list.

3.2 The operations specifications layout referred to in Chapter 2, 2.2.1.6, shall be as follows:

Note.— The MEL constitutes an integral part of the operations manual.

OPERATIONS SPECIFICATIONS

(subject to the approved conditions in the operations manual)

ISSUING AUTHORITY CONTACT DETAILS[1]

Telephone: _____ Fax: _____ E-mail: _____

AOC#[2]: _____ Operator name[3]: _____ Date[4]: _____ Signature: _____

Dba trading name: _____

Aircraft model[5]:

Types of operation: Commercial air transportation ☐ Passengers ☐ Cargo ☐ Other[6]:_____

Area(s) of operation[7]:

Special limitations[8]:

SPECIAL AUTHORIZATIONS	YES	NO	SPECIFIC APPROVALS[9]	REMARKS
Dangerous goods	☐	☐		
Low visibility operations				
Approach and landing	☐	☐	CAT[10]: _____ RVR: _____ m DH: _____ ft	
Take-off	☐	☐	RVR[11]: _____ m	
Navigation specifications for PBN operations[12]	☐	☐		13
Continuing airworthiness			14	
Other[15]	☐	☐		

Notes.—

1. *Telephone and fax contact details of the authority, including the country code. E-mail to be provided if available.*
2. *Insert the associated AOC number.*
3. *Insert the operator's registered name and the operator's trading name, if different. Insert "dba" before the trading name (for "doing business as").*
4. *Issuance date of the operations specifications (dd-mm-yyyy) and signature of the authority representative.*
5. *Insert the Commercial Aviation Safety Team (CAST)/ICAO designation of the helicopter make, model and series, or master series, if a series has been designated (e.g. Bell-47G-3 or SIKORSKY-S55). The CAST/ICAO taxonomy is available at: http://www.intlaviationstandards.org.*
6. *Other type of transportation to be specified (e.g. emergency medical service).*
7. *List the geographical area(s) of authorized operation (by geographical coordinates or specific routes, flight information region or national or regional boundaries).*

8. *List the applicable special limitations (e.g. VFR only, day only).*
9. *List in this column the most permissive criteria for each approval or the approval type (with appropriate criteria).*
10. *Insert the applicable precision approach category (CAT I, II, etc.). Insert the minimum RVR in metres and decision height in feet. One line is used per listed approach category.*
11. *Insert the approved minimum take-off RVR in metres. One line per approval may be used if different approvals are granted.*
12. *Performance-based navigation (PBN): one line is used for each PBN specification authorization (e.g. RNAV 10, RNAV 1, RNP 4), with appropriate limitations or conditions listed in the "Specific Approvals" and/or "Remarks" columns.*
13. *Limitations, conditions and regulatory basis for operational approval associated with the performance-based navigation specifications (e.g. GNSS, DME/DME/IRU). Information on performance-based navigation, and guidance concerning the implementation and operational approval process, are contained in the* Performance-based Navigation Manual *(Doc 9613).*
14. *Insert the name of the person/organization responsible for ensuring that the continuing airworthiness of the helicopter is maintained and the regulation that requires the work, i.e. within the AOC regulation or a specific approval (e.g. EC2042/2003, Part M, Subpart G).*
15. *Other authorizations or data can be entered here, using one line (or one multi-line block) per authorization (e.g. special approach authorization, special operations, specification of which performance class(es) the aircraft can be operated in).*

ATTACHMENT C. FLIGHT TIME AND FLIGHT DUTY PERIOD LIMITATIONS

Supplementary to Section II, Chapter 2, 2.2.10.2

1. Purpose and scope

1.1 Flight time and flight duty period limitations are established for the sole purpose of reducing the probability that fatigue of flight crew members may adversely affect the safety of flight.

1.2 In order to guard against this, two types of fatigue must be taken into account, namely, transient fatigue and cumulative fatigue. Transient fatigue may be described as fatigue which is normally experienced by a healthy individual following a period of work, exertion or excitement, and it is normally dispelled by a single sufficient period of sleep. On the other hand cumulative fatigue may occur after delayed or incomplete recovery from transient fatigue or as the after- effect of more than a normal amount of work, exertion or excitement without sufficient opportunity for recuperation.

1.3 Limitations based on the provisions of Part III, Section II, of the Annex will provide safeguards against both kinds of fatigue because they will recognize:

1.3.1 The necessity to limit flight time in such a way as to guard against both kinds of fatigue.

1.3.2 The necessity to limit time spent on duty on the ground immediately prior to a flight or at intermediate points during a series of flights in such a way as to guard particularly against transient fatigue.

1.3.3 The necessity to provide flight crew members with adequate opportunity to recover from fatigue.

1.3.4 The necessity of taking into account other related tasks the flight crew member may be required to perform in order to guard particularly against cumulative fatigue.

2. General

2.1 The responsibility rests with the pilot, not to exercise the privileges of the licence and related ratings at any time when aware of any decrease in medical fitness which might render the pilot unable to safely exercise these privileges, including any decrease in medical fitness through fatigue.

2.2 The limitations laid down in the following paragraphs are to be considered as minimum requirements and it is the responsibility of the operator to adjust them in certain cases, having regard to the factors mentioned below. Specific factors to be taken into consideration are:

a) the crew composition of the aircraft;

b) the probability of operational delays;

c) the type of aircraft and route complexities such as traffic density, navigation aids, standard of equipment carried, communication difficulties, and high altitude flying in unpressurized aircraft, or flying with high cabin altitudes in pressurized aircraft;

d) the proportion of night flying involved;

e) the extent to which the accommodation at layovers is such as to permit crews to secure real rest;

f) the number of landings and take-offs;

g) the need for an orderly scheduling system, giving a high degree of stability (for this, provision of adequate reserves is an important factor);

h) the sleep deprivation arising from interruption of the normal sleep/wake cycle; and

i) the cockpit environment.

2.3 For reasons of flight safety, the operator has the responsibility to ensure that crew members engaged in duties other than flight duties performed on behalf of the employer are provided with at least the minimum required rest periods before engaging in flight duties.

3. Definitions

Deadheading crew. A crew member positioned by the operator in flight or by surface transport.

Duty period. The time during which a flight crew member carries out any duty at the behest of the flight crew member's employer.

Flight duty period. The total time from the moment a flight crew member commences duty, immediately subsequent to a rest period and prior to making a flight or a series of flights, to the moment the flight crew member is relieved of all duties having completed such flight or series of flights.

Flight sector. A flight or one of a series of flights which commences at a parking place of the aircraft and terminates at a parking place of the aircraft.

It is composed of:

— flight preparation,

— flight time,

— post-flight period after the flight sector or series of flight sectors.

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.

Rest period. Any period of time on the ground during which a flight crew member is relieved of all duties by the operator.

Series of flights. Two or more flight sectors accomplished in between two rest periods.

Standby. A defined period during which a crew member may be called for duty with minimum notice.

Turnaround time. The time spent on the ground during a flight duty period between two flight sectors.

4. Comments about the definitions

4.1 Flight time

The definition of flight time is of necessity very general but in the context of limitations it is, of course, intended to apply to flight crew members in accordance with the relevant definition of a flight crew member. Pursuant to that latter definition, licensed crew personnel travelling as passengers cannot be considered flight crew members, although this should be taken into account in arranging rest periods.

4.2 Flight duty periods

4.2.1 The definition of flight duty period is intended to cover a continuous period of duty which always includes a flight or a series of flights. It is meant to include all duties a flight crew member may be required to carry out from the moment the flight crew member reports at the place of employment on the day of a flight until relieved of duties, having completed the flight or series of flights. It is considered necessary that this period should be subject to limitations because a flight crew member's activities within the limits of such period would eventually induce fatigue — transient or cumulative — which could endanger the safety of a flight. There is on the other hand (from the point of view of flight safety) insufficient reason to establish limitations for any other time during which a flight crew member is performing a task assigned by the operator. Such task should, therefore, only be taken into account when making provisions for rest periods as one among many factors which could lead to fatigue.

4.2.2 The definition does not imply the inclusion of such periods as time taken for a flight crew member to travel from the flight crew member's home to the place of employment.

4.2.3 An important safeguard may be established if States and operators recognize the right of a crew member to refuse further flight duty when suffering from fatigue of such a nature as to affect adversely the safety of flight.

4.3 Rest periods

The definition of rest period implies an absence of duty and is intended to be for the purpose of recovering from fatigue; the way in which this recovery is achieved is the responsibility of the individual.

5. Types of limitations

5.1 Limitations are broadly divided by time; for example, the majority of States reporting to ICAO prescribe daily, monthly and yearly flight time limitations, and a considerable number also prescribe quarterly flight time limitations. It will probably be sufficient to prescribe flight duty period limitations on a daily basis. It must be understood, however, that these limitations will vary considerably taking into account a variety of situations.

5.2 In formulating regulations or rules governing flight time limitations the size of the crew complement and the extent to which the various tasks to be performed can be divided among the crew members should be taken into account; and in the case where adequate facilities for relief are provided in the aircraft in such a way that a crew member may have horizontal rest and a degree of privacy, flight duty periods could be extended. Adequate rest facilities on the ground are required at places where relief periods are to be given. Also States or operators should give due weight to the following factors: traffic density; navigational and communication facilities; rhythm of work/sleep cycle; number of landings and take-offs; aircraft handling and performance characteristics and weather conditions.

6. Pro forma table

The following pro forma table is provided to illustrate one of many forms in which the Standard at Section II, 2.2.10.2, may be implemented.

Crew	*Maximum flight duty period in 24 hours*	*Maximum flight time (hours)*				*Rest periods*	
		Daily 24 hours	*Monthly*	*Quarterly*	*Annually*	*Daily*	*Per week*
Pilot-in-command 1st Officer							

ATTACHMENT F. AIR OPERATOR CERTIFICATION AND VALIDATION

Supplementary to Section II, Chapter 2, 2.2.1

1. Purpose and scope

1.1 Introduction

The purpose of this Attachment is to provide guidance concerning the actions required by States in connection with the operator certification requirements in Chapter 2, 2.2.1, particularly the means of accomplishing and recording those actions.

1.2 Prior certification required

In accordance with Standard 2.2.1.3, the issuance of an air operator certificate (AOC) is "dependent upon the operator demonstrating" to the State that its organization, training, flight operations and maintenance arrangements are adequate considering the nature and extent of the operations to be conducted. The certification process involves the State's evaluation of each operator and a determination that the operator is capable of conducting safe operations before initial issuance of an AOC or the addition of any subsequent authorizations to an AOC.

1.3 Standard certification practices

The State of the Operator is required by Standard 2.2.1.8 to establish a certification system to ensure compliance with the required standards for the type of operation to be conducted. Several States have developed policies and procedures to comply with this certification requirement as industry capabilities evolve. While those States did not develop their certification practices in coordination with each other, their practices are remarkably similar and consistent in their requirements. The effectiveness of their practices has been validated over many years, resulting in improved safety records of operators throughout the world. Many of these certification practices have been incorporated by reference in ICAO provisions.

2. Required technical safety evaluations

2.1 Approval and acceptance actions

2.1.1 The certification and continued surveillance of an air operator includes actions taken by a State on matters submitted for its review. The actions can be categorized as approvals or acceptances depending on the nature of the response by the State to the matter submitted for its review.

2.1.2 An approval is an active response by the State to a matter submitted for its review. An approval constitutes a finding or determination of compliance with the applicable standards. An approval will be evidenced by the signature of the approving official, the issuance of a document or certificate, or some other formal action taken by the State.

2.1.3 An acceptance does not necessarily require an active response by the State to a matter submitted for its review. A State may accept a matter submitted to it for review as being in compliance with the applicable standards if the State does not specifically reject all or a portion of the matter under review, usually after some defined period of time after submission.

2.1.4 The phrase "approved by the State" or similar phrases using the word "approval" are frequently used in Part III, Section II. Provisions indicating a review and implying approval or at least "acceptance" by the State occur even more frequently in Part III, Section II. In addition to these specific phrases, Part III, Section II, contains numerous references to requirements which would, as a minimum, create the need for at least a technical review by the State. This Attachment groups and outlines those specific Standards and Recommended Practices for ease of use by States.

2.1.5 The State should make or arrange for a technical safety evaluation before issuing the approval or acceptance. The evaluation should:

a) be accomplished by a person with specific qualifications to make such a technical evaluation;

b) be in accordance with written, standardized methodology; and

c) where necessary to safety, include a practical demonstration of the air operator's actual ability to conduct such an operation.

2.2 Demonstrations necessary prior to some approvals

2.2.1 Standard 2.2.1.3 obligates the State of the Operator, prior to certification of an operator, to require sufficient demonstrations by the operator to enable the State to evaluate the adequacy of the operator's organization, method of control and supervision of flight operations, ground handling and maintenance arrangements. These demonstrations should be in addition to the review or inspections of manuals, records, facilities and equipment. Some of the approvals required by Part III, Section II, such as approval for Category III operations, have significant safety implications and should be validated by demonstration before the State approves such operations.

2.2.2 While the specific methodology and extent of the required demonstrations and evaluations vary between States, the certification processes of States whose operators have good safety records are generally consistent. In these States, technically qualified inspectors evaluate a representative sample of the actual training, maintenance and operations prior to the issuance of an AOC or additional authorizations to the AOC.

2.3 Recording of certification actions

2.3.1 It is important that the certification, approval and acceptance actions of the State are adequately documented. The State should issue a written instrument, such as a letter or formal document, as an official record of the action. These written instruments should be retained as long as the operator continues to exercise the authorizations for which the approval or acceptance action was issued. These instruments are unambiguous evidence of the authorities held by an operator and provide proof in the event that the State and the operator disagree on the operations that the operator is authorized to conduct.

2.3.2 Some States collect certification records such as inspections, demonstrations, approvals and acceptance instruments into a single file which is retained as long as the operator is active. Other States retain these records in files according to the certification action performed, and revise the file as the approvals or acceptance instruments are updated. Regardless of the method used, these certification records are persuasive evidence that a State is complying with its ICAO obligations regarding operator certification.

2.4 Coordination of operations and airworthiness evaluations

Some of the references to approval or acceptance in Part III, Section II, will require an operations evaluation and an airworthiness evaluation. Low minima approvals for the conduct of Category II and III ILS approaches, for example, require

coordinated prior evaluation by operations and airworthiness specialists. Flight operations specialists should evaluate the operational procedures, training and qualifications. Airworthiness specialists should evaluate the aircraft, equipment reliability and maintenance procedures. These evaluations may be accomplished separately, but should be coordinated to ensure that all aspects necessary for safety have been addressed before any approval is issued.

2.5 State of the Operator and State of Registry responsibilities

2.5.1 Annex 6, Part III, Section II, places the responsibility for initial certification, issuance of the AOC, and ongoing surveillance of an air operator on the State of the Operator. Annex 6, Part III, also requires the State of the Operator to consider or act in accordance with various approvals and acceptances by the State of Registry. Under these provisions, the State of the Operator should ensure that its actions are consistent with the approvals and acceptances of the State of Registry and that the air operator is in compliance with State of Registry requirements.

2.5.2 It is essential that the State of the Operator be satisfied with the arrangements by which its air operators use aircraft on the register of another State, particularly for maintenance and crew training. The State of the Operator should review such arrangements in coordination with the State of Registry. Where appropriate, an agreement transferring oversight responsibilities from the State of Registry to the State of the Operator pursuant to Article 83 *bis* to the Convention on International Civil Aviation should be arranged to preclude any misunderstandings regarding which State is responsible for specific oversight responsibilities.

Note.— Guidance concerning the responsibilities of the State of the Operator and the State of Registry in connection with lease, charter and interchange operations is contained in the Manual of Procedures for Operations Inspection, Certification and Continued Surveillance *(Doc 8335). Guidance concerning the transfer of State of Registry responsibilities to the State of the Operator in accordance with Article 83* bis *is contained in* Guidance on the Implementation of Article 83 *bis* of the Convention on International Civil Aviation *(Cir 295).*

3. Approval actions

3.1 Approvals

The term "approval" implies a more formal action on the part of the State with respect to a certification matter than does the term "acceptance". Some States require the Director of the CAA or a designated lower level CAA official to issue a formal written instrument for every "approval" action taken. Other States allow a variety of documents to be issued as evidence of an approval. The approval document issued and the matter addressed by the approval will depend on the delegated authority of the official. In such States, authority to sign routine approvals, such as operator minimum equipment lists for specific aircraft, is delegated to technical inspectors. More complex or significant approvals are normally issued by higher level officials.

3.2 Air operator certificate (AOC)

3.2.1 The AOC required by Annex 6, Part III, Section II, Chapter 2, 2.2.1, is a formal instrument. Section II, Chapter 2, 2.2.1.5, lists the information to be included in the AOC.

3.2.2 In addition to the items in Appendix 3, paragraph 3, operations specifications may include other specific authorizations, such as:

a) take-off and landing operations with exposure time;

b) special approach procedures (e.g. steep gradient approach, instrument landing system precision runway monitor approach, localizer-type directional aid precision runway monitor approach, RNP approach);

c) instrument meteorological conditions operations in Performance Class III; and

d) operations in areas with special procedures (e.g. operations in areas using different altimetry units or altimeter setting procedures).

3.3 Provisions that require an approval

The following provisions require or encourage approval by specified States. The approval of the State of the Operator is required in all of the certification actions listed below that are not preceded by one or more asterisks. Certification actions listed below that are preceded by one or more asterisks require approval by the State of Registry (single asterisk or "*"), or by the State of Design (double asterisk or "**"). However, the State of the Operator should take the necessary steps to ensure that operators for which it is responsible comply with any applicable approvals issued by the State of Registry and/or State of Design, in addition to its own requirements.

a) **Configuration deviation list (CDL) (Definitions);

b) **Master minimum equipment list (MMEL) (Definitions);

c) The method for establishing minimum flight altitudes (2.2.7.3);

d) The method of determining heliport operating minima (2.2.8.1);

e) Flight time, flight duty periods and rest periods (2.2.10.2);

f) Helicopter-specific minimum equipment list (MEL) (4.1.3);

g) RNP Performance-based navigation operations (5.2.2 b));

h) *Approved maintenance organization (6.1.2);

i) *Helicopter-specific maintenance programme (6.3.1);

j) Flight crew training programmes (7.3.1);

k) Training in the transport of dangerous goods (7.3.1, Note 5);

l) Use of flight simulation training devices (7.3.2 a), 7.4.2 and 7.4.4.1, Note);

m) Method of control and supervision of flight operations (2.2.1.3 and 8.1);

n) **Mandatory maintenance tasks and intervals (9.3.2); and

o) Cabin attendant training programmes (10.3).

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:

a) details of the helicopter-specific checklists (Definition: aircraft operating manual and 4.1.4);

b) details of the aircraft-specific systems (Definition: aircraft operating manual and 4.1.4);

c) mandatory material for the operations manual (2.2.3.2 and Attachment H);

d) *operator's aircraft-specific maintenance responsibilities (6.1.1);

e) *method of maintenance and release (6.1.2);

f) *maintenance control manual (6.2.1);

g) *mandatory material for the maintenance control manual (6.2.4);

h) *reporting of maintenance experience information (6.5.1);

i) *implementing necessary maintenance corrective actions (6.5.2);

j) *modification and repair requirements (6.6);

k) training facilities (7.3.1);

l) qualifications of instructors (7.3.1);

m) need for recurrent training (7.3.l);

n) use of correspondence courses and written examinations (7.3.1, Note 4);

o) use of flight simulation training devices (7.3.2);

p) flight crew qualification records (7.4.3.4);

q) designated representative of the State of the Operator (7.4.4.1);

r) *flight manual changes (9.1); and

s) minimum number of flight attendants assigned to a specific aircraft (10.1).

4. Acceptance actions

4.1 Acceptance

4.1.1 The actual extent of the State's technical evaluation of an operator's readiness to conduct certain flight operations should be much broader than just those Standards which require or imply approval. During certification, the State should ensure that an operator will be in compliance with all requirements of Part III, Section II, prior to conducting international commercial air transport operations.

4.1.2 The concept of "acceptance" is used by some States as a formal method of ensuring that all critical aspects of operator certification are reviewed by the State prior to the formal issuance of the AOC. Using this concept, these States

exercise their prerogative to have technical inspectors review all operators' policies and procedures impacting operational safety. The actual execution of an instrument to reflect this acceptance (assuming such a document is issued) may be delegated to the technical inspector assigned to the certification.

4.1.3 The act of "acceptance" is in addition to the issuance of a specific approval. For example, certain portions of the operations manual may be "accepted" by formal instrument, while other portions such as the aircraft-specific minimum equipment list are "approved" by a separate formal instrument.

4.2 Conformance report

Some States use a conformance report to document the acceptances it makes with regard to a particular operator. This is a document submitted by the operator detailing how, with specific references to operations or maintenance manuals, it will comply with all applicable State regulations. This type of document is referenced in Doc 8335 and Doc 9760, Volume I, 6.2.1 c) 4). Such a conformance report should be actively used during the certification process and revised as necessary to reflect modifications required by the State in the operator's policies and procedures. Then a final conformance report is included in the State's certification records, along with other records of certification. The conformance report is an excellent method of demonstrating that the operator was properly certificated with respect to all applicable regulatory requirements.

4.3 Operations and maintenance manuals

4.3.1 Operations and maintenance manuals, and any subsequent amendments should be submitted to the State (2.2.3.2, 6.1.1, 6.2.4, 6.3.2). The State also establishes minimum contents for these manuals (9.2, 9.3, 9.4 and Attachment H). The pertinent portions of an operator's manual for evaluation should be identified in the State's technical guidance, e.g. operations policy manual, aircraft operating manual, cabin crew manual, route guide, and training manual. Some States issue a formal instrument accepting each manual and any subsequent amendments.

4.3.2 The State's technical evaluation should, in addition to ensuring that all required contents are addressed, consider if the specific policies and procedures would result in the desired outcome. For example, the specifications for the operational flight plan (Attachment H, 2.1.15) should provide the step-by-step completion guidance necessary for compliance with 2.3 concerning the content and retention of these plans.

4.3.3 Proven industry practices, such as an example of an actual completed operational flight plan for reference by the flight crew and dispatchers (although not a Standard), may also be required by a State's technical evaluator during certification. This aspect of the technical evaluation should be conducted by inspectors experienced in operator certification. A major consideration with respect to evaluating for proven industry practices that are aircraft-specific, equipment-specific or have limited applications is the employment of evaluators who are currently qualified in the practice to be evaluated.

5. Other approval or acceptance considerations

Some States provide for approval or acceptance of certain critical documents, records or procedures specified in Part III, Section II, although the relevant Annex 6 Standards do not require approval or acceptance by the State of the Operator. The following are some examples:

a) safety programme (1.1.9);

b) method for obtaining aeronautical data (2.1.1);

c) adequacy of the fuel and oil records (2.2.9);

d) adequacy of flight time, flight duty and rest period records (2.2.10.3, 7.6, 10.4);

e) adequacy of the aircraft maintenance logbook (2.3.1 a), b), and c));

f) adequacy of the load manifest (2.3.1 d), e) and f));

g) adequacy of the operational plan (2.3.1 g));

h) method for obtaining weather data (2.3.5.1 and 2.3.5.2);

i) method of compliance with carry-on baggage stowage (2.7);

j) helicopter performance operating limitations (3.2.4);

k) method of obtaining and applying heliport obstacle data (3.3);

l) adequacy of passenger information cards (4.2.2 d));

m) procedures for long-range navigation (5.2.1 b));

n) contents of the journey log book (9.4); and

o) content of the security training programme (11.2).

6. Validation of standards of operations

Standard 2.2.1.4 requires that the validity of an AOC shall depend upon the operator maintaining the original certification standards (2.2.1.3) under the supervision of the State of the Operator. This supervision requires that a system of continued surveillance be established to ensure the required standards of operations are maintained (2.2.1.8). A good starting point in the development of such a system is to require annual or semi-annual inspections, observations and tests to validate the required certification approval and acceptance actions.

7. Amendment of air operator certificates

The certification of an operator is an ongoing process. Few operators will be satisfied over time with the initial authorizations issued with their AOC. Evolving market opportunities will cause an operator to change aircraft models and seek approval for new operational areas requiring other additional capabilities. Additional technical evaluations should be required by the State before issuing the formal written instruments approving any changes to the original AOC and other authorizations. Where possible, each request should be "bridged", using the original authorization as the foundation to determine the extent of the State's impending evaluation before issuing the formal instrument.

ATTACHMENT G. FLIGHT SAFETY DOCUMENTS SYSTEM

Supplementary to Section II, Chapter 1, 1.3.6

1. Introduction

1.1 The following material provides guidance on the organization and development of an operator's flight safety documents system. It should be understood that the development of a flight safety documents system is a complete process, and changes to each document comprising the system may affect the entire system. Guidelines applicable to the development of operational documents have been produced by government and industry sources and are available to operators. Nevertheless, it may be difficult for operators to make the best use of these guidelines, since they are distributed across a number of publications.

1.2 Furthermore, guidelines applicable to operational documents development tend to focus on a single aspect of documents design, for example, formatting and typography. Guidelines rarely cover the entire process of operational documents development. It is important for operational documents to be consistent with each other, and consistent with regulations, manufacturer requirements and Human Factors principles. It is also necessary to ensure consistency across departments as well as consistency in application. Hence the emphasis on an integrated approach, based on the notion of the operational documents as a complete system.

1.3 The guidelines in this Attachment address the major aspects of an operator's flight safety documents system development process, with the aim of ensuring compliance with Section II, Chapter 1, 1.3.6. The guidelines are based not only upon scientific research, but also upon current industry best practices, with an emphasis on a high degree of operational relevance.

2. Organization

2.1 A flight safety documents system should be organized according to criteria which ensure easy access to information required for flight and ground operations contained in the various operational documents comprising the system and which facilitate management of the distribution and revision of operational documents.

2.2 Information contained in a flight safety documents system should be grouped according to the importance and use of the information, as follows:

a) time-critical information, e.g. information that can jeopardize the safety of the operation if not immediately available;

b) time-sensitive information, e.g. information that can affect the level of safety or delay the operation if not available in a short time period;

c) frequently used information;

d) reference information, e.g. information that is required for the operation but does not fall under b) or c) above; and

e) information that can be grouped based on the phase of operation in which it is used.

2.3 Time-critical information should be placed early and prominently in the flight safety documents system.

2.4 Time-critical information, time-sensitive information, and frequently used information should be placed in cards and quick-reference guides.

3. Validation

The flight safety documents system should be validated before deployment, under realistic conditions. Validation should involve the critical aspects of the information use, in order to verify its effectiveness. Interactions among all groups that can occur during operations should also be included in the validation process.

4. Design

4.1 A flight safety documents system should maintain consistency in terminology and in the use of standard terms for common items and actions.

4.2 Operational documents should include a glossary of terms, acronyms and their standard definition, updated on a regular basis to ensure access to the most recent terminology. All significant terms, acronyms and abbreviations included in the flight documents system should be defined.

4.3 A flight safety documents system should ensure standardization across document types, including writing style, terminology, use of graphics and symbols, and formatting across documents. This includes a consistent location of specific types of information, consistent use of units of measurement and consistent use of codes.

4.4 A flight safety documents system should include a master index to locate, in a timely manner, information included in more than one operational document.

Note.— The master index must be placed in the front of each document and consist of no more than three levels of indexing. Pages containing abnormal and emergency information must be tabbed for direct access.

4.5 A flight safety documents system should comply with the requirements of the operator's quality system, if applicable.

5. Deployment

Operators should monitor deployment of the flight safety documents system, to ensure appropriate and realistic use of the documents, based on the characteristics of the operational environment and in a way which is both operationally relevant and beneficial to operational personnel. This monitoring should include a formal feedback system for obtaining input from operational personnel.

6. Amendment

6.1 Operators should develop an information gathering, review, distribution and revision control system to process information and data obtained from all sources relevant to the type of operation conducted, including, but not limited to, the State of the Operator, State of Design, State of Registry, manufacturers and equipment vendors.

Note.— Manufacturers provide information for the operation of specific aircraft that emphasizes the aircraft systems and procedures under conditions that may not fully match the requirements of operators. Operators should ensure that such information meets their specific needs and those of the local authority.

ATTACHMENT H. CONTENTS OF AN OPERATIONS MANUAL

Supplementary to Section II, Chapter 2, 2.2.3.1

1. Organization

1.1 An operations manual, which may be issued in separate parts corresponding to specific aspects of operations, provided in accordance with Section II, Chapter 2, 2.2.3.1, should contain at least the following:

a) General;

b) Aircraft operating information;

c) Routes and aerodromes; and

d) Training.

1.2 From 1 January 2006, an operations manual, which may be issued in separate parts corresponding to specific aspects of operations, provided in accordance with Section II, Chapter 2, 2.2.3.1, should be organized with the following structure:

a) General;

b) Aircraft operating information;

c) Routes and aerodromes; and

d) Training.

2. Contents

The operations manual referred to in 1.1 and 1.2 should contain at the least the following:

2.1 General

2.1.1 Instructions outlining the responsibilities of operations personnel pertaining to the conduct of flight operations.

2.1.2 Rules limiting the flight time and flight duty periods and providing for adequate rest periods for flight crew members and cabin crew.

2.1.3 A list of the navigation equipment to be carried, including any requirements relating to operations where performance-based navigation is prescribed.

2.1.4 The circumstances in which a radio listening watch is to be maintained.

2.1.5 The method for determining minimum flight altitudes.

2.1.6 The methods for determining heliport operating minima.

2.1.7 Safety precautions during refuelling with passengers on board.

2.1.8 Ground handling arrangements and procedures.

2.1.9 Procedures, as prescribed in Annex 12, for pilots-in-command observing an accident.

2.1.10 The flight crew for each type of operation including the designation of the succession of command.

2.1.11 Specific instructions for the computation of the quantities of fuel and oil to be carried, having regard to all circumstances of the operation including the possibility of loss of pressurization and the failure of one or more power-units while en route.

2.1.12 The conditions under which oxygen shall be used and the amount of oxygen determined in accordance with Section II, Chapter 2, 2.3.8.2.

2.1.13 Instructions for mass and balance control.

2.1.14 Instructions for the conduct and control of ground de-icing/anti-icing operations.

2.1.15 The specifications for the operational flight plan.

2.1.16 Standard operating procedures (SOP) for each phase of flight.

2.1.17 Instructions on the use of normal checklists and the timing of their use.

2.1.18 Departure contingency procedures.

2.1.19 Instructions on the maintenance of altitude awareness.

2.1.20 Instructions on the clarification and acceptance of ATC clearances, particularly where terrain clearance is involved.

2.1.21 Departure and approach briefings.

2.1.22 Route and destination familiarization.

2.1.23 Conditions required to commence or to continue an instrument approach.

2.1.24 Instructions for the conduct of precision and non-precision instrument approach procedures.

2.1.25 Allocation of flight crew duties and procedures for the management of crew workload during night and IMC instrument approach and landing operations.

2.1.26 Information and instructions relating to the interception of civil aircraft including:

a) procedures, as prescribed in Annex 2, for pilots-in-command of intercepted aircraft; and

b) visual signals for use by intercepting and intercepted aircraft, as contained in Annex 2.

2.1.27 Details of the accident prevention and flight safety programme provided in accordance with Section II, Chapter 1, 1.1.9, including a statement of safety policy and the responsibility of personnel.

2.1.28 Information and instructions on the carriage of dangerous goods, including action to be taken in the event of an emergency.

Note.— Guidance material on the development of policies and procedures for dealing with dangerous goods incidents on board aircraft is contained in Emergency Response Guidance for Aircraft Incidents involving Dangerous Goods (Doc 9481).

2.1.29 Security instructions and guidance.

2.1.30 The search procedure checklist provided in accordance with Section II, Chapter 11, 11.1.

2.2 Aircraft operating information

2.2.1 Certification limitations and operating limitations.

2.2.2 The normal, abnormal and emergency procedures to be used by the flight crew and the checklists relating thereto as required by Section II, Chapter 4, 4.1.4.

2.2.3 Flight planning data for pre-flight and in-flight planning with different thrust/power and speed settings.

2.2.4 Instructions and data for mass and balance calculations.

2.2.5 Instructions for aircraft loading and securing of load.

2.2.6 Aircraft systems, associated controls and instructions for their use, as required by Section II, Chapter 4, 4.1.4.

2.2.7 The minimum equipment list for the helicopter types operated and specific operations authorized, including any requirements relating to operations where performance-based navigation is prescribed.

2.2.8 Checklist of emergency and safety equipment and instructions for its use.

2.2.9 Emergency evacuation procedures, including type-specific procedures, crew coordination, assignment of crew's emergency positions and the emergency duties assigned to each crew member.

2.2.10 The normal, abnormal and emergency procedures to be used by the cabin crew, the checklists relating thereto and aircraft systems information as required, including a statement related to the necessary procedures for the coordination between flight and cabin crew.

2.2.11 Survival and emergency equipment for different routes and the necessary procedures to verify its normal functioning before take-off, including procedures to determine the required amount of oxygen and the quantity available.

2.2.12 The ground-air visual signal code for use by survivors, as contained in Annex 12.

2.3 Routes and aerodromes

2.3.1 A route guide to ensure that the flight crew will have, for each flight, information relating to communication facilities, navigation aids, aerodromes, instrument approaches, instrument arrivals and instrument departures as applicable for the operation, and such other information as the operator may deem necessary for the proper conduct of flight operations.

2.3.2 The minimum flight altitudes for each route to be flown.

2.3.3 Heliport operating minima for each of the heliports that are likely to be used as heliports of intended landing or as alternate heliports.

2.3.4 The increase of heliport operating minima in case of degradation of approach or heliport facilities.

2.4 Training

2.4.1 Details of the flight crew training programme and requirements, as required by Section II, Chapter 7, 7.3.

2.4.2 Details of the cabin crew duties training programme as required by Section II, Chapter 10, 10.3.

2.4.3 Details of the flight operations officer/flight dispatcher training programme when employed in conjunction with a method of flight supervision in accordance with Section II, Chapter 2, 2.2.

Note.— Details of the flight operations officer/flight dispatcher training programme are contained in Section II, Chapter 8, 8.3.