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| **SADC AVIATION SAFETY ORGANIZATION (SASO)**  **REGULATIONS** |



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| **OPERATION OF AIRCRAFT COMMERCIAL AIR TRANSPORT (HELICOPTER) REGULATIONS**  **First Edition**  **April 2023** |

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**PART I**

**PRELIMINARY PROVISIONS**

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| **Rev. No** | **Date**  **(DD-MM-YYYY)** | **Subject** | **Inserted By**  **(Department-Division)** |
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# PART I

# PRELIMINARY PROVISIONS

**OPS 1. Citation and Commencement**

1. These Regulations may be cited as the SASO Model Civil Aviation (Operation of Aircraft- Commercial Air Transport) Regulations, 2023.
2. These regulations come into operation on the date on which it is published in the [State] Gazette

**OPS 2. Interpretation**

“**Advanced aircraft”** means aircraft with equipment in addition to that required for a basic aircraft for a given take-off, approach or landing operation

“**Aerial work”** means an aircraft operation in which an aircraft is used for specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc;

**“Aerodrome”** means a defined area on land or water, including any buildings, installations and equipment intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft;

**“Agreement summary**”. means when an aircraft is operating under an Article 83 bis agreement between the State of Registry and another State, the agreement summary is a document transmitted with the Article 83 bis Agreement registered with the ICAO Council that identifies succinctly and clearly which functions and duties are transferred by the State of Registry to that other State;

**“Aircraft**” means 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”** means a manual, acceptable to the (Authority)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;

**“Air operator certificate or AOC”** means a certificate authorizing an operator to carry out specified commercial air transport operations;

**“Air traffic service or ATS**” is a generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service, area control service, approach control service or aerodrome control service;

**“Airworthy**” means the status of an aircraft, engine, propeller or part when it conforms to its approved design and is in a condition for safe operation;

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

Alternate heliports include the following:

1. **“Take-off alternate”** means an alternate heliport at which a helicopter would be able to land should this become necessary shortly after take-off and it is not possible to use the heliport of departure;
2. **“En-route alternate”** means an alternate heliport at which a helicopter would be able to land in the event that a diversion becomes necessary while en route;
3. **“Destination alternate”** means an alternate heliport at which a helicopter would be able to land should it become either impossible or inadvisable to land at the heliport of intended landing;

**“Approach and landing phase helicopters**” means that part of the flight from 300 m or 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;

**“Appropriate airworthiness requirements”** means the comprehensive and detailed airworthiness codes established, adopted or accepted by a Contracting State for the class of aircraft, engine or propeller under consideration;

**“Area navigation or RNAV”** means 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;

**“Basic aircraft**” means an aircraft which has the minimum equipment required to perform the intended take-off, approach or landing operation.

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

**“Combined vision system or CVS”** means a system to display images from a combination of an enhanced vision system or EVS and a synthetic vision system or SVS;

**“COMAT”** means operator material carried on an operator’s aircraft for the operator’s own purposes.

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

**“Commercial air transport operation”** means an aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire;

**“Configuration deviation list or CDL”** means 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”** means in relation to a city, town or settlement, any area which is substantially used for residential, commercial or recreational purposes;

**“Congested hostile environment”** means a hostile environment within a congested area;

**“Continuing airworthiness”** means the set of processes by which an aircraft, engine, rotor or part complies with the applicable airworthiness requirements and remains in a condition for safe operation throughout its operating life;

**“Continuing airworthiness records”** means records which are related to the continuing airworthiness status of an aircraft, engine, rotor or associated part;

**“Continuous descent final approach (CDFA)”** means a technique, consistent with stabilized approach procedures, for flying the final approach segment (FAS) of an instrument non-precision approach (NPA) procedure as a continuous descent, without level-off, from an altitude or height at or above the final approach fix altitude/height to a point approximately 15 m or 50 ft above the landing runway threshold or the point where the flare manoeuvre begins for the type of aircraft flown; for the FAS of an NPA procedure followed by a circling approach, the CDFA technique applies until circling approach minima circling OCA or H or visual flight manoeuvre altitude or height are reached;

**“Crew member”** means a person assigned by an operator to duty on an aircraft during a flight duty period;

**“Dangerous goods**” means 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;

**“Decision altitude (DA) or decision height (DH)”** means a specified altitude or height in a three-dimensional or 3D instrument approach operation at which a missed approach must be initiated if the required visual reference to continue the approach has not been established;

**“Defined point after take-off (DPATO)”** means 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;

**“Defined point before landing (DPBL)”** means 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;

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

**“Duty period”** means a period which starts when a flight or cabin crew member is required by an operator to report for or to commence a duty and ends when that person is free from all duties;

**“Electronic flight bag (EFB)”** means an electronic information system, comprised of equipment and applications for flight crew, which allows for the storing, updating, displaying and processing of EFB functions to support flight operations or duties;

**“Elevated heliport”** means a heliport located on a raised structure on land;

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

1. **“Automatic fixed ELT (ELT (AF))”** means an automatically activated ELT which is permanently attached to an aircraft.
2. **“Automatic portable ELT (ELT (AP))”** means an automatically activated ELT which is rigidly attached to an aircraft but readily removable from the aircraft.
3. **“Automatic deployable ELT (ELT(AD))”** means 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.
4. **“Survival ELT (ELT(S))”** means an ELT which is removable from an aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by survivors.

**“Engine”** means a unit used or intended to be used for aircraft propulsion. consisting of at least those components and equipment necessary for functioning and control, but excludes the propeller and rotors where applicable;

**“Enhanced vision system or EVS”** means a system to display electronic real-time images of the external scene achieved through the use of image sensors;

**“En-route phase”** means 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;

“**Fatigue”** means a physiological state of reduced mental or physical performance capability resulting from sleep loss, extended wakefulness, circadian phase, or workload, mental or physical activity that can impair a person’s alertness and ability to adequately perform safety-related operational duties;

**“Fatigue risk management system (FRMS)”.** means data-driven means of continuously monitoring and managing fatigue-related safety risks, based upon scientific principles and knowledge as well as operational experience that aims to ensure relevant personnel are performing at adequate levels of alertness;

**“Final approach and take-off area (FATO)”** means 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;

**“Final approach segment (FAS)”** means that segment of an instrument approach procedure in which alignment and descent for landing are accomplished;

**“Flight crew member**” means a licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period;

**“Flight duty period”** means a period which commences when a flight or cabin crew member is required to report for duty that includes a flight or a series of flights and which finishes when the aircraft finally comes to rest and the engines are shut down at the end of the last flight on which the flight or cabin crew is a crew member;

**“Flight manual”** means 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”** means person designated by the operator to engage in the control and supervision of flight operations, whether licensed or not, suitably qualified in accordance with Part…Personnel Licensing who supports, briefs and assists the pilot-in-command in the safe conduct of the flight;

**“Flight plan”** means a specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft;

**“Flight recorder**” means any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation;

**“Automatic deployable flight recorder (ADFR)”** means a combination flight recorder installed on the aircraft which is capable of automatically deploying from the aircraft;

“**Flight safety documents system**” means 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”** means any one of the following three types of apparatus in which flight conditions are simulated on the ground;

1. **“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;
2. **“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;
3. **“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” means 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;

**“General aviation operation”** means an aircraft operation other than a commercial air transport operation or an aerial work operation;

**“Ground handling”** means services necessary for an aircraft’s arrival at, and departure from, an airport, other than air traffic services;

**“Head-up display (HUD)”** means a display system that presents flight information into the pilot’s forward external field of view;

**“Helicopter”** means 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;

**“Helideck”** means a heliport located on a floating or fixed offshore structure;

**“Heliport”** means 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;

**“Heliport operating minima”** means the limits of usability of a heliport for:

1. take-off, expressed in terms of runway visual range or visibility and, where necessary, cloud conditions;
2. landing in 2D instrument approach operations, expressed in terms of visibility and/or runway visual range, minimum descent altitude or MDA or minimum descent height MDH and, where necessary, cloud conditions; and
3. landing in 3D instrument approach operations, expressed in terms of visibility or runway visual range and decision altitude or DA or descent height or DH as appropriate to the type or category of the operation;

**“Hostile environment”** means an environment in which:

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

**“Human Factors principles”** means 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”** means human capabilities and limitations which have an impact on the safety, security and efficiency of aeronautical operations;

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

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

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

1. **“Non-precision approach (NPA) procedure”** means an instrument approach procedure designed for 2D instrument approach operations Type A;
2. **“Approach procedure with vertical guidance (APV)”** means a performance - based navigation or PBN instrument approach procedure designed for 3D instrument approach operations Type A; and
3. **“Precision approach (PA) procedure”** means An instrument approach procedure based on navigation systems or ILS, MLS, GLS and SBAS CAT I designed for 3D instrument approach operations Type A or B.

**“Instrument meteorological conditions (IMC)”** means Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, as defined in the Civil Aviation (Rules of the Air) Regulations, less than the minima specified for visual meteorological conditions;

**“Integrated survival suit”** means a survival suit which meets the combined requirements of the survival suit and life jacket;

**“Landing decision point (LDP)”** means the point used in determining landing performance from which, an engine failure occurring at this point, the landing may be safely continued or a balked landing initiated;

**“Low-visibility operations (LVO)”.** Means approach operations in RVRs less than 550 m or with a DH less than 60 m or 200 ft or take-off operations in RVRs less than 400 m;

**“Maintenance”** means the performance of tasks on an aircraft, engine, propeller or associated part required to ensure the continuing airworthiness of an aircraft, engine, propeller or associated part including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair;

**“Maintenance organization’s procedures manual**” means 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”** means 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”** means a document which contains a certification confirming that the maintenance work to which it relates has been completed in a satisfactory manner in accordance with appropriate airworthiness requirements;

**“Master minimum equipment list (MMEL)”** means 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”** means maximum certificated take-off mass;

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

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

**“Modification”** means a change to the type design of an aircraft, engine or propeller, and may include the embodiment of the modification which is a maintenance task subject to a maintenance release as per Part…Airworthiness of Aircraft;

**“Navigation specification”** means a set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications;

**“Required navigation performance (RNP) specification”** means 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;

**“Area navigation (RNAV) specification”** means 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;

**“Night”** The hours between the end of evening civil twilight and the beginning of morning civil twilight where 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”** means a hostile environment outside a congested area;

**“Non-hostile environment”** means an environment in which:

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

**“Obstacle clearance altitude (OCA) or obstacle clearance height (OCH)”** means 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;

**“Offshore operations”** means 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”** means 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;

**“Operational control”** means 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 credit**” means a credit authorized for operations with an advanced aircraft enabling a lower aerodrome operating minimum than would normally be authorized for a basic aircraft, based upon the performance of advanced aircraft systems utilizing the available external infrastructure

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

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

**“Operations in performance Class 3”** means operations with performance such that, in the event of an engine failure at any time during the flight, a forced landing will be required;

**“Operations manual”** means manual containing procedures, instructions and guidance for use by operational personnel in the execution of their duties;

**“Operations specifications”** means the authorizations including specific approvals, conditions and limitations associated with the air operator certificate and subject to the conditions in the operations manual;

**“Operator”** means the person, organization or enterprise engaged in or offering to engage in an aircraft operation;

**“Operator’s maintenance control manual”** means 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 aerodrome operating minimum (PBAOM)”** means a lower aerodrome operating minimum, for a given take-off, approach or landing operation, than is available when using a basic aircraft

**“Performance-based communication (PBC)”** means communication based on performance specifications applied to the provision of air traffic services;

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

**“Performance-based surveillance (PBS)”** means Surveillance based on performance specifications applied to the provision of air traffic services;

“**Pilot-in-command**” means 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;

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

**“Psychoactive substances”** means Alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded;

**“Repair”** The restoration of an aircraft, engine or associated part to an airworthy condition in accordance with the appropriate airworthiness requirements after it has been damaged or subjected to wear;

**“Required communication performance (RCP) specification”** means a set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based communication;

**“Required surveillance performance (RSP) specification”** means a set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based surveillance;

**“Rest period means”** a continuous and defined period of time, subsequent to and/or prior to duty, during which flight or cabin crew members are free of all duties;

**“Runway visual range (RVR)”** means 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”** means unavoidable landing or ditching with a reasonable expectancy of no injuries to persons in the aircraft or on the surface;

**“Safety management system (SMS)”** means a systematic approach to managing safety, including the necessary organizational structures, accountability, responsibilities, policies and procedures;

**“Series of flights”** means consecutive flights that:

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

**“Specific approval”.** means an approval which is documented in the Operations Specifications for commercial air transport operations or in the list of specific approvals for non-commercial operations;

**“State of Registry”** means the State on whose register the aircraft is entered;

**“State of the Aerodrome”** means the State in whose territory the aerodrome is located;

**“ State of Operator”** means the State in which the operator’s principal place of business is located or; if there is no such place of business, the operator permanent residence;

**“State of the principal location of a general aviation operator**”. Means the State in which the operator of a general aviation aircraft has its principal place of business or, if there is no such place of business, its permanent residence;

**“Synthetic vision system (SVS)”** means a system to display data-derived synthetic images of the external scene from the perspective of the flight deck;

**“Take-off and initial climb phase”** means that part of the flight from the start of take-off to 300 m or 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)”** means the point used in determining take-off performance from which, an engine failure occurring at this point, either a rejected take-off may be made or a take-off safely continued;

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

**“VTOSS”** means the minimum speed at which climb shall be achieved with the critical engine inoperative, the remaining engines operating within approved operating limits;

**OPS 3. Application**

1. This Part shall be applicable to the operation of all aeroplanes by operators authorised to conduct commercial air transport operations.

**OPERATION OF AIRCRAFT – COMMERCIAL AIR TRANSPORT (HELICOPTERS)**

*Interpretation*

2. In this Part, unless the context otherwise requires: —

“***Advanced aircraft”*** means aircraft with equipment in addition to that required for a basic aircraft for a given take-off, approach or landing operation

“***Aerial work*”** means an aircraft operation in which an aircraft is used for specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc;

**“*Aerodrome*”** means a defined area on land or water, including any buildings, installations and equipment intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft;

**“*Agreement summary****”.* means when an aircraft is operating under an Article 83 bis agreement between the State of Registry and another State, the agreement summary is a document transmitted with the Article 83 bis Agreement registered with the ICAO Council that identifies succinctly and clearly which functions and duties are transferred by the State of Registry to that other State;

**“*Aircraft****”* means 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”** means a manual, acceptable to the (Authority)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;

**“*Air operator certificate or AOC*”** means a certificate authorizing an operator to carry out specified commercial air transport operations;

**“*Air traffic service or ATS****”* is a generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service, area control service, approach control service or aerodrome control service;

**“*Airworthy****”* means the status of an aircraft, engine, propeller or part when it conforms to its approved design and is in a condition for safe operation;

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

Alternate heliports include the following:

1. **“Take-off alternate”** means an alternate heliport at which a helicopter would be able to land should this become necessary shortly after take-off and it is not possible to use the heliport of departure;
2. **“En-route alternate”** means an alternate heliport at which a helicopter would be able to land in the event that a diversion becomes necessary while en route;
3. **“Destination alternate”** means an alternate heliport at which a helicopter would be able to land should it become either impossible or inadvisable to land at the heliport of intended landing;

**“*Approach and landing phase helicopters***” means that part of the flight from 300 m or 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;

**“*Appropriate airworthiness requirements*”** means the comprehensive and detailed airworthiness codes established, adopted or accepted by a Contracting State for the class of aircraft, engine or propeller under consideration;

**“*Area navigation or RNAV*”** means 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;

***“Basic aircraft***” means an aircraft which has the minimum equipment required to perform the intended take-off, approach or landing operation.

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

**“*Combined vision system or CVS”*** means a system to display images from a combination of an enhanced vision system or EVS and a synthetic vision system or SVS;

***“COMAT”*** means operator material carried on an operator’s aircraft for the operator’s own purposes.

**“*Commercial air transport operation”*** means an aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire;

**“*Configuration deviation list or CDL”*** means 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”*** means in relation to a city, town or settlement, any area which is substantially used for residential, commercial or recreational purposes;

**“*Congested hostile environment*”** means a hostile environment within a congested area;

**“Continuing airworthiness”** means the set of processes by which an aircraft, engine, rotor or part complies with the applicable airworthiness requirements and remains in a condition for safe operation throughout its operating life;

**“*Continuing airworthiness records”*** means records which are related to the continuing airworthiness status of an aircraft, engine, rotor or associated part;

**“*Continuous descent final approach (CDFA)”*** means a technique, consistent with stabilized approach procedures, for flying the final approach segment (FAS) of an instrument non-precision approach (NPA) procedure as a continuous descent, without level-off, from an altitude or height at or above the final approach fix altitude/height to a point approximately 15 m or 50 ft above the landing runway threshold or the point where the flare manoeuvre begins for the type of aircraft flown; for the FAS of an NPA procedure followed by a circling approach, the CDFA technique applies until circling approach minima circling OCA or H or visual flight manoeuvre altitude or height are reached;

**“*Crew member*”** means a person assigned by an operator to duty on an aircraft during a flight duty period;

**“*Dangerous goods****”* means 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;

**“*Decision altitude (DA) or decision height (DH)”*** means a specified altitude or height in a three-dimensional or 3D instrument approach operation at which a missed approach must be initiated if the required visual reference to continue the approach has not been established;

**“*Defined point after take-off (DPATO)*”** means 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;

**“*Defined point before landing (DPBL)*”** means 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;

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

**“*Duty period*”** means a period which starts when a flight or cabin crew member is required by an operator to report for or to commence a duty and ends when that person is free from all duties;

**“*Electronic flight bag (EFB)*”** means an electronic information system, comprised of equipment and applications for flight crew, which allows for the storing, updating, displaying and processing of EFB functions to support flight operations or duties;

**“*Elevated heliport*”** means a heliport located on a raised structure on land;

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

1. ***“Automatic fixed ELT (ELT (AF))”*** means an automatically activated ELT which is permanently attached to an aircraft.
2. ***“Automatic portable ELT (ELT (AP))”*** means an automatically activated ELT which is rigidly attached to an aircraft but readily removable from the aircraft.
3. ***“Automatic deployable ELT (ELT(AD))”*** means 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.
4. **“Survival ELT (ELT(S))”** means an ELT which is removable from an aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by survivors.

***“Engine”*** means a unit used or intended to be used for aircraft propulsion. consisting of at least those components and equipment necessary for functioning and control, but excludes the propeller and rotors where applicable;

**“*Enhanced vision system or EVS”*** means a system to display electronic real-time images of the external scene achieved through the use of image sensors;

***“En-route phase*”** means 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;

*“****Fatigue”*** means a physiological state of reduced mental or physical performance capability resulting from sleep loss, extended wakefulness, circadian phase, or workload, mental or physical activity that can impair a person’s alertness and ability to adequately perform safety-related operational duties;

**“*Fatigue risk management system (FRMS)*”.** means data-driven means of continuously monitoring and managing fatigue-related safety risks, based upon scientific principles and knowledge as well as operational experience that aims to ensure relevant personnel are performing at adequate levels of alertness;

**“*Final approach and take-off area (FATO)*”** means 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;

**“*Final approach segment (FAS)”*** means that segment of an instrument approach procedure in which alignment and descent for landing are accomplished;

**“*Flight crew member****”* means a licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period;

**“*Flight duty period”*** means a period which commences when a flight or cabin crew member is required to report for duty that includes a flight or a series of flights and which finishes when the aircraft finally comes to rest and the engines are shut down at the end of the last flight on which the flight or cabin crew is a crew member;

**“*Flight manual*”** means 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 dispatcher”*** means person designated by the operator to engage in the control and supervision of flight operations, whether licensed or not, suitably qualified in accordance with Part…Personnel Licensing who supports, briefs and assists the pilot-in-command in the safe conduct of the flight;

***“Flight plan”*** means a specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft;

***“Flight recorder***” means any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation;

***“Automatic deployable flight recorder (ADFR)”*** means a combination flight recorder installed on the aircraft which is capable of automatically deploying from the aircraft;

“***Flight safety documents system***” means 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”*** means any one of the following three types of apparatus in which flight conditions are simulated on the ground;

1. ***“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;
2. ***“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;
3. ***“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” means 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;

***“General aviation operation”*** means an aircraft operation other than a commercial air transport operation or an aerial work operation;

***“Ground handling”*** means services necessary for an aircraft’s arrival at, and departure from, an airport, other than air traffic services;

***“Head-up display (HUD)”*** means a display system that presents flight information into the pilot’s forward external field of view;

***“Helicopter”*** means 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;

***“Helideck”*** means a heliport located on a floating or fixed offshore structure;

***“Heliport”*** means 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;

***“Heliport operating minima”*** means the limits of usability of a heliport for:

1. take-off, expressed in terms of runway visual range or visibility and, where necessary, cloud conditions;
2. landing in 2D instrument approach operations, expressed in terms of visibility and/or runway visual range, minimum descent altitude or MDA or minimum descent height MDH and, where necessary, cloud conditions; and
3. landing in 3D instrument approach operations, expressed in terms of visibility or runway visual range and decision altitude or DA or descent height or DH as appropriate to the type or category of the operation;

***“Hostile environment”*** means an environment in which:

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

***“Human Factors principles”*** means 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”*** means human capabilities and limitations which have an impact on the safety, security and efficiency of aeronautical operations;

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

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

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

1. ***“Non-precision approach (NPA) procedure”*** means an instrument approach procedure designed for 2D instrument approach operations Type A;
2. ***“Approach procedure with vertical guidance (APV)”*** means a performance - based navigation or PBN instrument approach procedure designed for 3D instrument approach operations Type A; and
3. ***“Precision approach (PA) procedure”*** means An instrument approach procedure based on navigation systems or ILS, MLS, GLS and SBAS CAT I designed for 3D instrument approach operations Type A or B.

***“Instrument meteorological conditions (IMC)”*** means Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, as defined in the Civil Aviation (Rules of the Air) Regulations, less than the minima specified for visual meteorological conditions;

***“Integrated survival suit”*** means a survival suit which meets the combined requirements of the survival suit and life jacket;

***“Landing decision point (LDP)”*** means the point used in determining landing performance from which, an engine failure occurring at this point, the landing may be safely continued or a balked landing initiated;

***“Low-visibility operations (LVO)”.*** Means approach operations in RVRs less than 550 m or with a DH less than 60 m or 200 ft or take-off operations in RVRs less than 400 m;

***“Maintenance”*** means the performance of tasks on an aircraft, engine, propeller or associated part required to ensure the continuing airworthiness of an aircraft, engine, propeller or associated part including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair;

***“Maintenance organization’s procedures manual***” means 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”*** means 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”*** means a document which contains a certification confirming that the maintenance work to which it relates has been completed in a satisfactory manner in accordance with appropriate airworthiness requirements;

***“Master minimum equipment list (MMEL)”*** means 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”*** means maximum certificated take-off mass;

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

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

***“Modification”*** means a change to the type design of an aircraft, engine or propeller, and may include the embodiment of the modification which is a maintenance task subject to a maintenance release as per Part…Airworthiness of Aircraft;

***“Navigation specification”*** means a set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications;

***“Required navigation performance (RNP) specification”*** means 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;

***“Area navigation (RNAV) specification”*** means 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;

***“Night”*** The hours between the end of evening civil twilight and the beginning of morning civil twilight where 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”*** means a hostile environment outside a congested area;

***“Non-hostile environment”*** means an environment in which:

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

***“Obstacle clearance altitude (OCA) or obstacle clearance height (OCH)”*** means 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;

***“Offshore operations”*** means 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”*** means 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;

***“Operational control”*** means 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 credit***” means a credit authorized for operations with an advanced aircraft enabling a lower aerodrome operating minimum than would normally be authorized for a basic aircraft, based upon the performance of advanced aircraft systems utilizing the available external infrastructure

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

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

***“Operations in performance Class 3”*** means operations with performance such that, in the event of an engine failure at any time during the flight, a forced landing will be required;

***“Operations manual”*** means manual containing procedures, instructions and guidance for use by operational personnel in the execution of their duties;

***“Operations specifications”*** means the authorizations including specific approvals, conditions and limitations associated with the air operator certificate and subject to the conditions in the operations manual;

***“Operator”*** means the person, organization or enterprise engaged in or offering to engage in an aircraft operation;

***“Operator’s maintenance control manual”*** means 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 aerodrome operating minimum (PBAOM)”*** means a lower aerodrome operating minimum, for a given take-off, approach or landing operation, than is available when using a basic aircraft

***“Performance-based communication (PBC)”*** means communication based on performance specifications applied to the provision of air traffic services;

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

***“Performance-based surveillance (PBS)”*** means Surveillance based on performance specifications applied to the provision of air traffic services;

*“Pilot-in-command”* means 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;

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

***“Psychoactive substances”*** means Alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded;

***“Repair”*** The restoration of an aircraft, engine or associated part to an airworthy condition in accordance with the appropriate airworthiness requirements after it has been damaged or subjected to wear;

***“Required communication performance (RCP) specification”*** means a set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based communication;

***“Required surveillance performance (RSP) specification”*** means a set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based surveillance;

***“Rest period means”*** a continuous and defined period of time, subsequent to and/or prior to duty, during which flight or cabin crew members are free of all duties;

***“Runway visual range (RVR)”*** means 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”*** means unavoidable landing or ditching with a reasonable expectancy of no injuries to persons in the aircraft or on the surface;

***“Safety management system (SMS)”*** means a systematic approach to managing safety, including the necessary organizational structures, accountability, responsibilities, policies and procedures;

**“Series of flights”** means consecutive flights that:

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

***“Specific approval”.*** means an approval which is documented in the Operations Specifications for commercial air transport operations or in the list of specific approvals for non-commercial operations;

***“State of Registry”*** means the State on whose register the aircraft is entered;

***“State of the Aerodrome”*** means the State in whose territory the aerodrome is located;

***“ State of Operator”*** means the State in which the operator’s principal place of business is located or; if there is no such place of business, the operator permanent residence;

***“State of the principal location of a general aviation operator***”. Means the State in which the operator of a general aviation aircraft has its principal place of business or, if there is no such place of business, its permanent residence;

***“Synthetic vision system (SVS)”*** means a system to display data-derived synthetic images of the external scene from the perspective of the flight deck;

***“Take-off and initial climb phase”*** means that part of the flight from the start of take-off to 300 m or 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)”*** means the point used in determining take-off performance from which, an engine failure occurring at this point, either a rejected take-off may be made or a take-off safely continued;

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

***“VTOSS”*** means the minimum speed at which climb shall be achieved with the critical engine inoperative, the remaining engines operating within approved operating limits;

*Applicability*

3. This Part shall be applicable to all helicopters engaged in commercial air transport operations.

**PART II**

**GENERAL REQUIREMENTS**

***OPS 4. Compliance with laws, regulations and procedures***

(1) Every operator shall ensure that all employees when abroad know that comply with the laws, regulations and procedures of those States in which their operations are conducted.

(2) Every operator 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.

(3) Every operator shall ensure that other members of the flight crew are familiar with this Part and operator procedures as are pertinent to the performance of their respective duties in the operation of the helicopter.

(4) Every operator or a designated representative shall have responsibility for operational control.

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

(6) Every operator shall delegate responsibility for operational control only to—

(a) the pilot-in-command;

(b) flight dispatcher if the operator’s approved method control and supervision flight operations requires the use a flight dispatcher

(7) Where an emergency situation which endangers the safety of the helicopter or persons becomes known first to flight dispatcher, action by that person in accordance with section 46 shall include, notification to the appropriate authorities of the nature of the situation without delay, and requests for assistance where required.

(8) Where 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.

(9) Where required by the State in which the incident occurs, the pilot-in-command shall, within ten days, submit a report on any such violation to the appropriate authority of that State and a copy thereto to the Authority.

(10) Every operator 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.

(11) Every operator shall ensure that flight crew members demonstrate the ability to speak and understand the English language used for radiotelephony communications as specified in Part 2 Personnel Licensing.

***OPS 5. Compliance by a foreign operator with laws, regulations and procedures of the Authority***

(1) Where the Authority identifies a case of non-compliance or suspected non-compliance by a foreign operator with laws, regulations and procedures applicable within [ State], or a similar serious safety issue with that operator, the Authority shall immediately notify the operator and, where the issue warrants it, the State of the Operator.

(2) Where the State of Operator and the State of Registry are different, the notification under sub section (1) shall also be made to the State of Registry, where the issue falls within the responsibilities of that State and warrants a notification.

(3) In the case of notification to States as specified in sub sections (1) and (2), where the issue and its resolution warrant it, the State in which the operation is conducted shall engage in consultations with the Authority and the State of Registry, as applicable, concerning the safety standards maintained by the operator.

(4) The operator of a helicopter of a certified 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 safety management system.

(5) A flight data analysis programme shall contain adequate safeguards to protect the source(s) of the data in accordance with Appendix 3 to Annex 19.

(6) States shall not allow the use of recordings or transcripts of CVR, CARS, Class A AIR and Class A AIRS for purposes other than the investigation of an accident or incident as per Annex 13, except where the recordings or transcripts are:

1. related to a safety-related event identified in the context of a safety management system; are restricted to the relevant portions of a de-identified transcript of the recording; and are subject to the protections accorded by Annex 19;

b) sought for use in criminal proceedings not related to an event involving an accident or incident investigation and are subject to the protections accorded by Annex 19; or

c) used for inspections of flight recorder systems as provided in Section 6 of Appendix 4.

(7) States shall not allow the use of recordings or transcripts of FDR, ADRS, Class B and C AIR, and Class B and C AIRS for purposes other than the investigation of an accident or incident as per Annex 13, except where the recordings or transcripts are subject to the protections accorded by Annex 19 and are:

a) used by the operator for airworthiness or maintenance purposes;

b)used by the operator in the operation of a flight data analysis programme as provided in Section II of this Annex;

c)sought for use in proceedings not related to an event involving an accident or incident investigation;

d) de-identified; or

e) disclosed under secure procedures.

(8) The operator shall establish a flight safety documents system, for the use and guidance of operational personnel, as part of its safety management system.

***OPS 6. Safety management***

(1) The operator of a helicopter of a certificated take-off mass in excess of 7000 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 safety management system.

(2) Where the operator contracts the operation of a flight data analysis programme to another party the operator shall retain overall responsibility for the maintenance of such a programme.

(3) A flight data analysis programme shall contain adequate safeguards to protect the source of the data in accordance with XXXX Schedule to Part 17 afety Management

(3) The Authority shall not allow the use of recordings or transcripts of CVR, CARS, Class A AIR and Class A AIRS for purposes other than the investigation of an accident or incident in accordance with Civil Aviation (Accidents and Incidents Investigation) Regulations, except where the recordings or transcripts are—

1. related to a safety-related event identified in the context of a safety management system;
2. restricted to the relevant portions of a de-identified transcript of the recording; and are subject to the protections accorded in Part 17.Safety Management;
3. sought for use in criminal proceedings not related to an event involving an accident or incident investigation and are subject to the protections accorded by Part 17 Safety Management;
4. used for inspections of flight recorder systems as provided in Fourth Schedule to this Part

(5) The Authority shall not allow the use of recordings or transcripts of FDR, ADRS as well as Class B and C AIR, and Class B and C AIRS for purposes other than the investigation of an accident or incident in accordance with the Civil Aviation (Aircraft Accident and Incident Investigation) Regulations except where the recordings or transcripts are subject to the protections accorded by Part 17 Safety Management and are—

1. used by the operator for airworthiness or maintenance purposes;
2. used by the operator in the operation of a flight data analysis programme required in these Regulations;
3. sought for use in proceedings not related to an event involving an accident or incident investigation;
4. de-identified; or
5. disclosed under secure procedures.

(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.

**OPS 7. Use of Psychoactive substances**

Provisions for use of psychoactive substances are contained in Part 2Personnel Licencing and Part 18 Rules Of The Air.

**PART III**

**FLIGHT OPERATIONS**

***OPS 8. Operating facilities***

(1) An operator shall ensure that a flight shall not be commenced unless it has been ascertained by every reasonable means available that the ground and 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.

(2) The 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.

***OPS 9. Operational Certification and supervision - Air operator certificate***

(1) No person shall engage in commercial air transport operations unless in possession of a valid air operator certificate issued by the Authority.

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

(3) The issue of an air operator certificate by the Authority shall be dependent upon the operator demonstrating an adequate organisation, 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.

(4) The operator shall develop policies and procedures for third parties that perform work on its behalf.

(5) The continued validity of an air operator certificate shall depend upon the operator maintaining the requirements in subsection (3) under the supervision of the Authority.

(6) The air operator certificate shall be in the form laid out in the layout of the Third Schedule and shall contain at least the following information—

1. the State of the Operator and the issuing Authority;
2. the air operator certificate number and its expiration date;
3. the operator name, trading name (if different) and address of the principal place of business;
4. the date of issue and the name, signature and title of the authority representative; and
5. the location, in a controlled document carried on board, where the contact details of operational management can be found;

(7) The operations specifications associated with the air operator certificate shall be in the form laid out in the Third Schedule and shall contain at least the following information—

1. each aircraft model in the operator’s fleet, identified by aircraft make, model and series including the list of authorisations, conditions and limitations;
2. issuing authority contact details;
3. operator name and AOC number;
4. date of issue and signature of the authority representative;
5. types and area of operations; and
6. special limitations and authorisations.

(8) The Authority shall establish a system for both certification and the continued surveillance of the operator in accordance with First Schedule and First Schedule to Part 17 Safety Management First Schedule to ensure that the required standards of operations established in these regulations are maintained.

(9) The operations specifications associated with the air operator certificate shall contain at least the information listed in Appendix 3, paragraph 3, and shall follow the layout of Appendix 3, paragraph 3.

(10) 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.

***OPS 10. Surveillance of operations by a foreign operator***

(1) The Authority shall recognise 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 Annex 6 Part III and Annex 19.

(2) The Authority shall establish a programme with procedures for the surveillance of operations in [State] by foreign operators and for taking appropriate action when necessary to preserve safety.

(3) Every operator shall meet and maintain the requirements established by the States in which the operations are conducted.

***OPS 11. Operations manual***

(1) An operator shall provide for the use and guidance of operations personnel concerned; an approved operations manual as described in the Eighth Schedule to this Part.

(2) An operator shall amend or revise as is necessary to ensure that the information contained therein is kept up to date and all such amendments or revisions shall be notified to all personnel that are required to use the manual.

(3) An operator shall provide a copy of the operations manual together with all amendments or revisions, for review, acceptance and where required, approval by the Authority.

(4) An operator shall incorporate in the operations manual such mandatory material as the Authority may require.

***OPS 12. Operating instructions — General***

(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) 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

(3) No person shall turn a helicopter rotor under power, for the purpose of flight, without a qualified pilot at the controls.

(4) An 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.

(5) An operator shall 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

(6) The information in sub section (4) shall be based on the helicopter manufacturer’s or other data, acceptable to the Authority, and shall be included in the operations manual.

***OPS 13. 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.

***OPS 14. Checklists***

(1) An operator shall provide normal, abnormal and emergency procedures checklists that shall be used by flight crew 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 and the helicopter flight manual or other documents associated with the certificate of airworthiness and otherwise in the operations manual.

(2) An operator shall observe Human Factors principles in the design and utilisation of the checklists specified in subsection (1).

***OPS 15. Minimum flight altitudes (operations under IFR)***

(1) An operator shall 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) 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.

(3) The minimum flight altitudes determined in accordance with the method in sub section (2) shall not be lower than the minimum flight altitudes specified in Part 18 Rules of the Air.

(4) The method for establishing the minimum flight altitudes shall be approved by the Authority.

(5) The Authority shall approve minimum flight altitudes method only after consideration of the probable effects of the following factors on the safety of the operation—

1. the accuracy and reliability with which the position of the helicopter can be determined;
2. the inaccuracies in the indications of the altimeters used;
3. the characteristics of the terrain such as sudden changes in the elevation;
4. the probability of encountering unfavourable meteorological conditions, such as severe turbulence and descending air currents;
5. possible inaccuracies in aeronautical charts; and
6. airspace restrictions.

***OPS 16. Heliport or landing location operating minima***

(1) An operator shall establish operating minima for each heliport or landing location to be used in operations and shall have the method of determination of such minima approved by the Authority.

(2) The minima specified in subsection (1) shall not be lower than any that may be established for such heliports or landing locations by the State of the Aerodrome, except when specifically approved by that State.

(3) The Authority shall authorise operational credit or credits for operations with advanced aircraft.

(4) Where the operational credit referred to in sub section (3) relates to low visibility operations, the Authority shall issue a specific approval.

(5) The authorisations specified in sub section (3) shall not affect the classification of the instrument approach procedure.

(6) For the purposes of this Part “Operational credit” includes—

1. for the purposes of an approach ban, a minima below the heliport or landing location operating minima;
2. reducing or satisfying the visibility requirements; or
3. requiring fewer ground facilities as compensated for by airborne capabilities.

**OPS 17. Heliport or landing location operating minima**

(1) When issuing a specific approval for the operational credit, the State of the operator shall ensure that the—

1. aircraft meets the appropriate airworthiness certification requirements ;
2. information necessary to support effective crew tasks for the operation is appropriately available to both pilots where the number of flight crew members specified in the operations manual is more than one;
3. operator has carried out a safety risk assessment of the operations supported by the equipment;
4. operator has established and documented normal and abnormal procedures and MEL;
5. operator has established a training program for the flight crew members and relevant personnel involved in the flight preparations
6. operator has established a system for data collection, evaluation and trend monitoring for low visibility operations for which there is an operational credit and; operator has instituted appropriate procedures in respect of continuing airworthiness (maintenance and repair) practices and programmes.

(2) For operations with operational credit with minima above those related to low visibility operations, the Authority shall establish criteria for the safe operation of the aircraft.

(3) The Authority shall require that in establishing the operating minima for each heliport or landing location which will apply to any particular operation the operator shall take full account of the following—

1. the type, performance and handling characteristics of the helicopter and any conditions or limitations stated in the flight manual;
2. the composition of the flight crew, their competence and experience;
3. the physical characteristics of the heliport, and direction of approach;
4. the adequacy and performance of the available visual and non-visual ground aids;
5. the equipment available on the helicopter for the purpose of navigation, acquisition of visual references and control of the flight path during the approach, landing and missed approach;
6. the obstacles in the approach and missed approach areas and the obstacle clearance altitude or height for the instrument approach procedures;
7. the means used to determine and report meteorological conditions;
8. the obstacles in the climb-out areas and necessary clearance margins;
9. the conditions prescribed in the operations specifications; and
10. any minima that may be promulgated by the State of the aerodrome, heliport or landing location.

(4) Instrument approach operations shall be classified based on the designed lowest operating minima below which an approach operation shall only be continued with the required visual reference as follows:

1. Type A- a minimum descent height or decision height at or above 75 m (250 ft); and
2. Type B- a decision height below 75 m (250 ft) which are catergorised as follows
3. Category I (CAT I)- 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;
4. Category II (CAT II)- 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 300 m; and
5. Category III (CAT III) - a decision height lower than 30 m (100 ft) or no decision height and a runway visual range less than 300 m or no runway visual range limitations.

(5) The Authority shall issue a specific approval for instrument approach operations in low visibility which shall only be conducted when RVR information is provided.

(6) For take-off in low visibility, the Authority shall issue a specific approval for the minimum take-off RVR.

(7) For instrument approach operations, heliport or landing location operating minima below 800 m visibility shall not be authorised unless RVR information or an accurate measurement or observation of visibility is provided.

(8) The operating minima for 2D instrument approach operations using instrument approach procedures shall be determined by establishing a minimum descent altitude (MDA) or minimum descent height (MDH), minimum visibility and, where necessary, cloud conditions.

(9) The operating minima for 3D instrument approach operations using instrument approach procedures shall be determined by establishing a decision altitude (DA) or decision height (DH) and the minimum visibility or RVR.

**OPS 18. Fuel and oil records**

(1) An operator shall maintain fuel and oil records to enable the Authority to ascertain that, for each flight, the requirements of Section 31 have been complied with.

(2) An operator shall retain fuel and oil records for a period of 3 months.

**OPS 19. Crew – Pilot-in- Command**

(1) An operator shall designate one pilot to act as pilot-in-command for each flight.

**OPS 020. Passengers**

(1)An operator shall ensure that passengers are made familiar with the location and use of—

1. seat belts or harnesses;
2. emergency exits;
3. life jackets, where the carriage of life jackets is prescribed;
4. oxygen dispensing equipment, where the provision of oxygen for the use of passengers is prescribed; and
5. other emergency equipment provided for individual use, including passenger emergency briefing cards.

(2) An 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.

(3) An operator shall ensure that in an emergency during flight, passengers are instructed in such emergency action as may be appropriate to the circumstances.

(4) An 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.

**OPS 021. Over-water flights**

(1) An operator shall ensure that a helicopter on flights over water in a hostile environment in accordance with section 112 shall be certificated for ditching and the sea state shall be an integral part of ditching information.

**OPS 022. Flight preparation**

(1) An operator shall not commence a flight, or series of flights until flight preparation forms have been completed certifying that the pilot-in-command is satisfied that:

1. the helicopter is airworthy;
2. the instruments and equipment prescribed in Sub Part VI, for the particular type of operation to be undertaken, are installed and are sufficient for the flight;
3. a maintenance release as prescribed in section 106 has been issued in respect of the helicopter;
4. 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;
5. any load carried is properly distributed and safely secured;
6. a check has been completed indicating that the operating limitations as described in Sub Part IV can be complied with for the flight to be undertaken; and
7. Requirements of section 23 have been complied with.

(2) Completed flight preparation forms shall be kept by the operator for a period of 3 months.

**OPS 023. Operational flight planning**

(1) An operator shall complete an operational flight plan for every intended flight or series of flights

(2) An operational flight plan shall be approved and signed by the pilot-in-command, and shall be lodged with the appropriate authority.

(3) The operator shall determine the most efficient means of lodging the operational flight plan specified in subsection (1).

(4) The operations manual shall describe the content and use of the operational flight plan.

**OPS 024. Take-off alternate heliport**

(1) An operator shall select and specify in the operational flight plan a take-off alternate heliport where the weather conditions at the heliport of departure are at or below the applicable heliport operating minima.

(2) For a heliport to be selected as a take-off alternate heliport, 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.

**OPS 025. Destination alternate heliport**

(1) An operator shall ensure that for a flight to be conducted in accordance with IFR, at least one destination alternate heliport is specified in the operational flight plan and the flight plan, unless—

1. 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 Authority; or
2. the heliport of intended landing is isolated and no alternate is available, and in such a case a point of no return (PNR) shall be determined.

(2) An operator shall ensure that for a heliport selected as a destination alternate, the available information indicate that, at the estimated time of use, the conditions will be at or above the heliport operating minima for that operation.

(3) An operator shall ensure that for a flight departing to a destination which is forecast to be below the heliport operating minima, two destination alternates are selected.

(4) The first destination alternate stated sub section (3), shall be at or above the heliport operating minima for destination and the second at or above the heliport operating minima for the alternate.

**OPS 026. Offshore alternate heliport**

(1) The Authority shall issue a specific approval for the operational use of offshore destination alternate heliports.

(2) An operator may specify a helideck as an offshore destination alternate heliport when the closest onshore destination alternate Is not within achievable range of the helicopter and the specification is subject to the following conditions—

(a) a helideck shall only be used as an offshore destination alternate heliport after the PNR and when an onshore heliport is not geographically available and prior to the PNR, an onshore destination alternate heliport shall be used;

(b) an operator shall have a risk assessment process detailed in the operations manual for the utilisation of helidecks as offshore destination alternate heliports and conduct such an assessment prior to their selection and use;

(c) the operator has established specific procedures and appropriate training programmes in the operations manual for offshore destination alternate heliports operations;

(d) the operator shall have pre-surveyed, and assessed for suitability, any helideck intended to be used as an offshore destination alternate heliport and have the information published in an appropriate form in the operations manual including the orientation of the helideck;

(e) the helicopter shall have a one engine inoperative (OEI) landing capability at the offshore destination alternate heliport; and

(f) the MEL shall contain specific provisions for this type of operation.

(3) The use of an offshore destination alternate heliport shall be restricted to helicopters which can achieve OEI in ground effect (IGE) hover at an appropriate power at the offshore destination alternate heliport.

(4) Where the surface of the helideck or prevailing conditions, especially wind velocity, precludes an OEI IGE, OEI out of ground effect (OGE) hover performance at an appropriate power rating shall be used to compute the landing mass.

(5) The landing mass shall be calculated from graphs provided in the operations manual and due account shall be taken of helicopter configuration, environmental conditions and the operation of systems that have an adverse effect on performance.

(6) The planned landing mass of the helicopter, including crew, passengers, baggage, cargo and thirty minutes final reserve fuel should not exceed the OEI landing mass at the time of approach to the offshore destination alternate heliport. 27

**OPS 027. Meteorological conditions-IFR**

(1) The operator’s risk assessment process shall take into consideration at least the following:

(a) the type and circumstances of the operation;

(b) the area over which the operation is being conducted, including sea conditions, survivability and search and rescue facilities;

(c) the availability and suitability of the helideck for use as an offshore destination alternate heliport, including the physical characteristics, dimensions, configuration and obstacle clearance, the effect of wind direction and strength, and turbulence;

(d) the type of helicopter(s) being used;

(e) mechanical reliability of the helicopter engines and critical control systems and components;

(f) the training and operational procedures, including mitigation of the consequences of helicopter technical failures;

(g) specific mitigation measures;

(h) helicopter equipment;

(i) spare payload capacity for the carriage of additional fuel;

(j) weather minima, taking into account the accuracy and reliability of meteorological information; and

(k) communications and aircraft tracking facilities.

(2)Training programmes shall ensure that the requirements of Section 113 are complied with, such as, but not limited to, route qualification, flight preparation, concept of operations with offshore destination alternate heliports and criteria for their use.

(3) Training programme refers to the training for pilots and other relevant personnel (including, as required, meteorological observers and helideck personnel) involved in such operations.

(4) An operator panning to use an offshore destination alternate heliport, shall ensure that the meteorological observations, both at the offshore destination and the offshore destination alternate heliports, are taken by an observer acceptable to the designated meteorological authority.

(5)No operator shall use offshore destination alternate heliports for payload enhancement.

(6) To demonstrate the mechanical reliability of critical control systems and critical components of the helicopter, the operator shall install and utilize a health and usage monitoring system with tailored criteria for this type of operation.

(7) The heliport operating minima for the offshore destination and offshore destination alternate heliport required under Section 16 shall make due allowance for the availability and reliability of weather information and the geographic environment.

 (8) An operator shall specify cloud ceiling and visibility criteria relevant to the helideck elevation and location.

(9) To use an offshore destination alternate helideck, the operator shall ensure that, within 60 NM of the destination helideck and alternate helideck, fog is not present nor forecasted during the period commencing one hour before and ending one hour after the expected time of arrival at the offshore destination or offshore destination alternate helideck.

 (10) An offshore destination alternate heliport or helideck shall be more than 30 NM from the original destination to reduce the likelihood of a localized weather event precluding landings at both the offshore destination and the offshore destination alternate heliport or helideck*.*

(11) An operator shall ensure that, before passing the PNR, the following actions have been completed:

(a) confirmation that navigation to the offshore destination and offshore destination alternate heliport is assured;

(b) radio contact with the offshore destination and offshore destination alternate heliport (or master station) is established;

(c) the landing forecast at the offshore destination and offshore destination alternate heliport are obtained and confirmed to be at or above the required minima;

(d) the requirements for OEI landing are verified against the latest reported weather conditions to ensure that they can be met; and

(e) to the extent possible, having considered information on current and forecast use of the offshore destination alternate heliport, and on conditions prevailing, the availability of the offshore destination alternate heliport will be guaranteed by the helideck provider until the landing at the offshore destination, or the offshore destination alternate heliport, is achieved

**OPS 028. Meteorological conditions**

(1) No operator shall commence a flight—

(a) in accordance with VFR 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 enable compliance with these Regulations.

(b) in accordance with IFR unless information is available which indicates that conditions at the destination heliport or landing location or, when an alternate is required, at least one alternate heliport will, at the estimated time of arrival, be at or above the heliport operating minima.

**OPS 029. Visibility**

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

**OPS 030. Icing Conditions**

(1) No operator shall commence a flight in known or expected icing conditions unless the helicopter is certificated and equipped to cope with such conditions.

(2) 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, where necessary, has been given appropriate de-icing or anti-icing treatment.

(3) An operator shall ensure that 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.

**OPS 031. Fuel and oil requirements**

(1) No operator shall commence a helicopter flight is 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.

(2) In addition to requirements of sub section (1), a reserve shall be carried to provide for contingencies.

**OPS 032. IFR Operations**

(1) An operator shall ensure that the fuel and oil carried in order to comply with section 31 shall, in the case of VFR operations, be at least the amount to allow the helicopter to:

1. fly to the landing site to which the flight is planned;
2. have final reserve fuel to fly thereafter for a period of 20 minutes at best-range speed; and
3. have an additional amount of fuel to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the Authority.
4. 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 to allow the helicopter

**OPS 033. Refuelling with passengers on board or rotor turning**

(1) An operator shall ensure that the fuel and oil carried in order to comply with section 31 shall, in the case of IFR operations, be at least the amount to allow the helicopter:

1. where an alternate is not required, in accordance with section 25, to fly to and execute an approach at the heliport or landing location to which the flight is planned, and thereafter to have:
2. final reserve fuel to fly 30 minutes at holding speed at 450 m (1 500 ft) above the destination heliport or landing location under standard temperature conditions and approach and land; and
3. an additional amount of fuel to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the Authority.
4. where an alternate is required to fly to, and execute an approach, and a missed approach, at the heliport or landing location to which the flight is planned, and thereafter:
5. fly to, and execute an approach at the alternate specified in the flight plan; and then;
6. have final reserve fuel to fly for 30 minutes at holding speed at 450 m (1 500) ft above the alternate under standard temperature conditions, and approach and land; and
7. have an additional amount of fuel to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the Authority.
8. Where no alternate heliport or landing location is available, with respect to section 25, in circumstances including where 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) In computing the fuel and oil required in section 31 , at least the following shall be considered:

1. meteorological conditions forecast;
2. expected air traffic control routings and traffic delays;
3. for IFR flight, one instrument approach at the destination heliport, including a missed approach;
4. the procedures prescribed in the operations manual for loss of pressurization, where applicable, or failure of one engine while en route; and
5. any other conditions that may delay the landing of the helicopter or increase fuel or oil consumption.

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

**OPS 034. Refuelling with passengers on board or rotors turning**

(1) No person shall refuel a helicopter, rotors stopped or turning, when—

1. passengers are embarking or disembarking; or
2. oxygen is being replenished.

(2) An operator shall ensure that when the helicopter is refuelled with passengers on board, rotors stopped or turning, it is properly attended by sufficient qualified personnel, ready to initiate and direct an evacuation of the helicopter by the most practical, safe and expeditious means available.

(3) In order to achieve the requirements of sub section (2):

1. the flight crew shall ensure that the passengers are briefed on what actions to take if an incident occurs during refuelling.
2. a constant two-way communication shall be maintained by the helicopter’s intercommunication system or other suitable means between the ground crew supervising the refuelling and the qualified personnel on board the helicopter; and
3. during an emergency shutdown procedure, the flight crew shall ensure that any personnel or passengers outside the helicopter are clear of the rotor area.

(4) An operator shall establish procedures and specify conditions under which refuelling specified in sub section (2) may be carried out.

(5) In addition to the requirements of sub section (2), operational procedures shall specify that at least the following precautions are taken—

1. doors on the refuelling side of the helicopter remain closed where possible, unless these are the only suitable exits;
2. doors on the non-refuelling side of the helicopter remain open, weather permitting, unless otherwise specified by the helicopter flight manual (HFM);
3. fire-fighting facilities of the appropriate scale are positioned so as to be immediately available in the event of a fire;
4. where the presence of fuel vapour is detected inside the helicopter, or any other hazard arises during refuelling, fuelling shall be stopped immediately;
5. the ground or deck area beneath the exits intended for emergency evacuation shall be kept clear;
6. seat belts shall be unfastened to facilitate rapid egress; and
7. where rotors are turning, only ongoing passengers shall remain on board.

(6) No person shall refuel a helicopter with aviation gasoline (AVGAS), or wide-cut type fuel or a mixture of these types of fuel, when passengers are on board.

(7) No person shall defuel a helicopter at any time when—

1. passengers remain on board; or
2. passengers are embarking or disembarking; or
3. oxygen is being replenished.

**OPS 035. Oxygen supply**

(1) Approximate altitudes in the Standard Atmosphere corresponding to the values of absolute pressure used in this Part shall be 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) No operator shall commence a flight to be operated at flight altitudes at which the atmospheric pressure in personnel compartments will be less than 700 hPa unless sufficient stored breathing oxygen is carried to supply—

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

(3) No operator shall commence a flight to be operated with a pressurized helicopter 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 pressurisation, for any period that the atmospheric pressure in any compartment occupied by them would be less than 700 hPa.

(4) Where the helicopter is operated at flight altitudes at which the atmospheric pressure is more than 376 hPa and cannot descend safely within 4 minutes to a flight altitude at which the atmospheric pressure is equal to 620 hPa, there shall be no less than a 10 minute supply for the occupants of the passenger compartment.

**OPS 036. In-flight procedures – heliport operating minima**

(1) No Pilot in command shall continue a flight 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 destination alternate heliport, in compliance with the operating minima established in accordance with Section 16.

(2 The pilot in command—

1. shall not continue an instrument approach below 300 m (1 000 ft) above the heliport elevation or into the final approach segment unless the reported visibility or controlling RVR is at or above the heliport operating minima.
2. after entering the final approach segment or after descending below 300 m (1 000 ft) above the heliport elevation, the reported visibility or controlling RVR falls below the specified minimum, may continue the approach to DA/H or MDA/H;

(c) shall not continue the approach-to-land at any heliport beyond a point at which the limits of the operating minima specified for that heliport would be infringed.

**OPS 037. Meteorological Observations**

An operator shall comply with the requirements for making meteorological observations on board helicopter in flight and for recording and reporting them as specified in Part 32 Meteorology Services for Air Navigation.

**OPS 038. Hazardous flight conditions**

Any person who encounters hazardous flight conditions, other than those associated with meteorological conditions, shall report to the appropriate aeronautical station as soon as possible and the reports so rendered shall give such details as may be pertinent to the safety of other aircraft.

**OPS 039. Flight crew members at duty stations**

(1) During take-off and landing all flight crew members required to be on flight deck duty shall be at their stations.

(2) Whilst enroute 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.

(3) All flight crew members shall keep their seat belts fastened when at their stations.

(4) Any flight crew member occupying a pilot’s seat shall keep the safety harness fastened during the take-off and landing phases and 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 shall remain fastened.

**OPS 040. 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 accordance with Section 35.

**OPS 041. Safeguarding of cabin crew and passengers in pressurized helicopter in the event of loss ofpressurization**

(1) Every Operator shall develop procedures to safeguard—

(a) Cabin crew to ensure reasonable probability of their retaining consciousness during any emergency descent which may be necessary in the event of loss of pressurisation and, in addition, they shall have means of protection to enable them to administer first aid to passengers during stabilized flight following the emergency.

(b) Passengers with such devices or operational procedures to ensure reasonable probability of their surviving the effects of hypoxia in the event of loss of pressurisation.

**OPS 042. Instrument flight procedures.**

(1) The operator shall ensure that one or more instrument approach procedures to serve each final approach and take-off area or heliport utilized for instrument flight operations is 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) Every operator shall ensure that helicopters operated in accordance with IFR 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.

**OPS 043. Helicopter operating procedures for noise abatement**

Every operator shall ensure that take-off and landing procedures take into account the need to minimize the effect of helicopter noise.

**OPS 044. In-flight fuel management**

(1) Every operator shall establish policies and procedures, approved by the Authority, to ensure that in-flight fuel checks and fuel management are performed.

(2) The pilot-in-command shall monitor the amount of usable fuel remaining on board to ensure it is not less than the fuel required to proceed to a landing site where a safe landing can be made with the planned final reserve fuel remaining.

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

(4) The PIC shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL, when the usable fuel estimated to be available upon landing at the nearest landing site where a safe landing can be made is less than the required final reserve fuel in compliance with Section 31.

**OPS 045. Duties of pilot-in-command**

(1) The PIC shall be responsible for—

1. the operation and safety of the helicopter;
2. the safety of all crew members, passengers and cargo on board, from the moment the engine or engines are started until the helicopter finally comes to rest at the end of the flight and the engine(s) shut down and the rotor blades stopped;
3. 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;
4. reporting all known or suspected defects in the helicopter, to the operator, at the termination of the flight;
5. be responsible for the journey log book or the general declaration containing the information listed in the section 119.

(2) The pilot-in-command shall ensure that the checklists specified in Section 14 are complied with in detail.

**OPS 046. Duties of flight dispatcher**

(1) Subject to section 26, a flight dispatcher in conjunction with a method of control and supervision of flight operations in accordance with section 10 shall—

1. assist the pilot-in-command in flight preparation and provide the relevant information;
2. 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
3. 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) In the event of an emergency, a flight dispatcher shall—

1. initiate such procedures as outlined in the operations manual while avoiding taking any action that would conflict with ATC procedures; and
2. 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.

(3) The Pilot-in-command shall convey relevant information to the flight dispatcher during the course of flight, particularly in the context of emergency situations.

**OPS 047. 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.

**OPS 048. Fatigue management**

(1) Regulations for the purposes of managing fatigue shall be in Part 16 Fatigue Management.

(2) The regulations referred to in sub section (1) are based upon scientific principles, knowledge and operational experience with the aim of ensuring that flight and cabin crew members are performing at an adequate level of alertness.

(3) The Authority has under the same regulation established—

a) prescriptive regulations for flight time, flight duty period and duty period limitations and rest period requirements; and

b) where authorising an operator to use a fatigue risk management system (FRMS), FRMS regulations in accordance with Seventh Schedule.

(4) Every operator required, shall in compliance with this section and for the purposes of managing its fatigue-related safety risks, establish flight time, flight duty period, duty period limitations and rest period requirements that are within the prescriptive fatigue management regulations established in Part 16 Fatigue Management.

(5) The operator shall maintain records of flight time, flight duty periods, duty periods and rest periods for all its flight and cabin crew members for 12 months.

(6) Where an operator complies with prescriptive fatigue management regulations in the provision of part or all of its services, the Authority—

(a) shall require that the operator familiarize those personnel involved in managing fatigue with their responsibilities and the principles of fatigue management;

(b) may approve, in exceptional circumstances, variations to these regulations on the basis of a risk assessment provided by the operator. Approved variations shall provide a level of safety equivalent to, or better than, that achieved through the prescriptive fatigue management regulations.

(7) Where the operator implements an FRMS to manage fatigue-related safety risks in the provision of part or all of its services, the Authority shall –

a) require the operator to have processes to integrate FRMS functions with its other safety management functions;

b) require that the operator establish maximum values for flight times, flight duty periods and duty periods, and minimum values for rest periods; and

c) approve the operator’s FRMS before it may take the place of any or all of the prescriptive fatigue management regulations and the approved FRMS shall provide a level of safety equivalent to, or better than, the prescriptive fatigue management regulations.

**SUB PART IV**

**HELICOPTER PERFORMANCE OPERATING LIMITATIONS**

**OPS 049. General**

(1) An operator shall ensure a helicopter is operated in accordance with a code of performance (Doc 10110) Airworthiness guidance needed established by the Authority, in compliance with the applicable standards of this Part

(2) In conditions where the safe continuation of flight is not ensured in the event of a critical engine failure, the PIC shall conduct the flight in conditions of weather and light and over such routes and diversion, that permit a safe forced landing to be executed.

(3) Notwithstanding the provisions of sub section (2), the Authority may, based on the result of a risk assessment, allow for variations without a safe forced landing to be included in the code of performance established in accordance with the provisions of sub section (1).

(4) The risk assessment referred to in sub section (3) shall take into consideration at least the following:

1. the type and circumstances of the operation;
2. the area or terrain over which the operation is being conducted;
3. the probability of, and length of exposure to, a critical engine failure and the tolerability of such an event;
4. the procedures and systems for monitoring and maintaining the reliability of the engine(s);
5. the training and operational procedures to mitigate the consequences of the critical engine failure; and
6. helicopter equipment

(5) Where the Authority permits IMC operations in performance Class 3, such operations shall be conducted in accordance with the provisions of Section 56

(6) An operator of a helicopter for which Part IV of Annex 8 is not applicable because of the exemption provided for in Article 41 of the Convention, shall ensure that the level of performance specified in section 50 is met as far as practicable.

**OPS 050. Helicopters to which Part IV of Annex 8 certification standards are applicable**

(1) The provisions contained in this section are applicable to the helicopters to which Part IV of Annex 8 certification standards are applicable.

(2) The level of performance defined by sub section (1) for the helicopters shall be consistent with the overall level embodied in this Part.

(3) Every operator shall ensure that a helicopter is operated in compliance with the terms of its certificate of airworthiness and within the approved operating limitations contained in its flight manual.

(4) The Authority shall ensure that the general level of safety required by this Sub Part is maintained under all expected operating conditions, including those not covered specifically by the provisions of this Sub Part.

(5) No operator shall commence a flight unless the performance information provided in the flight manual indicates that the provisions of sub section (6) and sub section (7) can be complied with for the flight to be undertaken.

(6) In applying this sub part, account shall be taken of all factors that significantly affect the performance of the helicopter including —

1. mass;
2. operating procedures;
3. the pressure-altitude appropriate to the elevation of the operating site;
4. temperature;
5. wind; and
6. condition of the surface.

(7) The factors specified in sub section (6) shall be taken into account directly as operational parameters or indirectly by means of allowances or margins, provided in the scheduling of performance data or in the code of performance in accordance with which the helicopter is being operated.

**OPS 051. Mass limitations**

(1) Every operator shall ensure that the mass of a helicopter at the start of take-off shall not exceed the mass at which the performance requirements referred to in section 49 (1) is complied with, allowing for expected reductions in mass as the flight proceeds and for such fuel jettisoning as is appropriate.

(2) An operator shall ensure that in no case will the—

(a) mass at the start of take-off exceed the maximum take-off mass specified in the helicopter flight manual taking into account the factors specified in section 49 (6)

(b) estimated mass for the expected time of landing at the destination and at any alternate exceed the maximum landing mass specified in the helicopter flight manual taking into account the factors specified in section 49 (6).

(c) mass at the start of take-off, or at the expected time of landing at the destination and at any alternate, exceed the relevant maximum mass at which compliance has been demonstrated with the applicable in Part 34 Environment Protection unless otherwise authorized in exceptional circumstances for a certain operating site where there is no noise disturbance problem, by the competent authority of the State in which the operating site is situated.

**OPS 052. Take-off and initial climb phase**

(1) An Operator shall ensure that—

(a) In operations in performance class 1, the helicopter is capable, in the event of the failure of the critical engine being recognized at or before the take-off decision point, to discontinue the take-off and stop within the rejected take-off area available or, in the event of the failure of the critical engine being recognized at or after the take-off decision point, to continue the take-off, clearing all obstacles along the flight path by an adequate margin until the helicopter is in a position to comply with section 53 (a).

(b) In operations in performance class 2, the helicopter shall be capable, in the event of the failure of the critical engine at any time—

(i) after reaching DPATO, to continue the take-off, clearing all obstacles along the flight path by an adequate margin until the helicopter is in a position to comply with Section 53 (a).

(ii) before DPATO, failure of the critical engine may cause the helicopter to force-land, therefore, the conditions stated in Section 49 (2) shall apply

(c) In operations in performance class 3, at any point of the flight path, failure of an engine will cause the helicopter to force-land; therefore, the conditions stated in Section 49 (2) shall apply.

**OPS 053. En-route phase**

(1) An Operator shall ensure that—

(a) for operations in performance Classes 1 and 2; the helicopter shall be capable, in the event of the failure of the critical engine at any point in the en-route phase, to continue the flight to a site at which the conditions of section 53 (1) (a) for operations in performance Class 1, or the conditions of section 54 (1) (c) for operations in performance Class 2 can be met, without flying below the appropriate minimum flight altitude at any point;

(b) When the en-route phase is conducted over a hostile environment and the diversion time to an alternate would exceed two hours, the Authority shall assess the risks associated with a second engine failure.

(c) for operations in performance Class 3; The helicopter shall be able, with all engines operating, to continue along its intended route or planned diversions without flying at any point below the appropriate minimum flight altitude and at any point of the flight path, failure of an engine will cause the helicopter to force-land; therefore, the conditions stated in sub section (1) and (2) shall apply.

**OPS 054. Approach and landing phase**

(1) An Operator shall ensure that—

(a) for operations in performance Class 1: In the event of the failure of the critical engine being recognized at any point during the approach and landing phase, before the landing decision point, the helicopter shall, at the destination and at any alternate, after clearing all obstacles in the approach path, be able to land and stop within an adequate margin equivalent to that specified in Section 51(1); and the landing distance available or to perform a balked landing and clear all obstacles in the flight path by

(b) in case of the failure occurring after the landing decision point, the helicopter shall be able to land and stop within the landing distance available.

(c) for operations in performance Class 2; In the event of the failure of the critical engine—

(i) before the DPBL, the helicopter shall, at the destination and at any alternate after clearing all obstacles in the approach path, be able either to land and stop within the landing distance available or to perform a balked landing and clear all obstacles in the flight path by an adequate margin equivalent to that specified in Section 52(1)(b);

(ii) After the DPBL, failure of an engine may cause the helicopter to force-land; therefore, the conditions stated in Section 45(2) shall apply.

(d) Operations in performance Class 3: At any point of the flight path, failure of an engine will cause the helicopter to force-land, therefore, the conditions stated in section 49(2) shall apply.

**OPS 055. Obstacle data**

An operator shall use available obstacle data to develop procedures to comply with the take-off, initial climb, approach and landing phases detailed in the code of performance requirements specified in section 49(1).

**OPS 056. Additional requirements for operations of helicopters in performance class 3 in IMC, except special VFRflights**

(1) An operator shall conduct operations in performance Class 3; in IMC only over a surface environment acceptable to the competent authority of the State over which the operations are performed.

(2) In approving operations by helicopters operating in performance Class 3 in IMC, the Authority shall ensure that the helicopter is certificated for flight under IFR and the requirements for overall level of safety intended by the provisions of this Part and Part 5 Airworthiness of Aircraft is provided by –

1. the reliability of the engines;
2. the operator’s maintenance procedures, operating practices and crew training programmes; and
3. equipment and other requirements provided in accordance with the Second Schedule to this Part

(3) An operator operating a helicopter in performance Class 3 in IMC shall have a programme for engine trend monitoring and utilize the engine and helicopter manufacturers’ recommended instruments, systems and operational or maintenance procedures to monitor the engines.

(4) The operator of helicopters operating in IMC in performance Class 3 shall utilize vibration health monitoring for the tail-rotor drive system in order to minimize the occurrence of mechanical failures.

**SUB PART V**

**HELICOPTER, INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS**

**OPS 057. General**

(1) Every operator shall ensure that 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 are 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 Authority.

(2) An operator shall ensure that a certified true copy of the air operator certificate specified in section 10 and a copy of the operations specifications relevant to the helicopter type, issued in conjunction with the certificate is carried on the helicopter all the time.

(3) Where 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.

(4) The operator shall include in the operations manual a minimum equipment list (MEL), approved by the Authority 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.

(5) Where the State of the Operator is not the State of Registry, the Authority shall ensure that the MEL does not affect the helicopter’s compliance with the airworthiness requirements applicable in the State of Registry.

(6) Every 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.

(7) The manual specified in sub section (6) shall—

(a) include details of the aircraft systems and of the checklists to be used;

(b) be easily accessible to the flight crew during all flight operations

(8) The design of the manual shall observe Human Factors principles.

**OPS 058. Helicopter operated under an Article 83 bis agreement**

(1) An operator shall ensure that a helicopter, when operating under an Article 83 bis agreement entered into between the State of Registry and the State of the Operator, shall carry a certified true copy of the agreement summary, in either an electronic or hard copy format.

(2) Where the summary specified in sub section (1), is issued in a language other than English, an English translation shall be included.

(3) An operator shall make accessible an agreement summary of an Article 83 *bis* agreement shall be accessible to a civil aviation safety inspector, in determining which functions and duties are transferred by the State of Registry to the State of the Operator under the agreement, when conducting surveillance activities such as ramp checks.

(4) The agreement summary shall be transmitted to ICAO together with the Article 83 *bis* Agreement for registration with the ICAO Council by the State of Registry or the State of Operator.

(5) The agreement summary shall contain the information in Seventh Schedule for the specific aircraft and shall follow the layout of Seventh Schedule paragraph 2.

**OPS 059. ALL HELICOPTERS ON ALL FLIGHTS**

(1) An operator shall ensure that 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.

(2) A helicopter shall be equipped with—

(a) accessible and adequate medical supplies that comprise;

(i) a first-aid kit; and

(ii) for helicopters required to carry cabin crew as part of the operating crew, a universal precaution kit, for the use of cabin crew in managing incidents of ill health associated with a case of suspected communicable disease, or in the case of illness involving contact with body fluids.

*(*b) portable fire extinguishers of a type which, when discharged, will not cause dangerous contamination of the air within the helicopter and at least one shall be located in;

(a) the pilot’s compartment; and

(b) each passenger compartment that is separate from the pilot’s compartment and that is not readily accessible to the flight crew.

(c) a seat or berth for each person aged 2 years and older, a seat belt for each seat and restraining belts for each berth; and a safety harness for each flight crew seat.

(d) the safety harness specified in subsection 2 (c) for each pilot seat shall incorporate a device which will automatically restrain the occupant’s torso in the event of rapid deceleration.

(e)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.

(f) 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;
5. location and method of opening emergency exits; and

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

(3) Any agent used in a built-in fire extinguisher for each lavatory disposal receptacle for towels, paper or waste, in a helicopter for which the individual certificate of airworthiness is first issued on or after 31 December 2011, and any extinguishing agent used in a portable fire extinguisher in a helicopter, for which the individual certificate of airworthiness is first issued on or after 31 December 2018, shall—

a) meet the applicable minimum performance requirements of the State of Registry; and

b) not be of a type listed in the 1987 *Montreal Protocol on Substances that Deplete the Ozone Layer* as it appears in the Eighth Edition of the *Handbook for the Montreal Protocol on Substances that Deplete the Ozone La*yer, Annex A, Group II.

(4) An operator shall ensure that a helicopter carries—

a) the operations manual prescribed in section 11, 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 Sub Part IV 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

c) current and suitable charts to cover the route of the proposed flight and any route along which it is reasonable to expect that the flight may be diverted.

**OPS 060. Marking of break-in points**

(1) An operator shall ensure that If areas of the fuselage suitable for break-in by rescue crews in an emergency are marked on a helicopter, such areas shall be marked as shown show in Ninth Schedule

(2) The colour of the markings in sub section (1) shall be red or yellow and, if necessary, they shall be outlined in white to contrast with the background.

(3) If the corner markings are more than 2 m apart, intermediate lines 9 cm × 3 cm shall be inserted so that there is no more than 2 m between adjacent markings.

**OPS 061. Flight Recorders (Flight Data Recorders and Aircraft Data Recording Systems)**

(1) Details of flight recorders including crash-protected flight recorders and light weight flight recorders, their composition and construction are contained in the Fourth Schedule

(2) All helicopters of a maximum certificated take-off mass of over 3 175 kg, up to and including 7 000 kg, for which the individual certificate of airworthiness is first issued on or after 1 January 2016, should be equipped with an FDR which shall record at least the first 48 parameters listed in the Fourth Schedule Table A4-1.

(3) All helicopters of a maximum certificated take-off mass of over 7 000 kg, or having a passenger seating configuration of more than nineteen, for which the individual certificate of airworthiness is first issued on or after 1 January 1989 shall be equipped with an FDR which shall record at least the first 30 parameters listed in the Fourth Schedule Table A4-1.

(4) All helicopters of a maximum certificated take-off mass of over 3 175 kg, up to and including 7 000 kg, for which the individual certificate of airworthiness is first issued on or after 1 January 1989, should be equipped with an FDR which shall record at least the first 15 parameters listed in the Fourth Schedule Table A4-1.

(5) All turbine-engined helicopters of a maximum certificated take-off mass of over 2 250 kg, up to and including 3 175 kg, for which the application for type certification was submitted to a Contracting State on or after 1 January 2018, shall be equipped with:

a)an FDR which shall record at least the first 48 parameters listed in Table A4-1 of Appendix 4; or

b)a Class C AIR or AIRS which shall record at least the flight path and speed parameters displayed to the pilot(s), as defined in Appendix 4, Table A4-3; or

c)an ADRS which shall record the first 7 parameters listed in Table A43 of Appendix 4.

(6) All helicopters of a maximum certificated take-off mass of 3 175 kg or less for which the individual certificate of airworthiness is first issued on or after 1 January 2018 shall be equipped with—

a) an FDR which shall record at least the first 48 parameters listed in Table A4-1 of the Fourth Schedule; or

b) a Class C AIR or AIRS which shall record at least the flight path and speed parameters displayed to the pilot(s), as defined in Fourth Schedule, Table A4-3; or

c) an ADRS which shall record the first 7 parameters listed in Table A4-3 of Fourth Schedule.

(7) All helicopters of a maximum certificated take-off mass of over 3 175 kg for which the application for type certificate is submitted to a Contracting State on or after 1 January 2023 shall be equipped with an FDR capable of recording at least the first 53 parameters listed in Table A4-1 of Fourth Schedule.

(8) All helicopters of a maximum certificated take-off mass of over 3 175 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2023 shall be equipped with an FDR capable of recording at least the first 53 parameters listed in Table A4-1 of Fourth Schedule.

**OPS 062. FDR Recording technology**

An operator shall ensure that the recording technology for FDRs, ADRS, AIRs or AIRS shall not use engraving metal foil, frequency modulation (FM), photographic film or magnetic tape.

**OPS 063. FDR Duration**

An operator shall ensure that all FDRs retain the information recorded during at least the last 10 hours of their operation.

**OPS 064. Cockpit voice recorders and cockpit audio recording systems**

(1) An operator shall ensure that all helicopters of a maximum certificated take-off mass of over 7 000 kg shall be equipped with a CVR.

(2) Notwithstanding subsection (1), helicopters not equipped with an FDR, the operator shall ensure that at least main rotor speed shall be recorded on the CVR.

(3) All helicopters of a maximum certificated take-off mass of over 3 175 kg for which the individual certificate of airworthiness is first issued on or after 1 January 1987 shall be equipped with a CVR.

(4) For helicopters not equipped with an FDR, at least main rotor speed shall be recorded on the CVR.

**OPS 065. CVR *Recording technology***

An operator shall ensure that CVRs and CARS shall not use magnetic tape or wire.

**OPS 066. CVR Duration**

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

**OPS 067. Data link recorders**

(1) An operator shall ensure that all helicopters for which the individual certificate of airworthiness was first issued —

(a) on or after 1 January 2016, which use any of the data link communications applications referred to in Fourth Schedule and are required to carry a CVR, shall record the data link communications messages on a crash-protected flight recorder.

(b) before 1 January 2016, that are required to carry a CVR and are modified on or after 1 January 2016 to use any of the data link communications applications referred to in Fourth Schedule shall record the data link communications messages on a crash-protected flight recorder.

**OPS 068. Data link recorders duration**

An operator shall ensure that the minimum recording duration for Data link recorders shall be equal to the duration of the CVR.

**OPS 069. Data Link Correlation**

An operator shall ensure that Data link recording shall be able to be correlated to the recorded cockpit audio.

**OPS 070. Flight recorders — general**

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

**OPS 071. Flight recorders Operation**

(1) An operator shall ensure that—

(a) Flight recorders are not switched off during flight time;

(b) to preserve flight recorder records—

(i) flight recorders shall be deactivated upon completion of flight time following an accident or incident;

(ii) flight recorders shall not be reactivated before their disposition as determined in accordance with the Civil Aviation (Accident and Investigations) Regulations.

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

**OPS 072. Continued serviceability**

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

**OPS 073. Flight recorders electronic documentation**

An operator shall ensure that the documentation requirement concerning FDR parameters provided by operators to accident investigation authorities shall be in electronic format and take account of industry specifications.

**OPS 074. Instruments And Equipment For Flights Operated Under VFR And IFR — By Day And Night**

(1) An operator shall ensure that all helicopters when operating in accordance with—

(a)VFR by day shall be equipped with—

(i) a magnetic compass;

(ii) an accurate timepiece indicating the time in hours, minutes and seconds;

(iii) a sensitive pressure altimeter;

(iv) an airspeed indicator; and

(v) such additional instruments or equipment as may be prescribed by the appropriate authority.

(b)VFR at night shall be equipped with:

(i) the equipment specified in sub section 1(a)

(ii) an attitude indicator (artificial horizon) for each required pilot and one additional attitude indicator;

(iii) a slip indicator;

(iv) a heading indicator (directional gyroscope);

(v) a rate of climb and descent indicator;

(vi) such additional instruments or equipment as may be prescribed by the appropriate authority;

and the following lights:

(vii) the lights required by Part 18 Rules of the Air for aircraft in flight or operating on the movement area of a heliport;

(viii) two landing lights;

(ix) illumination for all instruments and equipment that are essential for the safe operation of the helicopter that are used by the flight crew;

(x) lights in all passenger compartments; and

(xi) a flashlight for each crew member station.

(c) One of the landing lights should be trainable, at least in the vertical plane.

(d) IFR, or when the helicopter cannot be maintained in a desired attitude without reference to one or more flight instruments, shall be equipped with—

(i) a magnetic compass;

(ii) an accurate timepiece indicating the time in hours, minutes and seconds;

(iii) two sensitive pressure altimeters;

(iv) an airspeed indicating system with means of preventing malfunctioning due to either condensation or icing;

(v) a slip indicator;

(vi) an attitude indicator (artificial horizon) for each required pilot and one additional attitude indicator;

(vii) a heading indicator (directional gyroscope);

(viii) a means of indicating whether the power supply to the gyroscope instrument is adequate;

(ix) a means of indicating on the flight deck the outside air temperature;

(x) a rate of climb and descent indicator;

(xi) a stabilization system, unless it has been demonstrated to the satisfaction of the certificating authority that the helicopter possesses, by nature of its design, adequate stability without such a system;

(xii) such additional instruments or equipment as may be prescribed by the appropriate authority; and

(xiii) if operated at night, the lights specified in paragraph (b)(vii) to (xi) and subsection (2).

(e) IFR shall be fitted with an emergency power supply, independent of the main electrical generating system, for the purpose of operating and illuminating, for a minimum period of 30 minutes, an attitude indicating instrument (artificial horizon), clearly visible to the PIC and the emergency power supply shall be automatically operative after the total failure of the main electrical generating system and clear indication shall be given on the instrument panel that the attitude indicator(s) is being operated by emergency power.

(f ) IFR and which has a maximum certificated take-off mass in excess of 3 175 kg, or a maximum passenger seating configuration of more than 9, shall be equipped with a ground proximity warning system which has a forward-looking terrain avoidance function.

2. An operator shall ensure that one of the landing lights specified in subsection 1(b) shall be trainable, at least in the vertical plane.

**OPS 075. All Helicopters on Flights Over Water- Means Of Flotation**

(1) An operator shall ensure that all helicopters intended to be flown over water shall be fitted with a permanent or rapidly deployable means of flotation so as to ensure a safe ditching of the helicopter when—

a) engaged in offshore operations, or other overwater operations as prescribed by the Authority; or

b) flying over water in a hostile environment at a distance from land corresponding to more than 10 minutes at normal cruise speed when operating in performance Class 1 or 2; or

c) flying over water in a non-hostile environment at a distance from land specified by the appropriate authority of the responsible State when operating in performance Class 1; or

d) flying over water beyond auto rotational or safe forced landing distance from land when operating in performance Class 3.

**OPS 076. All Helicopters on Flights Over Water-Emergency Equipment**

(1) An operator shall ensure that helicopters operating in performance Class 1 or 2 and operating in accordance with the provisions of section 75 shall be equipped with—

a) one life jacket, or equivalent individual flotation device, for each person on board, stowed in a position easily accessible from the seat or berth of the person for whose use it is provided and for offshore operations the life jacket shall be worn constantly unless the occupant is wearing an integrated survival suit that includes the functionality of the life jacket;

b) life-saving rafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency, provided with such life-saving equipment including means of sustaining life as is appropriate to the flight to be undertaken and where two life rafts are fitted, each shall be able to carry all occupants in the overload state; and

c) equipment for making the pyrotechnical distress signals described in Part 18 Rules of the Air

(2) An operator shall ensure that helicopters operating in performance Class 3 when operating beyond autorotational distance from land but within a distance from land specified by the appropriate authority of the responsible State shall be equipped with one life jacket, or equivalent individual flotation device, for each person on board, stowed in a position easily accessible from the seat or berth of the person for whose use it is provided.

(3) An operator shall ensure that for offshore operations, when operating beyond autorotational distance from land, the life jacket shall be worn unless the occupant is wearing an integrated survival suit that includes the functionality of the life jacket**.**

(4) Helicopters operating in performance Class 3 when operating beyond the distance specified in sub section (2) shall be equipped as in sub section (1).

(5) An operator shall ensure that in the case of helicopters operating in performance Class 2 or 3, when taking off or landing at a heliport where, in the opinion of the Authority, the take-off or approach path is so disposed over water that in the event of a mishap there would be likelihood of a ditching, at least the equipment required in sub section (1) shall be carried.

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

(7) An operator shall ensure that on any helicopter for which the individual certificate of airworthiness is first issued on or after 1 January 1991, at least 50 per cent of the life rafts carried in accordance with the provisions of this section should be deployable by remote control.

(8)Rafts which are not deployable by remote control and which have a mass of more than 40 kg should be equipped with some means of mechanically assisted deployment.

(9) On any helicopter for which the individual certificate of airworthiness was first issued before 1 January 1991, the provisions of 4.5.2.6 and 4.5.2.7 should be complied with no later than 31 December 1992.

**OPS 077. All helicopters on flights over designated sea areas**

(1) An operator shall ensure that Helicopters, when operating over sea areas which have been designated by the State concerned as areas in which search and rescue would be especially difficult, shall be equipped with life-saving equipment (including means of sustaining life) as may be appropriate to the area overflown.

(2) An operator shall ensure that for offshore operations, a survival suit shall be worn by all occupants when the sea temperature is less than 10°C or when the estimated rescue time exceeds the calculated survival time and where the elevation and strength of the sun results in a high temperature hazard on the flight deck, consideration should be given to alleviating the flight crew from this requirement.

**OPS 078. All Helicopters on Flights Over Designated Land Areas**

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

**OPS 079. Emergency Locator Transmitter (ELT)**

(1) An operator shall ensure that all helicopters operating—

(a) in performance Class 1 and 2 shall be equipped with at least one automatic ELT and, when operating on flights over water as described in section 75 (1), with at least one automatic ELT and one ELT(S) in a raft or life jacket.

(b) in performance Class 3 shall be equipped with at least one automatic ELT and, when operating on flights over water as described in Section 75 (1), with at least one automatic ELT and one ELT(S) in a raft or life jacket

(2) ELT equipment carried to satisfy the requirements of paragraph (a) and paragraph (b) shall operate in accordance with the relevant provisions of Part24 Aeronautical Telecommunications (Communication Systems).

**OPS 080. All Helicopters on High Altitude Flights**

(1) Approximate altitude in the Standard Atmosphere corresponding to the value of absolute pressure used in this text is 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) Every operator shall ensure that every helicopter intended to be operated at flight altitudes at which the atmospheric pressure is less than –

(a) 700 hPa in personnel compartments shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the oxygen supplies required in Section 35.

(b) 700 hPa, but which is provided with means of maintaining pressures greater than 700 hPa in personnel compartments, shall be provided with oxygen storage and dispensing apparatus capable of storing and dispensing the oxygen supplies required in Section 35.

(c) 376 hPa or which, if operated at flight altitudes at which the atmospheric pressure is more than 376 hPa, cannot descend safely within four minutes to a flight altitude at which the atmospheric pressure is equal to 620 hPa, shall be provided with automatically deployable oxygen equipment to satisfy the requirements of Section 35.

(d) A helicopter intended to be operated at flight altitudes at which the atmospheric pressure is less than 376 hPa or which, if operated at flight altitudes at which the atmospheric pressure is more than 376 hPa, cannot descend safely within four minutes to a flight altitude at which the atmospheric pressure is equal to 620 hPa, and for which the individual certificate of airworthiness was issued before 9 November 1998, should be provided with automatically deployable oxygen equipment to satisfy the requirements of 2.3.8.2. The total number of oxygen dispensing units should exceed the number of passenger and cabin crew seats by at least 10 per cent.

(2) The total number of oxygen dispensing units shall exceed the number of passenger and cabin crew seats by at least 10 per cent.

**OPS 081. All Helicopters in Icing Conditions**

Every operator shall ensure that all helicopters are equipped with suitable anti-icing and/or de-icing devices when operated in circumstances in which icing conditions are reported to exist or are expected to be encountered.

**OPS 082. Helicopters When Carrying Passengers — Significant-Weather Detection**

Every operator shall ensure that helicopters when carrying passengers should be equipped with operative weather radar or other significant-weather detection equipment whenever such helicopters are being operated in areas where thunderstorms or other potentially hazardous weather conditions, regarded as detectable, may be expected to exist along the route either at night or under instrument meteorological conditions.

**OPS 083. All Helicopters Required to Comply with The Noise Certification Standards in Annex 16, Volume I**

An operator shall ensure that all helicopters required to comply with the noise certification Standards of Annex 16, Volume I shall carry a document attesting noise certification. When the document, or a suitable statement attesting noise certification as contained in another document approved by the State of Registry, is issued in a language other than English, it shall include an English translation.

**OPS 084. Helicopters Carrying Passengers — Cabin Crew Seats**

Every operator shall ensure that —

(a) all helicopters are be equipped with a forward or rearward facing (within 15 degrees of the longitudinal axis of the helicopter) seat, fitted with a safety harness for the use of each cabin crew member required to satisfy the intent of section 122 in respect of emergency evacuation.

(b) Cabin crew seats shall be located near floor level and other emergency exits as required by the State of Registry for emergency evacuation.

**OPS 085. Helicopters Required to Be Equipped with A Pressure-Altitude Reporting Transponder**

Except as may be otherwise authorised by the appropriate authority, all helicopter operators shall ensure that every helicopter is equipped with a pressure-altitude reporting transponder which operates in accordance with the provisions of Part 26 Aeronautical Telecommunications (Surveillance and Collision Avoidance).

**OPS 086. Microphones**

Every operator shall ensure that all flight crew members required to be on flight deck duty shall communicate through boom or throat microphones.

**OPS 087. Vibration Health Monitoring System**

Every operator shall ensure that a helicopter which has a maximum certificated take-off mass in excess of 3 175 kg or a maximum passenger seating configuration of more than 9 shall be equipped with a vibration health monitoring system.

**OPS 088. Helicopters Equipped with Automatic Landing Systems, A Head-Up Display (Hud) Or Equivalent Displays, Enhanced Vision Systems (EVS), Synthetic Vision Systems (SVS) or Combined Vision Systems (CVS)**

(1) Not withstanding section 17 an operator shall ensure that where helicopters are equipped with automatic landing systems, HUD or equivalent displays, EVS, SVS or CVS, or any combination of those systems into a hybrid system, the use of such systems for the safe operation of a helicopter shall be approved by the Authority.

(2) In approving the operational use of automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, the Authority shall ensure that—

a) the equipment meets the appropriate airworthiness certification requirements;

b) the operator has carried out a safety risk assessment of the operations supported by the automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS; and

c) the operator has established and documented the procedures for the use of, and training requirements for, automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS.

**OPS 089. Electronic Flight Bags (EFBs)**

The guidance on EFB equipment, functions and specific approval are contained in the technical guidance material issued by the Authority.

**OPS 090. EFB Equipment**

Every operator shall ensure that where portable EFBs are used on board a helicopter, they do not affect the performance of the helicopter systems, equipment or the ability to operate the helicopter.

**OPS 091. EFB functions**

Where EFBs are used on board a helicopter the operator shall—

a) assess the safety risk(s) associated with each EFB function;

b) establish and document the procedures for the use of, and training requirements for, the device and each EFB function; and

c) ensure that, in the event of an EFB failure, sufficient information is readily available to the flight crew for the flight to be conducted safely.

OPS 092. The Authority shall issue a specific approval for the operational use of EFB functions to be used for the safe operation of helicopters.

**OPS 093. EFB specific approval**

When issuing a specific approval for the operational use of EFBs, the Authority shall ensure that—

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

b) the operator has assessed the safety risks associated with the operations supported by the EFB function(s);

c) the operator has established requirements for redundancy of the information (if appropriate) contained and displayed by the EFB function(s);

d) the operator has established and documented procedures for the management of the EFB function(s) including any databases it may use; and

e) the operator has established and documented the procedures for the use of, and training requirements for the EFB function(s).

**SUB PART VI**

**HELICOPTER COMMUNICATION, NAVIGATION AND SURVEILLANCE EQUIPMENT**

**OPS 094. Communication equipment**

(1) An operator shall ensure that a helicopter is 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; and

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.

(2) An operator shall ensure that the radio communication equipment required in accordance with sub section (1) provide for communications on the aeronautical emergency frequency 121.5 MHz.

(3) An operator shall ensure that for operations where communication equipment is required to meet an RCP specification for performance-based communication (PBC), a helicopter shall, in addition to the requirements specified sub section (1) —

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

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

c) have information relevant to the helicopter RCP specification capabilities included in the MEL.

(4) For operations where an RCP specification for PBC has been prescribed, the Authority shall ensure that the operator has established and documented—

a) normal and abnormal procedures, including contingency procedures;

b) flight crew qualification and proficiency requirements, in accordance with appropriate RCP specifications;

c) a training programme for relevant personnel consistent with the intended operations; and

d) appropriate maintenance procedures to ensure continued airworthiness, in accordance with appropriate RCP specifications.

(5) The Authority shall ensure that, in respect to those helicopters mentioned in subsection (3), adequate provisions exist for—

a) receiving the reports of observed communication performance issued by monitoring programmes established in accordance with Part 36 Air Traffic Services and

b) taking immediate corrective action for individual helicopters, helicopter types or operators, identified in such reports as not complying with the RCP specification(s).

**OPS 095. Navigation Equipment**

(1) An operator shall ensure that every helicopter is provided with navigation equipment which will enable it to proceed in accordance with —

a) its operational flight plan; and

b) 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.

(2) An operator shall ensure that for operations where a navigation specification for performance-based navigation (PBN) has been prescribed, a helicopter shall, in addition to the requirements specified in sub section (1) —

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

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

c) have information relevant to the helicopter navigation specification capabilities included in the MEL.

(3) For operations where a navigation specification for PBN has been prescribed, the Authority shall ensure that the operator has established and documented—

a) normal and abnormal procedures, including contingency procedures;

b) flight crew qualification and proficiency requirements, in accordance with the appropriate navigation specifications;

c) a training programme for relevant personnel consistent with the intended operations; and

d) appropriate maintenance procedures to ensure continued airworthiness, in accordance with appropriate navigation specifications.

(4) The Authority shall issue a specific approval for operations based on PBN authorization required (AR) navigation specifications.

(5) Every operator shall ensure that a helicopter is 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 sub section (1) and where applicable sub section (2)

(6) An operator shall ensure that on flights in which it is intended to land in IMC, a helicopter shall be provided with appropriate navigation equipment providing guidance to a point from which a visual landing can be effected and this equipment shall be capable of providing such guidance at each heliport at which it is intended to land in IMC and at any designated alternate heliports.

**OPS 096. Surveillance Equipment**

(1) An operator shall ensure that a helicopter shall be provided with surveillance equipment which will enable it to operate in accordance with the requirements of air traffic services.

(2) An operator shall ensure that for operations where surveillance equipment is required to meet an RSP specification for performance-based surveillance (PBS), a helicopter shall, in addition to the requirements specified in subsection (1)—

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

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

c) have information relevant to the helicopter RSP specification capabilities included in the MEL.

(3) Authority shall, for operations where an RSP specification for PBS has been prescribed, ensure that the operator has established and documented—

a) normal and abnormal procedures, including contingency procedures;

b) flight crew qualification and proficiency requirements, in accordance with appropriate RSP specifications;

c) a training programme for relevant personnel consistent with the intended operations; and

d) appropriate maintenance procedures to ensure continued airworthiness, in accordance with appropriate RSP specifications.

**OPS 0**97. The Authority shall ensure that, in respect of those helicopters mentioned in section 96 (2), adequate provisions exist for—

a) receiving the reports of observed surveillance performance issued by monitoring programmes established in accordance with Part 36 Air Traffic Services; and

b) taking immediate corrective action for individual helicopter, helicopter types or operators, identified in such reports as not complying with the RSP specification(s).

**OPS 098. Installation**

An operator shall ensure that the equipment installation shall be such that the failure of any single unit required for communication, navigation or surveillance purposes, or any combination thereof, will not result in the failure of another unit required for communication, navigation or surveillance purposes.

**OPS 099. Electronic Navigation Data Management**

(1) The operator shall not employ electronic navigation data products that have been processed for application in the air and on the ground, unless the Authority has approved the operator’s procedures for ensuring that the process applied and the products delivered have met acceptable standards of integrity and that the products are compatible with the intended function of the existing equipment.

(2) The Authority shall ensure that the operator continues to monitor both the process and products referred to in subsection (1).

(3) An operator shall implement procedures that ensure the timely distribution and insertion of current and unaltered electronic navigation data to all necessary aircraft.

**SUB PART VII**

**HELICOPTER CONTINUING AIRWORTHINESS**

**OPS 100. Operator’s Continuing Airworthiness Responsibilities.**

(1) For the purpose of this sub part “helicopter” includes: engines, power transmissions, rotors, components, accessories, instruments, equipment and apparatus including emergency equipment.

(2) Every operator shall ensure that in accordance with procedures acceptable to the State of Registry —

(a) each helicopter operated is maintained in an airworthy condition;

(b) the operational and emergency equipment necessary for any intended flight is serviceable; and

(c) every operated helicopter has a valid certificate of airworthiness.

(3) No operator shall operate a helicopter unless maintenance on the helicopter, including any associated engine, rotor and part, is carried out by—

1. an organization complying with Part 6 Approved Maintenance Organization that is either approved by the Authority or is approved by another Contracting State and is acceptable to the Authority;
2. a qualified person or organization in accordance with procedures that are authorised by the State of Registry and
3. there is a maintenance release in relation to the maintenance carried out.

(4) The operator shall employ a qualified person or group of persons to ensure that all maintenance is carried out in accordance with the maintenance control manual.

(5) The operator shall ensure that the maintenance of its helicopters is performed in accordance with the maintenance programme approved by the State of Registry.

**OPS 101. Operator’s maintenance control manual**

(1) An operator shall provide, for the use and guidance of maintenance and operational personnel concerned, a maintenance control manual, acceptable to the Authority in accordance with the requirements of Section 117.

(2) The design of the maintenance control manual referred to in subsection (1) shall observe Human Factors principles.

(3) The operator shall ensure that —

(a) the maintenance control manual is amended as necessary to keep the information contained therein up to date.

(b) Copies of all amendments to the operator’s maintenance control manual shall be furnished promptly to all organisations or persons to whom the manual has been issued.

(4) The operator shall provide the Authority and the State of Registry with a copy of the operator’s maintenance control manual, together with all amendments or revisions to it and shall incorporate in it such mandatory material as the Authority or the State of Registry may require.

**OPS 102. Maintenance programme**

(1) An operator shall provide, for the use and guidance of maintenance and operational personnel concerned, a maintenance programme, approved by the State of Registry containing the information required in Section 118

(2) The operator shall ensure that —

(a) the design and application of the operator’s maintenance programme observes Human Factors principles.

(b) Copies of all amendments to the maintenance programme shall be furnished promptly to all organisations or persons to whom the maintenance programme has been issued.

**OPS 103. Continuing Airworthiness Records**

(1) The operator shall ensure that the following records are kept for the periods specified in this section –

1. the total time in service, (hours, calendar time and cycles, as appropriate) of the helicopter and all life-limited components;
2. the current status of compliance with all mandatory continuing airworthiness information;
3. appropriate details of modifications and repairs to the helicopter and its major components;
4. the time in service (hours, calendar time and cycles, as appropriate) since last overhaul of the helicopter or its components subject to a mandatory overhaul life;
5. the current status of the helicopter’s compliance with the maintenance programme; and
6. the detailed maintenance records to show that all requirements for a maintenance release have been met.

(2) The records in subsection (1) (a) to (e) shall be kept for a minimum period of 90 days after the unit to which they refer has been permanently withdrawn from service, and the records in sub Section (1)(f) for a minimum period of one year after the signing of the maintenance release.

(3) In the event of a temporary change of operator, the records shall be made available to the new operator, and in the event of any permanent change of operator, the records shall be transferred to the new operator.

(4) Records kept and transferred in accordance with this section shall be maintained in a form and format that ensures readability, security, and integrity of the records at all times.

**OPS 104. Continuing airworthiness information**

(1) An operator of a helicopter over 3 175 kg maximum mass shall monitor and assess maintenance and operational experience with respect to continuing airworthiness and provide the information as prescribed by the State of Registry and report through the system specified in Part 6 Airworthiness of Aircraft.

(2) An operator of a helicopter over 3 175 kg maximum mass shall obtain and assess continuing airworthiness information and recommendations available from the organisation responsible for the type design and shall implement resulting actions considered necessary in accordance with a procedure acceptable to the State of Registry.

**OPS 105. Modifications and repairs**

(1) The operator shall —

(a) ensure that all modifications and repairs comply with airworthiness requirements acceptable to the Authority.

(b) establish Procedures to ensure that the substantiating data supporting compliance with the airworthiness requirements are retained.

**OPS 106. Maintenance release**

(1) where maintenance is carried out by an approved maintenance organization, the maintenance release shall be issued by the approved maintenance organisation in accordance with Part 6 Approved Maintenance Organisations

(2) where maintenance is not carried out by an approved maintenance organization, the maintenance release shall be completed and signed by a person appropriately licensed in accordance Part 2 Personnel licensing to certify that the maintenance work performed has been completed satisfactorily and in accordance with approved data and the procedures acceptable to the Authority.

(3) An operator shall ensure that where maintenance is not carried out by an approved maintenance organisation, the maintenance release shall include the following:

1. basic details of the maintenance carried out including detailed reference of the approved data used;
2. the date such maintenance was completed; and
3. the identity of the qualified person or persons signing the release.

**OPS 107. Records**

(1)Every operator shall ensure that the following records are kept:

1. in respect of the entire helicopter: the total time in service;
2. in respect of the major components of the helicopter:
3. the total time in service;
4. the date of the last overhaul;
5. the date of the last inspection;
6. in respect of those instruments and equipment, the serviceability and operating life of which are determined by their time in service:
7. such records of the time in service as are necessary to determine their serviceability or to compute their operating life;
8. the date of the last inspection.

(2) The records specified in sub-section (1) shall be kept for a period of 90 days after the end of the operating life of the unit to which they refer.

**SUB PART VIII**

**HELICOPTER FLIGHT CREW**

**OPS 108. Composition of the flight crew**

(1) Every operator shall ensure that the number and composition of the flight crew shall not be less than that specified in the operations manual.

(2) The flight crew referred to in subsection (1) shall include—

(a) other 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 —

(i) the type of helicopter used;

(ii) the type of operation involved; and

(iii) the duration of flight between points where flight crew are changed.

(b) at least one member authorized by the State of Registry to operate the type of radio transmitting equipment to be used.

**OPS 109. Flight Crew Member Emergency Duties**

(1) Every 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.

(2) In accomplishing the functions specified in sub Section (1), annual training 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.

**OPS 110. Flight Crew Member Training Programmes**

(1) Every operator shall establish and maintain a ground and flight training programme, approved by the Authority, which ensures that all flight crew members are adequately trained to perform their assigned duties.

(2) The training programme referred to in sub Section (1) shall—

1. include ground and flight training facilities and properly qualified instructors as determined by the Authority;
2. consist of ground and flight training for the type of helicopter on which the flight crew member serves;
3. include proper flight crew coordination and training for all types of emergency and abnormal situations or procedures caused by engine, transmission, rotor, airframe or systems malfunctions, fire or other abnormalities;
4. include training in knowledge and skills related to the visual and instrument flight procedures for the intended area of operation, human performance and threat error and management, the transport of dangerous goods and, where applicable, procedures specific to the environment in which the helicopter is to be operated;
5. 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;
6. include training in knowledge and skills related to the operational use of head-up display or enhanced vision systems for those helicopters so equipped; and
7. undertaken on a recurrent basis, as determined by the Authority, and shall include an assessment of competence.

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

1. the use, to the extent deemed feasible by the Authority, of flight simulation training devices approved by the Authority for that purpose; or
2. the completion within the appropriate period of the proficiency check required under Section 112 in that type of helicopter.

**OPS 111. Qualifications (Recent Experience PIC and Co-pilot)**

(1) The operator shall not assign a PIC or a co-pilot to operate at the flight controls of a type or variant of a type of a helicopter during take-off and landing unless that pilot has operated the flight controls during at least three take-offs and landings within the preceding 90 days on the same type of helicopter or in a flight simulator approved for that purpose.

(2) When a pilot-in-command or a co-pilot is flying several variants of the same type of helicopter or different types of helicopter with similar characteristics in terms of operating procedures, systems and handling, the Authority shall decide under which conditions the requirements of sub section (1) for each variant or each type of helicopter can be combined.

**OPS 112. Pilot-in-Command Operational Qualifications**

(1) No operator shall utilize a pilot as pilot-in-command of a helicopter on an operation for which that pilot is not currently qualified until such pilot has complied with sub sections (2) and (3).

(2) Each pilot referred to in sub section (1) shall demonstrate to the operator an adequate knowledge of:

1. the operation to be flown, including knowledge of—
2. the terrain and minimum safe altitudes;
3. the seasonal meteorological conditions;
4. the meteorological, communication and air traffic facilities, services and procedures;
5. the search and rescue procedures; and
6. the navigation facilities and procedures associated with the route or area in which the flight is to take place; and
7. procedures applicable to flight paths over heavily populated areas and areas of high air traffic density, obstructions, physical layout, lighting, approach aids and arrival, departure, holding and instrument approach procedures, and applicable operating minima;
8. the portion of the demonstration relating to arrival, departure, holding and instrument approach procedures may be accomplished in an appropriate training device which is approved for this purpose.

(3) A pilot-in-command shall have made a flight, representative of the operation with which the pilot is to be engaged which must include a landing at a representative heliport, as a member of the flight crew and accompanied by a pilot who is qualified for the operation.

(4) Every operator shall maintain a record, sufficient to satisfy the Authority of the qualification of the pilot and of the manner in which such qualification has been achieved.

(5) No operator shall continue to utilize a pilot as a pilot-in-command on an operation in an area specified by the operator and approved by the Authority unless, within the preceding 12 months, the pilot has made at least one representative flight as a pilot member of the flight crew, or as a check pilot, or as an observer on the flight deck.

(6) In the event that more than 12 months elapse in which a pilot has not made such a representative flight, prior to again serving as a pilot-in-command on that operation, that pilot shall requalify in accordance with sub sections (2) and (3).

**OPS 113. Pilot Proficiency Checks**

(1) Every operator shall ensure that piloting technique and the ability to execute emergency procedures is checked in such a way as to demonstrate the pilot’s competence on each type or variant of a type of helicopter.

(2) Where the operation is conducted under IFR, the operator shall ensure that the pilot’s competence to comply with such rules is demonstrated to either a check pilot of the operator or to a representative of the Authority.

(3) The pilot proficiency checks referred to in subsection (1) shall be—

(a) performed twice within any period of one year and two such checks which are similar and which occur within a period of four consecutive months shall not alone satisfy this requirement.

(b) conducted by the Authority or a designated examiner.

(4) Flight simulation training devices approved by the Authority may be used for those parts of the checks for which they are specifically approved.

(5) Where the operator schedules flight crew on 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 Authority shall determine under which conditions the requirements of this section for each variant or each type of helicopter can be combined.

(3) Pilot proficiency checks shall be performed twice within any period of 1 year.

(4) Any two pilot proficiency checks which are similar and which occur within a period of four consecutive months shall not alone satisfy this requirement.

(5) Flight simulation training devices approved by the Authority may be used for those parts of the checks for which they are specifically approved.

(6) Where the operator schedules flight crew on several variants of the same type of aeroplane or different types of aeroplanes with similar characteristics in terms of operating procedures, systems and handling, the Authority shall determine under which conditions the requirements of subsection (1) for each variant or each type of aeroplane can be combined.

**OPS 114. Flight crew equipment**

Every flight crew member assessed as fit to exercise the privileges of a licence, subject to the use of suitable correcting lenses, shall have a spare set of the correcting lenses readily available when exercising those privileges.

**SUB PART IX**

**FLIGHT DISPATCHER**

**OPS 115. Qualification and training**

(1) Every operator shall ensure that every flight dispatcher, employed in conjunction with an approved method of control and supervision of flight operations, is licenced in accordance with Part 2 Personnel Licensing.

(2) In accepting proof of qualifications other than the option of holding of a flight dispatcher licence, in accordance with the approved method of control and supervision of flight operations, as a minimum, such persons shall meet the requirements specified in Part 2 Personnel Licensing for the dispatcher licence.

(3) No operator shall assign a flight dispatcher to duty unless that person has—

1. satisfactorily completed the operator-specific training course that addresses all the specific components of its approved method of control and supervision of flight operations as specified in Section 9;
2. made, within the preceding 12 months, at least two qualification flights in a helicopter over any area for which that person is authorized to exercise flight supervision and the flight shall include landings at as many heliports as practicable;
3. demonstrated to the operator a knowledge of:
4. the contents of the operations manual as prescribed in the Eighth Schedule;
5. the radio equipment in the helicopters used; and
6. the navigation equipment in the helicopters used;
7. 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:
8. the seasonal meteorological conditions and the sources of meteorological information;
9. the effects of meteorological conditions on radio reception in the helicopters used;
10. the peculiarities and limitations of each navigation system which is used by the operation; and
11. the helicopter loading instructions;
12. demonstrated to the operator as to knowledge and skills related to human performance as they apply to dispatch duties; and
13. demonstrated to the operator the ability to perform the flight dispatcher duties specified in Section 46.

(4) A flight dispatcher assigned to duty shall maintain complete familiarisation with all features of the operations which are pertinent to such duties, including knowledge and skills related to human performance.

(5) A flight dispatcher shall not be assigned to duty after 12 consecutive months of absence from such duty, unless the provisions of sub section (3) are met.

**SUB PART X**

**MANUALS, LOGS AND RECORDS**

**OPS 116. Flight manual**

(1) An operator shall ensure that a flight manual contains the information specified in the Part 5 Airworthiness or Aircraft and be updated by implementing changes made mandatory by the State of Registry.

**OPS 117. Operator’s maintenance control manual**

The operator’s maintenance control manual provided in accordance with section 101, which may be issued in separate parts, shall contain the following information—

1. a description of the procedures required by section 100 including, where applicable:
2. a description of the administrative arrangements between the operator and the approved maintenance organisation; and
3. 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 organisation;
4. names and duties of the qualified person or persons required by section 100 (4);
5. a reference to the maintenance programme required by section 102;
6. a description of the methods used for the completion and retention of the operator’s maintenance records required by section 103;
7. a description of the procedures for monitoring, assessing and reporting maintenance and operational experience required by section 104.
8. a description of the procedures for complying with the service information reporting requirements of Part 5 Airworthiness or Aircraft;
9. a description of procedures for assessing continuing airworthiness information and implementing any resulting actions, as required as required by section 104;
10. a description of the procedures for implementing action resulting from mandatory continuing airworthiness information;
11. 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;
12. a description of helicopter types and models to which the manual applies;
13. a description of procedures for ensuring that unserviceability affecting airworthiness are recorded and rectified;
14. a description of the procedures for advising the State of Registry of significant in-service occurrences;
15. a description of procedures to control the leasing of aircraft and related aeronautical products; and
16. a description of the maintenance control manual amendment procedures.

**OPS 118. Maintenance programme**

(1) An operator shall ensure that a maintenance programme for each helicopter as required by Section 102 shall contain the following information –

1. maintenance tasks and the intervals at which these are to be performed, taking into account the anticipated utilisation of the helicopter;
2. where applicable, a continuing structural integrity programme;
3. procedures for changing or deviating from paragraphs (a) and (b); and
4. where applicable, condition monitoring and reliability programme descriptions for helicopter systems, components, power transmissions, rotors and engines.

(2) An operator shall ensure that maintenance tasks and intervals that have been specified as mandatory in approval of the type design shall be identified as such.

(3) The maintenance programme referred to in sub section (1) shall 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.

**OPS 119. Journey logbook**

(1)A helicopter journey log book shall contain the following items and the corresponding roman numerals—

I — Helicopter nationality and registration.

II — Date.

III — Names of crew members.

IV — Duty assignments of crew members.

V — Place of departure.

VI — Place of arrival.

VII — Time of departure.

VIII — Time of arrival.

IX — Hours of flight.

X — Nature of flight-private, scheduled or non-scheduled*.*

XI — Incidents, observations, if any.

XII — Signature of person in charge.

(2) Entries in the journey log book shall be made currently and in ink or indelible pencil.

(3) A completed journey log books shall be retained to provide a continuous record of the last six months’ operations.

**OPS 120. Records of emergency and survival equipment carried**

(1) An operator shall at all times have available for immediate communication to rescue coordination centres, lists containing information on the emergency and survival equipment carried on board any of their helicopters engaged in air navigation.

(2) The information specified in sub- Section (1) shall include, as applicable—

1. the number, colour and type of life rafts and pyrotechnics;
2. details of emergency medical supplies;
3. water supplies; and
4. the type and frequencies of the emergency portable radio equipment.

**OPS 121. Flight recorder records**

An operator shall ensure, to the extent possible, in the event the helicopter becomes involved in an accident or incident, the preservation of all related flight recorder records, and where necessary the associated flight recorders, and their retention in safe custody pending their disposition as determined in accordance with Civil Aviation (Aircraft Accident and Incident Investigation) Regulations.

**SUB PART XI**

**CABIN CREW**

**OPS 122. Assignment of emergency duties**

(1) An operator shall establish, to the satisfaction of the Authority, the minimum number of cabin crew required for each type of helicopter, based on seating capacity or the number of passengers carried, which shall not be less than the minimum number established during certification, in order to effect a safe and expeditious evacuation of the helicopter, and the necessary functions to be performed in an emergency or a situation requiring emergency evacuation.

(2) The operator shall assign the functions referred to in sub section (1) for each type of helicopter.

**OPS 123. Protection of cabin crew during flight**

An operator shall ensure that each cabin crew member shall be seated with seat belt or, when provided, safety harness fastened during take-off and landing and whenever the pilot-in-command so directs.

**OPS 124. Training**

(1) An operator shall establish and maintain a training programme, approved by the Authority, to be completed by all persons before being assigned as a cabin crew member.

(2) Cabin crew members shall complete a recurrent training programme annually.

(3) The training programmes specified in sub Section (1) shall ensure that each person is:

1. competent to execute those safety duties and functions that the cabin attendant is assigned to perform in the event of an emergency or in a situation requiring emergency evacuation;
2. drilled and capable in the use of emergency and life-saving equipment required to be carried, such as life jackets, life rafts, evacuation slides, emergency exits, portable fire extinguishers, oxygen equipment, first-aid and universal precaution kits, and automated external defibrillators;
3. when serving on helicopters operated above 3000 m or 10 000 ft, knowledgeable as regards the effect of lack of oxygen and, in the case of pressurized helicopters, as regards physiological phenomena accompanying a loss of pressurization;
4. aware of other crew members’ assignments and functions in the event of an emergency so far as is necessary for the fulfilment of the cabin crew member’s own duties;
5. aware of the types of dangerous goods which may, and may not, be carried in a passenger cabin; and
6. knowledgeable about human performance as related to passenger cabin safety duties including flight crew cabin crew coordination.

**SUB PART XII**

**SECURITY**

**OPS 125. Helicopter Search Procedure Checklist**

(1) In the context of this Sub Part, the word ‘‘security’’ is used in the sense of prevention of illicit acts against civil aviation

(2) An operator shall ensure that there is on board a checklist of the procedures to be followed in searching for a bomb in case of suspected sabotage.

(3) The checklist specified in sub section (1) shall be supported by guidance on the course of action to be taken should a bomb or suspicious object be found.

**OPS 126. Training Programmes**

(1) An operator shall establish and maintain a training programme which enables crew members to act in the most appropriate manner to minimize the consequences of acts of unlawful interference.

(2) The operator shall establish and maintain a training programme to acquaint appropriate employees with preventive measures and techniques in relation to passengers, baggage, cargo, mail, equipment, stores and supplies intended for carriage on a helicopter so that they contribute to the prevention of acts of sabotage or other forms of unlawful interference.

(3) As a minimum, approved security training programme shall include the following elements:

1. determination of the seriousness of any occurrence
2. crew communication and coordination;
3. appropriate self-defence responses
4. use of non-lethal protective devices assigned to crew members whose use is authorized by the Authority;
5. understanding of behaviour of terrorists so as to facilitate the ability of crew members to cope with hijacker behaviour and passenger responses;
6. live situational training exercises regarding various threat conditions;
7. flight crew compartment procedures to protect the aeroplane; and aeroplane search procedures and guidance on least-risk bomb locations where practicable.

**OPS 127. Reporting Acts of Unlawful Interference**

Following an act of unlawful interference, the pilot-in-command shall submit, without delay, a report of such an act to the designated local authority.

**SUB PART XIII**

**DANGEROUS GOODS**

**OPS 128. General Applicability**

No operator or pilot-in-command of a helicopter to which this Part applies shall accept for carriage, load and carry dangerous goods in any helicopter unless in accordance with the Technical Instructions for the Safe Transport of Dangerous Goods by Air.

**OPS 129. Operators with no specific approval for the transport of dangerous goods as cargo**

(1) The Authority shall ensure that operators with no specific approval to transport dangerous goods have—

1. established a dangerous goods training programme that meets the requirements of Part 13Dangerous Goods, the applicable requirements of the Technical Instructions, Part 1.4 and the details of the dangerous goods training programmes shall be included in the operator’s operations manuals; and
2. established dangerous goods policies and procedures in their operations manuals to meet, at a minimum, the requirements of Part 13 Dangerous Goods and Technical Instructions, to allow operator personnel to—

(i) identify and reject undeclared dangerous goods, including COMAT classified as dangerous goods; and

(ii) report to the Authority, and the State in which it occurred, any—

1. occasions when undeclared dangerous goods are discovered in cargo or mail; and
2. dangerous goods accidents and incidents.

**OPS 130. Operators with a specific approval for the transport of dangerous goods as cargo (Overview)**

(1) The Authority shall issue a specific approval for the transport of dangerous goods and ensure that the operator establishes a dangerous goods —

1. training programme that meets the requirements in the Technical Instructions, Part 1.4, and Part 13 Dangerous Goods, as appropriate and details of the dangerous goods training programme shall be included in the operator’s operations manuals.
2. policies and procedures in its operations manual to meet, at a minimum, the requirements of Part 13 Dangerous Goods, the Technical Instructions to enable operator personnel to—
3. identify and reject undeclared or mis-declared dangerous goods in cargo or mail, including COMAT classified as dangerous goods;
4. report to the Authority, and the State in which it occurred, any—
5. occasions when undeclared or mis-declared dangerous goods are discovered in cargo or mail; and
6. dangerous goods accidents and incidents;
7. report to the Authority any occasions when dangerous goods are discovered to have been carried:
8. when not loaded, segregated, separated or secured in accordance with the Technical Instructions, Part 7.2; and
9. without information having been provided to the pilot-in-command;
10. accept, handle, store, transport, load and unload dangerous goods, including COMAT classified as dangerous goods as cargo on board an aircraft; and
11. provide the pilot-in-command with accurate and legible written or printed information concerning dangerous goods that are to be carried as cargo;

(2) An operator shall ensure that for helicopter operations, with Authority approval to carry dangerous goods, the information provided to the PIC may be abbreviated or briefed by other means like radio communication, as part of the working flight documentation such as a journey log or operational flight plan where circumstances make it impractical to produce written or printed information or a dedicated form.

**OPS 131. Loading and securing of dangerous goods**

The operator shall ensure that packages or overpacks of dangerous goods bearing the “cargo aircraft only” label shall be loaded on a helicopter performing cargo only operations in accordance with Part 7.2.4.1 of the Technical Instructions.

**OPS 132. Dispensing or expending of dangerous goods from helicopters**

(1) The provisions in this section refer to operations where dangerous goods are carried on helicopters with the intent to dispense the items in flight for example, chemicals dispensed for the purpose of avalanche control.

(2) An operator shall prepare and keep current a manual containing operational guidelines and handling procedures for the use and guidance of flight, maintenance and ground personnel concerned in the dispensing or expending of dangerous goods.

(3) No person, other than a required flight crew member, or person necessary for handling or dispensing the dangerous goods, shall be carried on the aircraft.

(4)The operator of the aircraft shall have prior permission for the dispensing or expending of dangerous goods from the owners of any airport to be used.

**OPS 133. Provision of Information**

An operator shall ensure that all personnel, including third-party personnel, involved in the acceptance, handling, loading and unloading of cargo are informed of the operator’s specific approval and limitations with regard to the transport of dangerous goods.

**OPS 134. Domestic Commercial Air Transport Operations**

The provisions set forth in this Sub Part shall apply to operators, including in the case of domestic commercial air transport operations.

**OPS 135**  Compliance with laws, regulations and procedures  
   
(1) The pilot-in-command shall comply with the relevant laws, regulations and procedures of the States in which the helicopter is operated.  
   
(2) 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.

(3) 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 Registry. Such reports shall be submitted as soon as possible and normally within ten days.

1. 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.  
      
   (4) The pilot-in-command should have available on board the helicopter essential information concerning the search and rescue services in the areas over which it is intended the helicopter will be flown.

**OPS 136** The provisions of the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284) also apply to the acceptance for carriage, loading and carriage of dangerous goods in any general aviation helicopter.

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

**OPS 137 Specific approvals**  
   
The pilot-in-command shall not conduct operations for which a specific approval is required unless such approval has been issued by the State of Registry. Specific approvals shall follow the layout and contain at least the information listed in Appendix 5.  
   
  
**OPS 138** Adequacy of operating facilities  
   
The pilot-in-command shall not commence a flight unless it has been ascertained by every reasonable means available that the ground and/or water facilities available and directly required for such flight and for the safe operation of the helicopter are adequate, including communication facilities and navigation aids.  
   
**OPS 139** Heliport or landing location operating minima  
   
(1) The pilot-in-command shall establish operating minima in accordance with criteria specified by the State of Registry for each heliport or landing location to be used in operations. When establishing aerodrome operating minima, any conditions that may be prescribed in the list of specific approvals shall be observed. Such minima shall not be lower than any that may be established by the State of the Aerodrome, except when specifically approved by that State.  
   
  
(2) The State of Registry shall authorize operational credit(s) for operations with advanced aircraft. Where the operational credit relates to low visibility operations, the State of Registry shall issue a specific approval. Such authorizations shall not affect the classification of the instrument approach procedure.  
   
  
(3) When issuing a specific approval for the operational credit, the State of Registry shall ensure that the:  
   
a)aircraft meets the appropriate airworthiness certification requirements;  
   
b)information necessary to support effective crew tasks for the operation is appropriately available to both pilots where the number of flight crew members specified in the operations manual (or other documents associated with the certificate of airworthiness) is more than one;  
  
c)operator/owner has carried out a safety risk assessment of the operations supported by the equipment;  
  
  
d)operator/owner has established and documented normal and abnormal procedures and MEL;   
  
  
  
e)operator/owner has established a training programme for the flight crew members and relevant personnel involved in the flight preparation;  
   
  
  
f)operator/owner has established a system for data collection, evaluation and trend monitoring for low visibility operations for which there is an operational credit; and  
   
  
  
g)operator/owner has instituted appropriate procedures with respect to continuing airworthiness (maintenance and repair) practices and programmes.  
   
(4) For operations with operational credit with minima above those related to low visibility operations, the State of Registry shall establish criteria for the safe operation of the aircraft.  
   
  
**OPS 140 Briefing**  
   
  
(1) The pilot-in-command shall ensure that crew members and passengers are made familiar, by means of an oral briefing or by other means, with the location and the use of:  
   
  
  
a)seat belts or harnesses; and, as appropriate,  
   
  
  
b)emergency exits;  
   
  
  
c)life jackets;  
   
  
  
d)oxygen dispensing equipment; and  
   
  
  
e)other emergency equipment provided for individual use, including passenger emergency briefing cards.

1. The pilot-in-command shall ensure that all persons on board are aware of the location and general manner of use of the principal emergency equipment carried for collective use.

**OPS 141 Helicopter airworthiness and safety precautions**  
  
  
(1) A flight shall not be commenced until the pilot-in-command is satisfied that:  
   
  
  
a)the helicopter is airworthy, duly registered and that appropriate certificates with respect thereto are aboard the helicopter;  
   
  
  
b)the instruments and equipment installed in the helicopter are appropriate, taking into account the expected flight conditions;  
   
  
  
c)any necessary maintenance has been performed in accordance with Chapter 6;  
   
  
  
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; and  
   
  
  
f)the helicopter operating limitations contained in the flight manual, or its equivalent, will not be exceeded.

**OPS 142 Weather reports and forecasts**  
   
  
Before commencing a flight, the pilot-in-command shall be familiar with all available meteorological information appropriate to the intended flight. Preparation for a flight away from the vicinity of the place of departure, and for every flight under IFR, shall include: 1) a study of available current weather reports and forecasts; and 2) the planning of an alternative course of action to provide for the eventuality that the flight cannot be completed as planned because of weather conditions.  
   
  
**OPS 143 Limitations imposed by weather conditions**  
   
(1) Flight in accordance with VFR  
   
  
A flight, except one of purely local character in visual meteorological conditions, to be conducted in accordance with VFR shall not be commenced unless current meteorological reports, or a combination of current reports and forecasts, indicate that the meteorological conditions along the route, or that part of the route to be flown under VFR, will, at the appropriate time, be such as to enable compliance with these rules.

(2) Flight in accordance with IFR  
   
When an alternate is required. A flight to be conducted in accordance with IFR shall not be commenced unless the available information indicates that conditions, at the heliport of intended landing and at least one alternate heliport, will, at the estimated time of arrival, be at or above the heliport operating minima.  
   
  
(3) When no alternate is required. A flight to be conducted in accordance with IFR to a heliport when no alternate heliport is required shall not be commenced unless available current meteorological information indicates that the following meteorological conditions will exist from two hours before to two hours after the estimated time of arrival, or from the actual time of departure to two hours after the estimated time of arrival, whichever is the shorter period:  
   
  
  
a)a cloud base of at least 120 m (400 ft) above the minimum associated with the instrument approach procedure; and  
   
  
  
b)visibility of at least 1.5 km more than the minimum associated with the procedure.  
   
**OPS 144 Heliport operating minima**  
   
  
  
(1) A flight shall not be continued towards the heliport of intended landing unless the latest available meteorological information indicates that conditions at that heliport, or at least one alternate heliport, will, at the estimated time of arrival, be at or above the specified heliport operating minima.

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

**OPS 145 Flight in icing conditions**  
   
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.

**OPS 146 Alternate heliports**  
   
  
(1) For a flight to be conducted in accordance with IFR, at least one alternate heliport or landing location shall be specified in the operational flight plan and the flight plan, unless:  
   
  
  
a)the weather conditions in 2.6.2.2 prevail; or  
   
  
  
b)1)the heliport or landing location of intended landing is isolated and no alternate heliport or landing location is available; and  
   
  
  
2)an instrument approach procedure is prescribed for the isolated heliport of intended landing; and  
   
  
  
3)a point of no return (PNR) is determined in case of an offshore destination.

(2) Suitable offshore alternates may be specified subject to the following:  
   
  
  
a)the offshore alternates shall be used only after passing a PNR. Prior to a PNR, onshore alternates shall be used;  
   
  
  
b)mechanical reliability of critical control systems and critical components shall be considered and taken into account when determining the suitability of the alternate;  
   
  
  
c)one engine inoperative performance capability shall be attainable prior to arrival at the alternate;  
   
  
  
d)to the extent possible, deck availability shall be guaranteed; and  
   
  
  
e)weather information must be reliable and accurate.  
   
  
(3) 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.

**OPS 147 Fuel and oil requirements**  
   
  
(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) VFR operations. The fuel and oil carried in order to comply with 2.8.1 shall, in the case of VFR operations, be at least the amount to allow the helicopter to:  
   
  
  
a)fly to the landing site to which the flight is planned;  
   
  
  
b)have a final reserve fuel to fly thereafter for a period of 20 minutes at best-range speed; and  
   
  
  
c)have an additional amount of fuel to provide for the increased consumption on the occurrence of potential contingencies, as determined by the State and specified in the State regulations governing general aviation.

1. IFR operations. The fuel and oil carried in order to comply with 2.8.1 shall, in the case of IFR operations, be at least the amount to allow the helicopter:
2. When no alternate is required, in terms of 2.6.2.2, to fly to and execute an approach at the heliport or landing location to which the flight is planned, and thereafter to have:  
      
     
     
   a)a final reserve fuel to fly 30 minutes at holding speed at 450 m (1 500 ft) above the destination heliport or landing location under standard temperature conditions and approach and land; and  
      
     
     
   b)an additional amount of fuel to provide for the increased consumption on the occurrence of potential contingencies.
3. When an alternate is required, in terms of 2.6.2.1, to fly to and execute an approach, and a missed approach, at the heliport or landing location to which the flight is planned, and thereafter:  
      
     
     
   a)fly to and execute an approach at the alternate specified in the flight plan; and then  
      
     
     
   b)have a final reserve fuel to fly for 30 minutes at holding speed at 450 m (1 500 ft) above the alternate under standard temperature conditions, and approach and land; and  
      
     
     
   c)have an additional amount of fuel to provide for the increased consumption on the occurrence of potential contingencies.
4. When an alternate is required, in terms of 2.6.2.1, to fly to and execute an approach, and a missed approach, at the heliport or landing location to which the flight is planned, and thereafter:  
      
     
     
   a)fly to and execute an approach at the alternate specified in the flight plan; and then  
      
     
     
   b)have a final reserve fuel to fly for 30 minutes at holding speed at 450 m (1 500 ft) above the alternate under standard temperature conditions, and approach and land; and  
      
     
     
   c)have an additional amount of fuel to provide for the increased consumption on the occurrence of potential contingencies.
5. When no alternate heliport or landing location is available (i.e. the heliport of intended landing is isolated and no alternate is available), to fly to the heliport to which the flight is planned and thereafter for a period as specified by the State of the Operator.
6. In computing the fuel and oil required in 2.8.1, at least the following shall be considered:  
      
     
     
   a)meteorological conditions forecast;  
      
     
     
   b)expected air traffic control routings and traffic delays;  
      
     
     
   c)for IFR flight, one instrument approach at the destination heliport, including a missed approach;  
      
     
     
   d)the procedures for loss of pressurization, where applicable, or failure of one engine while en-route; and  
      
     
     
   e)any other conditions that may delay the landing of the helicopter or increase fuel and/or oil consumption.  
      
     
     
   Note.— Nothing in 2.8 precludes amendment of a flight plan in flight in order to replan the flight to another heliport, provided that the requirements of 2.8 can be complied with from the point where the flight has been replanned.
7. The use of fuel after flight commencement for purposes other than originally intended during pre-flight planning shall require a re-analysis and, if applicable, adjustment of the planned operation.

**OPS 148 In-flight fuel management**  
   
  
  
(1) The pilot-in-command shall monitor the amount of usable fuel remaining on board to ensure it is not less than the fuel required to proceed to a landing site where a safe landing can be made with the planned final reserve fuel remaining.  
   
(2) The pilot-in-command shall advise ATC of a minimum fuel state by declaring MINIMUM FUEL when, having committed to land at a specific landing site, the pilot calculates that any change to the existing clearance to that landing site, or other air traffic delays, may result in landing with less than the planned final reserve fuel.  
   
  
(3) The pilot-in-command shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL, when the usable fuel estimated to be available upon landing at the nearest landing site where a safe landing can be made is less than the required final reserve fuel in compliance with 2.8.

**OPS 149 Oxygen supply**  
   
  
  
(1) A flight to be operated at 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) 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 a proportion of the 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.

**OPS 150 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 2.10.1 or 2.10.2.

**OPS 151 In-flight emergency instruction**  
   
  
In an emergency during flight, the pilot-in-command shall ensure that all persons on board are instructed in such emergency action as may be appropriate to the circumstances.

**OPS 152 Weather reporting by pilots**  
   
When weather conditions likely to affect the safety of other aircraft are encountered, they shall be reported as soon as possible.

**OPS 153 Hazardous flight conditions**  
   
Hazardous flight conditions, other than those associated with meteorological conditions, encountered en-route shall be reported as soon as possible. The reports so rendered shall give such details as may be pertinent to the safety of other aircraft.

**OPS 154 Fitness of flight crew members**  
   
  
  
The pilot-in-command shall be responsible for ensuring that a flight:  
   
  
  
a)will not be commenced if any flight crew member is incapacitated from performing duties by any cause such as injury, sickness, fatigue or the effects of alcohol or drugs; and  
   
  
  
b)will not be continued beyond the nearest suitable heliport when flight crew members’ capacity to perform functions is significantly reduced by impairment of faculties from causes such as fatigue, sickness or lack of oxygen.

**OPS 155 Flight crew members at duty stations**  
   
  
  
  
  
(1) Take-off and landing  
   
  
  
All flight crew members required to be on flight deck duty shall be at their stations.

(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.

(3) Seat belts  
   
  
  
All flight crew members shall keep their seat belt fastened when at their stations.

1. Safety harness  
    When safety harnesses are provided, any flight crew member occupying a pilot’s seat should keep the safety harness fastened during the take-off and landing phases; all other flight crew members should 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.  
      
     
   **OPS 156 Instrument flight procedures**  
      
     
     
   (1) One or more instrument approach procedures designed to support instrument approach 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, to serve each final approach and take-off area or heliport utilized for instrument flight operations.

(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.

**OPS 157 Instruction — general**  
   
A helicopter rotor shall not be turned under power for the purpose of flight without a qualified pilot at the controls.

**OPS 158 Refuelling with passengers on board or rotors turning**  
   
(1) A helicopter should not be refuelled when passengers are embarking, on board or disembarking or when the rotor is turning unless it is attended by the pilot-in-command or other qualified personnel ready to initiate and direct an evacuation of the helicopter by the most practical and expeditious means available.

(2) When refuelling with passengers embarking, on board or disembarking, two-way communications should be maintained by helicopter inter-communications system or other suitable means between the ground crew supervising the refuelling and the pilot-in-command or other qualified personnel required by 2.19.1.  
   
**OPS 159 Over-water flights**  
   
  
All helicopters on flights over water in a hostile environment in accordance with 4.3.1 shall be certificated for ditching. Sea state shall be an integral part of ditching information.  
   
  
**OPS 160 HELICOPTER PERFORMANC**E  
   
OPERATING LIMITATIONS  
   
  
  
  
  
  
  
3.1 A helicopter shall be operated:  
   
  
  
a)in compliance with the terms of its airworthiness certificate or equivalent approved document;  
   
  
  
b)within the operating limitations prescribed by the certificating authority of the State of Registry; and  
   
  
  
c)within the mass limitations imposed by compliance with the applicable noise certification Standards in Annex 16, Volume I, unless otherwise authorized, in exceptional circumstances for a certain heliport where there is no noise disturbance problem, by the competent authority of the State in which the heliport is situated.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**FIRST SCHEDULE**

**SAFETY OVERSIGHT OF AIR OPERATORS**

* + 1. **PRIMARY AVIATION LEGISLATION**

The State of the Operator shall enact and implement laws that enable the State to regulate the certification and continued supervision of air operators, and the resolution of safety issues identified by the authority, and to ensure that compliance will result in an acceptable level of safety performance for the operations undertaken.

* + 1. **SPECIFIC OPERATING REGULATIONS**

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.

* + 1. **STATE SAFETY OVERSIGHT SYSTEM AND FUNCTIONS**
       1. The State of the Operator shall ensure that the authority is responsible for the safety oversight of air operators.
       2. 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.
       3. **Recommendation.—** *The methodology in 3.2 shall be documented.*
       4. 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.
    2. **QUALIFIED TECHNICAL PERSONNEL**

The State of the Operator shall require that the initial and recurrent training of the authority inspectors include aircraft-specific subjects.

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

* + 1. **TECHNICAL GUIDANCE, TOOLS AND PROVISION OF SAFETY-CRITICAL INFORMATION**
       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.
       2. 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 resolution of safety issues, including enforcement.
       3. The State of the Operator shall ensure that authority inspectors are provided with technical guidance manuals that addresses ethics, personal conduct and the avoidance of actual or perceived conflicts of interest in the performance of official duties.
    2. **CERTIFICATION OBLIGATIONS**

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.

* + 1. **CONTINUED SURVEILLANCE OBLIGATIONS**

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.

* + 1. **RESOLUTION OF SAFETY ISSUES**

*Note.— Provisions for the resolution of safety issues are contained in Appendix 1 to Annex 19.*

**SECOND SCHEDULE**

**ADDITIONAL REQUIREMENTS FOR OPERATIONS OF HELICOPTERS IN PERFORMANCE CLASS 3 IN**

**INSTRUMENT METEOROLOGICAL CONDITIONS (IMC)**

Airworthiness and operations requirements provided in accordance with Section II, Chapter 3, 3.4.1, shall satisfy the following**:**

1. **ENGINE RELIABILITY**
   1. Attaining and maintaining approval for engines used by helicopters operating in performance Class 3 in IMC:
      1. In order to attain initial approval for existing in-service engine types, reliability shall be shown to have a nominal power loss rate of less than 1 per 100 000 engine hours based on a risk management process.

*Note.— Power loss in this context is defined as any significant loss of power, the cause of which may be traced to engine, or engine component, design, maintenance or installation, including design or installation of the fuel ancillary or engine control systems.*

* + 1. In order to attain initial approval for new engine types, the State of Design shall assess engine models for acceptance for operations in performance Class 3 in IMC on a case-by-case basis.
    2. In order to maintain approval, the State of Design shall, through the continuing airworthiness process, ensure that engine reliability remains consistent with the intent of the Standard contained in 1.1.1.
  1. The operator shall be responsible for a programme for ongoing engine trend monitoring.
  2. To minimize the probability of in-flight engine failure, the engine shall be equipped with:

1. for turbine engines: a re-ignition system that activates automatically or a manually selectable continuous ignition system, unless the engine certification has determined that such a system is not required, taking into consideration the likely environmental conditions in which the engine is to be operated;
2. a magnetic particle detection or equivalent system that monitors the engine, accessories gearbox, and reduction gearbox, and which includes a flight deck caution indication; and
3. a means that would permit continuing operation of the engine through a sufficient power range to safely complete the flight in the event of any reasonably probable failure of the fuel control unit.
4. **SYSTEMS AND EQUIPMENT**

Helicopters operating in performance Class 3 in IMC shall be equipped with the following systems and equipment intended to ensure continued safe flight, or to assist in achieving a safe forced landing after an engine failure, under all allowable operating conditions:

1. either two separate electrical generating systems, each one capable of supplying all probable combinations of continuous in-flight electrical loads for instruments, equipment and systems required in IMC; or a primary electrical source and a standby battery or other alternate source of electric power that is capable of supplying 150 per cent of electrical loads of all required instruments and equipment necessary for safe emergency operations of the helicopter for at least one hour; and
2. an emergency electrical supply system of sufficient capacity and endurance, following loss of all normally generated power to, as a minimum:

*Note.— If a battery is used to satisfy the requirement for a second power source (see 2 a) above), an additional electrical power supply may not be required.*

* 1. maintain the operation of all essential flight instruments, communication and navigation systems during a descent from the maximum certificated altitude in an autorotational configuration to the completion of a landing;
  2. maintain the operation of the stabilization system, if applicable;
  3. lower the landing gear, if applicable;
  4. where required, provide power to one pitot heater, which must serve an airspeed indicator clearly visible to the pilot;
  5. provide for the operation of the landing light;
  6. provide for one engine restart, if applicable; and
  7. provide for the operation of the radio altimeter;

1. a radio altimeter;
2. an autopilot if intended as a substitute for a second pilot. In these cases, the State of Operator shall ensure the operator’s approval clearly states any conditions or limitations on its use;
3. a means to provide for at least one attempt at engine re-start;
4. an area navigation system approved for use in IFR, capable of being used to locate suitable landing areas in the event of an emergency;
5. a landing light that is independent of retractable landing gear and is capable of adequately illuminating the touchdown area in a night forced landing; and
6. an engine fire warning system.
7. **MINIMUM SERVICEABILITY REQUIREMENTS — OPERATING EQUIPMENT**

The State of the Operator shall specify the minimum serviceability requirements for operating equipment in helicopters operating in performance Class 3 in IMC.

1. **OPERATIONS MANUAL INFORMATION**

The operations manual shall include limitations, procedures, approval status and other information relevant to operations in performance Class 3 in IMC.

1. **EVENT REPORTING**
   1. The operator approved to conduct operations by helicopters in performance Class 3 in IMC shall report all significant failures, malfunctions or defects to the State of the Operator, who in turn shall notify the State of Design.
   2. The State of the Operator shall monitor operations in performance Class 3 in IMC so as to be able to take any actions necessary to ensure that the intended safety level is maintained. The State of the Operator shall notify major events or trends of particular concern to the appropriate type certificate holder and the State of Design.
2. **OPERATOR PLANNING**

Operator route planning shall take account of all relevant information in the assessment of intended routes or areas of operations, including the following:

1. the nature of the terrain to be overflown, including the potential for carrying out a safe forced landing in the event of an engine failure or major malfunction;
2. weather information, including seasonal and other adverse meteorological influences that may affect the flight; and
3. other criteria and limitations as specified by the State of the Operator.
4. **FLIGHT CREW EXPERIENCE, TRAINING AND CHECKING**
   1. The State of the Operator shall prescribe the minimum flight crew experience for helicopters operating in performance Class 3 in IMC.
   2. The operator’s flight crew training and checking programme shall be appropriate to operations in performance Class 3 in IMC, covering normal, abnormal and emergency procedures and, in particular, detection of engine failure including descent to a forced landing in IMC and, for single engine helicopters, entry into a stabilized autorotation.
5. **OPERATOR CERTIFICATION OR VALIDATION**

The operator shall demonstrate the ability to conduct operations in performance Class 3 in IMC through a certification and approval process specified by the State of the Operator.

*Note.— Guidance on the airworthiness and operational requirements is contained in Attachment E.*

**THIRD SCHEDULE**

**AIR OPERATOR CERTIFICATE (AOC)**

1. **PURPOSE AND SCOPE**
   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.
   2. The air operator certificate and its associated operations specifications shall define the operations for which the operator is authorized, including specific approvals, conditions and limitations.
2. **AOC TEMPLATE**

Note1— Section 56 requires a certified true copy of the AOC to be carried aboard.

Note 2—The operations specifications layout referred to in Section 10, shall be as follows:

|  |  |  |
| --- | --- | --- |
| **AIR OPERATOR CERTIFICATE** | | |
| 1 | **STATE OF THE OPERATOR2** | 1 |
|  | **ISSUING AUTHORITY3** |  |
| AOC #4:  Expiry date5: | **OPERATOR NAME6**  Dba trading name7: Operator address8: Telephone9:  Fax: Email: | **OPERATIONAL POINTS OF CONTACT10**  Contact details, at which operational management can be contacted without undue delay, are listed in 11. |
| 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. | | |
| Date of issue14: | Name and signature15: Title: | |

*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. Email to be provided if available.*
10. *The contact details include the telephone and fax numbers, including the country code, and the email 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.*
16. **OPERATIONS SPECIFICATIONS FOR EACH AIRCRAFT MODEL**

*Note.— Section 56, requires a copy of the operations specifications of this section to be carried aboard.*

* 1. For each helicopter model in the operator’s fleet, identified by helicopter make, model and series, the following information 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 specific approvals.

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

*list.*

* 1. The operations specifications layout referred to in Section 10, shall be as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **OPERATIONS SPECIFICATIONS**  (subject to the approved conditions in the operations manual) | | | | |
| **ISSUING AUTHORITY CONTACT DETAILS1**  Telephone: Fax: Email: | | | | |
| AOC#2: Operator name3: Date4: Signature:  Dba trading name3: | | | | |
| Aircraft model5: | | | | |
| Types of operation: Commercial air transportation ☐Passengers ☐ Cargo ☐ Other6: | | | | |
| Area(s) of operation7: | | | | |
| Special limitations8: | | | | |
| **SPECIFIC APPROVAL** | **YES** | **NO** | **DESCRIPTION 9** | **REMARKS** |
| Dangerous goods | ☐ | ☐ |  |  |
| Low visibility operations Approach and landing Take-off  Operational credit(s) | ☐  ☐  ☐ | ☐  ☐  ☐ | CAT10: RVR: m DH: ft RVR11: m  12 |  |
| RVSM13 ☐ N/A | ☐ | ☐ |  |  |
| EDTO14 ☐ N/A | ☐ | ☐ | Threshold time15: minutes  Maximum diversion time15: minutes |  |
| AR navigation specifications for PBN operations | ☐ | ☐ | 16 |  |
| Continuing airworthiness |  |  | 17 |  |
| EFB | ☐ | ☐ | 18 |  |
| Other 19 | ☐ | ☐ |  |  |

*Notes.—*

1. *Telephone contact details of the authority, including the country code. Email and fax 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.*](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), as defined by the issuing authority.*
8. *List the applicable special limitations (e.g. VFR only, day only).*
9. *List in this column the most permissive criteria for each specific approval (with appropriate criteria).*
10. *Insert the applicable instrument approach operation classified as Type B (CAT 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, or the equivalent horizontal visibility if RVR is not used. One line per approval may be used if different approvals are granted.*
12. *List the airborne capabilities (i.e. automatic landing, HUD, EVS, SVS, CVS) and associated operational credit(s) granted.*
13. *Performance-based navigation (PBN): one line is used for each PBN AR navigation specification approval (e.g. RNP AR APCH), with appropriate limitations listed in the “Descriptions” column.*
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. *List the EFB functions used for the safe operation of helicopters and any applicable limitations.*
16. *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).*

**FOURTH SCHEDULE**

**FLIGHT RECORDERS**

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

* a flight data recorder (FDR),
* a cockpit voice recorder (CVR),
* an airborne image recorder (AIR),
* a data link recorder (DLR).

When image or data link information is required to be recorded on a crash-protected flight recorder, it is permissible to record it on either the CVR or the FDR.

Lightweight flight recorders comprise one or more of the following:

* an aircraft data recording system (ADRS),
* a cockpit audio recording system (CARS),
* an airborne image recording system (AIRS),
* a data link recording system (DLRS).

When image or data link information is required to be recorded on a crash-protected flight recorder, it is permissible to record it on either the CARS or the ADRS.

* 1. **GENERAL REQUIREMENTS**
     1. Non-deployable flight recorder containers shall be painted a distinctive orange colour.
     2. Non-deployable crash-protected flight recorder containers shall:

1. carry reflective material to facilitate their location; and
2. have securely attached an automatically activated underwater locating device operating at a frequency of 37.5 kHz. At the earliest practical date, but not later than 1 January 2018, this device shall operate for a minimum of 90 days.
   * 1. Automatic deployable flight recorder containers shall:
3. be painted a distinctive orange colour, however the surface visible from outside the helicopter may be of another colour;
4. carry reflective material to facilitate their location; and
5. have an integrated automatically activated ELT.
   * 1. The flight recorder systems shall be installed so that:
6. the probability of damage to the recordings is minimized;
7. there is an aural or visual means for pre-flight checking that the flight recorder systems are operating properly;
8. if the flight recorder systems have an erasure device, the installation shall be designed to prevent operation of the device during flight time or crash impact; and
9. for helicopters for which the individual certificate of airworthiness is first issued on or after 1 January 2023, a flight crew-operated erase function shall be provided on the flight deck which, when activated, modifies the recording of a CVR and AIR so that it cannot be retrieved using normal replay or copying techniques. The installation shall be designed to prevent activation during flight. In addition, the probability of an inadvertent activation of an erase function during an accident shall also be minimized.

*Note.— The erase function is intended to prevent access to CVR and AIR recordings by normal replay or copying means, but would not prevent accident investigation authorities access to such recordings by specialized replay or copying techniques.*

* + 1. The crash-protected flight recorders shall be installed so that they receive electrical power from a bus that provides the maximum reliability for operation of the flight recorders without jeopardizing service to essential or emergency loads.
    2. The lightweight flight recorders shall be connected to a power source having the characteristics which ensure proper and reliable recording in the operational environment.
    3. The flight recorder systems, when tested by methods approved by the appropriate certificating authority, shall be demonstrated to be suitable for the environmental extremes over which they are designed to operate.
    4. Means shall be provided for an accurate time correlation between the flight recorder systems functions.
    5. The manufacturer usually provides the appropriate certificating authority with the following information in respect of the flight recorder systems:

1. manufacturer’s operating instructions, equipment limitations and installation procedures;
2. parameter origin or source and equations which relate counts to units of measurement; and
3. manufacturer’s test reports.
   1. **FLIGHT DATA RECORDER (FDR) AND AIRCRAFT DATA RECORDING SYSTEM (ADRS)**
      1. **Start and stop logic**

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

* + 1. **Parameters to be recorded**

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

* + - 1. The parameters that satisfy the requirements for FDRs, are listed in Table A4-1. The number of parameters to be recorded shall depend on helicopter complexity. The parameters without an asterisk (\*) are mandatory parameters which shall be recorded regardless of helicopter complexity. In addition, the parameters designated by an asterisk (\*) shall be recorded if an information data source for the parameter is used by helicopter systems or the flight crew to operate the helicopter. However, other parameters may be substituted with due regard to the helicopter type and the characteristics of the recording equipment.
      2. The following parameters shall satisfy the requirements for flight path and speed:
         * pressure altitude
         * indicated airspeed
         * outside air temperature
         * heading
         * normal acceleration
         * lateral acceleration
         * longitudinal acceleration (body axis)
         * time or relative time count
         * navigation data\*: drift angle, wind speed, wind direction, latitude/longitude
         * radio altitude\*
      3. If further FDR recording capacity is available, recording of the following additional information shall be considered:

1. additional operational information from electronic displays, such as electronic flight instrument systems (EFIS), electronic centralized aircraft monitor (ECAM) and engine indication and crew alerting system (EICAS); and
2. additional engine parameters (EPR, N1, fuel flow, etc.).
   * + 1. The parameters that satisfy the requirements for ADRS are the first 7 parameters listed in Table A4-3.
       2. If further ADRS recording capacity is available, the recording of any parameters from 8 onwards defined in Table A4-3 shall be considered.
     1. **Additional information**
        1. The measurement range, recording interval and accuracy of parameters on installed equipment is usually verified by methods approved by the appropriate certificating authority.
        2. Documentation concerning parameter allocation, conversion equations, periodic calibration and other serviceability/maintenance information shall be maintained by the operator/owner. The documentation shall be sufficient to ensure that accident investigation authorities have the necessary information to read out the data in engineering units.
   1. **COCKPIT VOICE RECORDER (CVR) AND COCKPIT AUDIO RECORDING SYSTEM (CARS)**
      1. **Start and stop logic**

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

* + 1. **Signals to be recorded**
       1. The CVR shall record simultaneously on four separate channels, or more, at least the following:

1. voice communication transmitted from or received in the aircraft by radio;
2. aural environment on the flight deck;
3. voice communication of flight crew members on the flight deck using the interphone system, if installed;
4. voice or audio signals identifying navigation or approach aids introduced in the headset or speaker; and
5. voice communication of flight crew members using the passenger address system, if installed.
   * + 1. **Recommendation***.—The preferred CVR audio allocation should be as follows:*
6. *pilot-in-command audio panel;*
7. *co-pilot audio panel;*
8. *additional flight crew positions and time reference; and*
9. *cockpit area microphone.*
   * + 1. The CARS shall record simultaneously on two separate channels, or more, at least the following:
10. voice communication transmitted from or received in the helicopter by radio;
11. aural environment on the flight deck; and
12. voice communication of flight crew members on the flight deck using the helicopter’s interphone system, if installed.
    * + 1. **Recommendation***.— The preferred CARS audio allocation should be as follows:*
13. *voice communication; and*
14. *aural environment on the flight deck.*
    1. **AIRBORNE IMAGE RECORDER (AIR)**

**AND AIRBORNE IMAGE RECORDING SYSTEM (AIRS)**

* + 1. **Start and stop logic**

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

* + 1. **Classes**
       1. A Class A AIR or AIRS captures the general cockpit area in order to provide data supplemental to conventional flight recorders.

*Note 1.— To respect crew privacy, the cockpit area view may be designed as far as practical to exclude the head and shoulders of crew members whilst seated in their normal operating position.*

*Note 2.— There are no provisions for Class A AIRs or AIRS in this document.*

* + - 1. A Class B AIR or AIRS captures data link message displays.
      2. A Class C AIR or AIRS captures instruments and control panels.

*Note.— A Class C AIR or AIRS may be considered as a means for recording flight data where it is not practical or is prohibitively expensive to record on an FDR, or where an FDR is not required.*

* 1. **DATA LINK RECORDER (DLR)**
     1. **Applications to be recorded**
        1. Where the helicopter flight path is authorized or controlled through the use of data link messages, all data link messages, both uplinks (to the helicopter) and downlinks (from the helicopter), shall be recorded on the helicopter. As far as practicable, the time the messages were displayed to the flight crew and the time of the responses shall too be recorded*.*

*Note.— Sufficient information to derive the content of the data link communications message, and the time the messages were displayed to the flight crew, is needed to determine an accurate sequence of events on board the aircraft.*

* + - 1. Messages applying to the applications listed in Table A4-2 shall be recorded. Applications without the asterisk (\*) are mandatory applications which shall be recorded regardless of the system complexity. Applications with an (\*) are to be recorded only as far as is practicable given the architecture of the system.
  1. **INSPECTIONS OF FLIGHT RECORDER SYSTEMS**
     1. Prior to the first flight of the day, the built-in test features for the flight recorders and flight data acquisition unit (FDAU), when installed, shall be monitored by manual and/or automatic checks.
     2. FDR systems or ADRS, CVR systems or CARS, and AIR systems or AIRS shall have recording inspection intervals of one year; subject to the approval from the appropriate regulatory authority, this period may be extended to two years, provided these systems have demonstrated a high integrity of serviceability and self-monitoring. DLR systems or DLRS shall have recording inspection intervals of two years; subject to the approval from the appropriate regulatory authority, this period may be extended to four years, provided these systems have demonstrated high integrity of serviceability and self- monitoring.
     3. Recording inspections shall be carried out as follows:

1. an analysis of the recorded data from the flight recorders shall ensure that the recorder operates correctly for the nominal duration of the recording;
2. the FDR or ADRS recording from a complete flight shall be examined in engineering units to evaluate the validity of all recorded parameters. Particular attention shall be given to parameters from sensors dedicated to the FDR or ADRS. Parameters taken from the aircraft’s electrical bus system need not be checked if their serviceability can be detected by other aircraft systems;
3. the readout facility shall have the necessary software to accurately convert the recorded values to engineering units and to determine the status of discrete signals;
4. an examination of the recorded signal on the CVR or CARS shall be carried out by replay of the CVR or CARS recording. While installed in the aircraft, the CVR or CARS shall record test signals from each aircraft source and from relevant external sources to ensure that all required signals meet intelligibility standards;
5. where practicable, during the examination, a sample of in-flight recordings of the CVR or CARS shall be examined for evidence that the intelligibility of the signal is acceptable; and
6. an examination of the recorded images on the AIR or AIRS shall be carried out by replay of the AIR or AIRS recording. While installed in the aircraft, the AIR or AIRS shall record test images from each aircraft source and from relevant external sources to ensure that all required images meet recording quality standards.
7. an examination of the recorded messages on the DLR or DLRS shall be carried out by replay of the DLR or DLRS recording.
   * 1. A flight recorder system shall be considered unserviceable if there is a significant period of poor-quality data, unintelligible signals or if one or more of the mandatory parameters is not recorded correctly.
     2. A report of the recording inspection shall be made available on request to regulatory authorities for monitoring purposes.
     3. Calibration of the FDR system:
8. for those parameters which have sensors dedicated only to the FDR and are not checked by other means, recalibration shall be carried out at least every five years or in accordance with the recommendations of the sensor manufacturer to determine any discrepancies in the engineering conversion routines for the mandatory parameters and to ensure that parameters are being recorded within the calibration tolerances; and
9. when the parameters of altitude and airspeed are provided by sensors that are dedicated to the FDR system, there shall be a recalibration performed as recommended by the sensor manufacturer, or at least every two years.

**Table A4-1. Parameter Characteristics for Flight Data Recorders**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Serial Parameter Applicability Measurement range number | | | Maximum sampling and recording  interval | Accuracy limits Recording  (sensor input resolution compared to FDR  readout) | |
| (seconds) |
| l | Time (UTC when available, | 24 hours | 4 | ±0.125% /h | 1 s |
|  | otherwise relative time |  |  |  |  |
|  | count or GNSS time sync) |  |  |  |  |
| 2 | Pressure altitude | –300 m (–1 000 ft) to maximum certificated altitude of aircraft  +1 500 m (+5 000 ft) | 1 | ±30 m to ±200 m  (±100 ft to ±700 ft) | 1.5 m (5 ft) |
| 3 | Indicated airspeed | As the installed pilot | 1 | ±3% | 1 kt |
|  |  | display measuring system |  |  |  |
| 4 | Heading | 360 | 1 | ±2 | 0.5 |
| 5 | Normal acceleration | –3 g to +6 g | 0.125 | ±0.09 g excluding a datum error of ±0.045 g | 0.004 g |
| 6 | Pitch attitude | ±75° or 100% of | 0.5 | ±2 | 0.5 |
|  |  | useable range whichever is greater |  |  |  |
| 7 | Roll attitude | ±180 | 0.5 | ±2 | 0.5 |
| 8 | Radio transmission | On-off (one discrete) | 1 | — | — |
|  | keying |  |  |  |  |
| 9 | Power on each | Full range | 1 (per engine) | ±2% | 0.1% of full range |
|  | engine |  |  |  |  |
| 10 | Main rotor: |  |  |  |  |
|  | Main rotor speed | 50–130% | 0.51 | ±2% | 0.3% of full range |
|  | Rotor brake | Discrete |  | — | — |
| 11 | Pilot input and/or | Full range | 0.5 | ±2% unless higher | 0.5% of operating range |
|  | control surface position  — primary controls |  | (0.25  recommended) | accuracy uniquely required |  |
|  | (collective pitch, longitudinal cyclic |  |  |  |  |
|  | pitch, lateral cyclic pitch, tail rotor |  |  |  |  |
|  | pedal) |  |  |  |  |
| 12 | Hydraulics, each | Discrete | 1 | — | — |
|  | system (low pressure and |  |  |  |  |
|  | selection) |  |  |  |  |
| 13 | Outside air temperature | Sensor range | 2 | ±2C | 0.3C |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Serial Parameter Applicability Measurement range number | | | Maximum sampling and recording  interval | Accuracy limits Recording  (sensor input resolution compared to FDR  readout) | |
| (seconds) |
| 14\* | Autopilot/ autothrottle/AFCS | A suitable combination of discretes | 1 | — | — |
|  | mode and engagement status |  |  |  |  |
| 15\* | Stability | Discrete | 1 | — | — |
|  | augmentation system |  |  |  |  |
|  | engagement |  |  |  |  |
| 16\* | Main | As installed | 1 | As installed | 6.895 kN/m2 (1 psi) |
|  | gearbox oil pressure |  |  |  |  |
| 17\* | Main gearbox oil | As installed | 2 | As installed | 1C |
|  | temperature |  |  |  |  |
| 18 | Yaw rate | ±400/second | 0.25 | ±1.5% maximum range excluding datum error of | ±2/s |
|  |  |  |  | ±5% |  |
| 19\* | Sling load force | 0 to 200% of certified load | 0.5 | ±3% of maximum range | 0.5% for maximum certified load |
| 20 | Longitudinal | ±1 g | 0.25 | ±0.015 g excluding a | 0.004 g |
|  | acceleration |  |  | datum error of ±0.05 g |  |
| 21 | Lateral acceleration | ±1 g | 0.25 | ±0.015 g excluding a datum error of ±0.05 g | 0.004 g |
| 22\* | Radio altitude | –6 m to 750 m  (–20 ft to 2 500 ft) | 1 | ±0.6 m (±2 ft) or ±3% whichever is greater below 150 m (500 ft) and  ±5% above 150 m  (500 ft) | 0.3 m (1 ft) below 150 m  (500 ft), 0.3 m (1 ft) +  0.5% of full range above 150 m (500 ft) |
| 23\* | Vertical beam | Signal range | 1 | ±3% | 0.3% of full range |
|  | deviation |  |  |  |  |
| 24\* | Horizontal beam | Signal range | 1 | ±3% | 0.3% of full range |
|  | deviation |  |  |  |  |
| 25 | Marker beacon passage | Discrete | 1 | — | — |
| 26 | Warnings | Discrete(s) | 1 | — | — |
| 27 | Each navigation receiver frequency | Sufficient to determine selected frequency | 4 | As installed | — |
|  | selection |  |  |  |  |
| 28\* | DME 1 and 2 distances | 0–370 km  (0–200 NM) | 4 | As installed | 1 852 m (1 NM) |

barometric setting (pilot and co-pilot)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Serial Parameter Applicability Measurement range number | | | Maximum sampling and recording  interval | Accuracy limits Recording  (sensor input resolution compared to FDR  readout) | |
| (seconds) |
| 29\* | Navigation data (latitude/longitude, | As installed | 2 | As installed | As installed |
|  | ground speed, drift angle, wind speed, |  |  |  |  |
|  | wind direction) |  |  |  |  |
| 30\* | Landing gear and gear selector | Discrete | 4 | — | — |
|  | position |  |  |  |  |
| 31\* | Engine | As installed | 1 | As installed |  |
|  | exhaust gas temperature |  |  |  |  |
|  | (T4) |  |  |  |  |
| 32\* | Turbine inlet temperature | As installed | 1 | As installed |  |
|  | (TIT/ITT) |  |  |  |  |
| 33\* | Fuel contents | As installed | 4 | As installed |  |
| 34\* | Altitude rate | As installed | 1 | As installed |  |
| 35\* | Ice detection | As installed | 4 | As installed |  |
| 36\* | Helicopter | As installed | — | As installed | — |
|  | health and usage monitor system |  |  |  |  |
| 37 | Engine control | Discrete | 1 | — | — |
|  | modes |  |  |  |  |
| 38\* | Selected | As installed |  | As installed | 0.1 mb |

64

(4 recommended)

(0.01 in Hg)

39\* Selected altitude (all pilot selectable modes of operation)

As installed 1 As installed Sufficient to determine

crew selection

40\* Selected speed (all pilot selectable modes of operation)

As installed 1 As installed Sufficient to determine

crew selection

41\* Selected Mach (all pilot selectable modes of operation)

As installed 1 As installed Sufficient to determine

crew selection

42\* Selected vertical speed (all pilot selectable modes of operation)

As installed 1 As installed Sufficient to determine

crew selection

43\* Selected heading (all pilot selectable modes of operation)

As installed 1 As installed Sufficient to determine

crew selection

status (selection of terrain display mode including pop-up display status) and (terrain alerts, both

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Serial Parameter Applicability Measurement range number | | | | Maximum sampling and recording  interval | Accuracy limits Recording  (sensor input resolution compared to FDR  readout) | |
| (seconds) |
| 44\* | Selected flight path (all pilot |  | As installed | 1 | As installed | Sufficient to determine crew selection |
|  | selectable modes of operation) |  |  |  |  |  |
| 45\* | Selected decision |  | As installed | 4 | As installed | Sufficient to |
|  | height |  |  |  |  | determine crew selection |
| 46\* | EFIS display format |  | Discrete(s) | 4 | — | — |
|  | (pilot and co-pilot) |  |  |  |  |  |
| 47\* | Multi- |  | Discrete(s) | 4 | — | — |
|  | function/ engine/alerts |  |  |  |  |  |
|  | display format |  |  |  |  |  |
| 48\* | Event marker |  | Discrete | 1 | — | — |
| 49\* | GPWS/TAWS/GCAS | Application for | Discrete(s) | 1 | As installed |  |

type certification is submitted to a Contracting State on or

cautions and warnings, after 1 January

and advisories) and (on/off switch position) and (operational status)

2023

50\* TCAS/ACAS (traffic alert and collision

Application for type

Discrete(s) 1 As installed

avoidance system) and certification is

(operational status)

submitted to a Contracting State on or after 1 January

2023

51\* Primary flight controls Application for

Full range 0.125 (0.0625

± 3% unless higher

0.5% of operating range

– pilot input forces

type certification is submitted to a Contracting State on or after 1 January

2023

Serial number

Parameter Applicability Measurement range Maximum

sampling and recording interval (seconds)

Accuracy limits (sensor input compared to FDR readout)

Recording resolution

52\* Computed centre of gravity

53\* Helicopter computed weight

Application for type certification is submitted to a Contracting State on or after 1 January

2023

Application for type certification is submitted to a Contracting State on or after 1 January

2023

As installed 64 As installed 1% of full range

As installed 64 As installed 1% of full range

**Table A4-2. Description of Applications for Data Link Recorders**

Item No. Application type Application description

* 1. Data link initiation This includes any applications used to log on to or initiate data link

service. In FANS-1/A and ATN, these are ATS facilities notification (AFN) and context management (CM) respectively.

Recording content

C

* 1. Controller/pilot communication
  2. Addressed surveillance

This includes any application used to exchange requests, C clearances, instructions and reports between the flight crew and controllers on the ground. In FANS-1/A and ATN, this includes

the CPDLC application. It also includes applications used for the exchange of oceanic (OCL) and departure clearances (DCL) as well as data link delivery of taxi clearances.

This includes any surveillance application in which the ground sets C up contracts for delivery of surveillance data. In FANS-1/A and

ATN, this includes the automatic dependent surveillance — contract (ADS-C) application. Where parametric data are reported within the message they shall be recorded unless data from the same source are recorded on the FDR.

* 1. Flight information This includes any service used for delivery of flight information to C

specific aircraft. This includes, for example, data link aviation weather report service (D-METAR), data link-automatic terminal service (D-ATIS), digital Notice to Airmen (D-NOTAM) and other textual data link services.

* 1. Aircraft broadcast surveillance
  2. Aeronautical operational control data

This includes elementary and enhanced surveillance systems, as M\* well as automatic dependent surveillance — broadcast (ADS-B)

output data. Where parametric data sent by the helicopter are reported within the message they shall be recorded unless data from the same source are recorded on the FDR.

This includes any application transmitting or receiving data used M\* for aeronautical operational control purposes (per the ICAO

definition of operational control).

Key:

C: Complete contents recorded.

M: Information that enables correlation to any associated records stored separately from the helicopter.

\*: Applications that are to be recorded only as far as is practicable given the architecture of the system.

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| N° | Parameter name | Minimum recording range | Maximum recording interval in seconds | Minimum recording accuracy | Minimum recording resolution | Remarks |
| 1 | Heading: |  |  |  |  |  |
|  | a) Heading (Magnetic or True) | ±180° | 1 | ±2° | 0.5° | \*Heading is preferred, if not |
|  |  |  |  |  |  | available, yaw |
|  |  |  |  |  |  | rate shall be recorded |
|  | b) Yaw rate | ±300°/s | 0.25 | ±1% + drift of | 2°/s |  |
|  |  |  |  | 360°/h |  |  |
| 2 | Pitch: |  |  |  |  |  |
|  | a) Pitch attitude | ±90° | 0.25 | ±2° | 0.5° | \*Pitch attitude is |
|  |  |  |  |  |  | preferred, if not  available, pitch |
|  |  |  |  |  |  | rate shall be |
|  |  |  |  |  |  | recorded |
|  | b) Pitch rate | ±300°/s | 0.25 | ±1% + drift of | 2°/s |  |
|  |  |  |  | 360°/h |  |  |
| 3 | Roll: |  |  |  |  |  |
|  | a) Roll attitude | ±180° | 0.25 | ±2° | 0.5° | \* Roll attitude is |
|  |  |  |  |  |  | preferred, if not |
|  |  |  |  |  |  | available, roll rate shall be recorded |
|  | b) Roll rate | ±300°/s | 0.25 | ±1% + drift of | 2°/s |  |
|  |  |  |  | 360°/h |  |  |
| 4 | Positioning system: |  |  |  |  |  |
|  | a) Time | 24 hours | 1 | ±0.5° | 0.1° | UTC time |
|  |  |  |  |  |  | preferred where available |
|  | b) Latitude/longitude | Latitude:±90° | 2 | As installed | 0.00005° |  |
|  |  | Longitude:±180° | (1 if available) | (0.00015°  recommended) |  |  |
|  | c) Altitude | –300 m (–1 000 ft) to | 2 | As installed | 1.5 m (5 ft) |  |
|  |  | maximum  certificated altitude | (1 if available) | (±15 m (±50 ft)  recommended) |  |  |
|  |  | of aircraft +1 500 m |  |  |  |  |
|  |  | (5 000 ft) |  |  |  |  |
|  | d) Ground speed | 0–1 000 kt | 2 | As installed | 1 kt |  |
|  |  |  | (1 if available) | (±5 kt |  |  |
|  |  |  |  | recommended) |  |  |
|  | e) Track | 0–360° | 2 | As installed | 0.5° |  |
|  |  |  | (1 if available) | (± 2° |  |  |
|  |  |  |  | recommended) |  |  |
|  | f) Estimated error | Available range | 2 | As installed | As installed | Shall be recorded |
|  |  |  | (1 if available) |  |  | if readily |
|  |  |  |  |  |  | available |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| N° | Parameter name | Minimum recording range | Maximum recording interval in seconds | Minimum recording accuracy | Minimum recording resolution | Remarks |
| 5 | Normal acceleration | –3 g to + 6 g | 0.25 | As installed | 0.004 g |  |
|  |  |  | (0.125 if  available) | (±0.09 g  excluding a |  |  |
|  |  |  |  | datum error of |  |  |
|  |  |  |  | ±0.05 g  recommended) |  |  |
| 6 | Longitudinal acceleration | ±1 g | 0.25 | As installed | 0.004 g |  |
|  |  |  | (0.125 if  available) | (±0.015 g  excluding a |  |  |
|  |  |  |  | datum error of |  |  |
|  |  |  |  | ±0.05 g  recommended) |  |  |
| 7 | Lateral acceleration | ±1 g | 0.25 | As installed | 0.004 g |  |
|  |  |  | (0.125 if  available) | (±0.015 g  excluding a |  |  |
|  |  |  |  | datum error of |  |  |
|  |  |  |  | ±0.05 g  recommended) |  |  |
| 8 | External static pressure | 34.4 hPa (1.02 in-Hg) | 1 | As installed | 0.1 hPa |  |
|  | (or pressure altitude) | to 310.2 hPa  (9.16 in-Hg) or |  | (±1 hPa  (0.3 in-Hg) or | (0.03 in-Hg) or  1.5 m (5 ft) |  |
|  |  | available sensor |  | ±30 m (±100 ft) |  |  |
|  |  | range |  | to ±210 m  (±700 ft) |  |  |
|  |  |  |  | recommended) |  |  |
| 9 | Outside air temperature (or total air temperature) | –50° to +90°C or available sensor | 2 | As installed (±2°C | 1°C |  |
|  |  | range |  | recommended) |  |  |
| 10 | Indicated air speed | As the installed pilot display measuring | 1 | As installed (±3% | 1 kt (0.5 kt recommended) |  |
|  |  | system or available |  | recommended) |  |  |
|  |  | sensor range |  |  |  |  |
| 11 | Main rotor speed (Nr) | 50% to 130% or | 0.5 | As installed | 0.3% of full |  |
|  |  | available sensor |  |  | range |  |
|  |  | range |  |  |  |  |
| 12 | Engine RPM (\*) | Full range including | Each engine each | As installed | 0.2% of full | \*For piston- |
|  |  | overspeed condition | second |  | range | engined |
|  |  |  |  |  |  | helicopters |
| 13 | Engine oil pressure | Full range | Each engine each | As installed | 2% of full range |  |
|  |  |  | second | (5% of full range |  |  |
|  |  |  |  | recommended) |  |  |
| 14 | Engine oil temperature | Full range | Each engine each | As installed | 2% of full range |  |
|  |  |  | second | (5% of full range |  |  |
|  |  |  |  | recommended) |  |  |
| 15 | Fuel flow or pressure | Full range | Each engine each | As installed | 2% of full range |  |
|  |  |  | second |  |  |  |
| 16 | Manifold pressure (\*) | Full range | Each engine each second | As installed | 0.2% of full range | \*For piston- engined |
|  |  |  |  |  |  | helicopters |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| N° | Parameter name | Minimum recording range | Maximum recording interval in seconds | Minimum recording accuracy | Minimum recording resolution | Remarks |
| 17 | Engine thrust/power/ | Full range | Each engine each | As installed | 0.1% of full | \*Sufficient |
|  | torque parameters  required to determine |  | second |  | range | parameters e.g.  EPR/N1 or |
|  | propulsive thrust/power\* |  |  |  |  | torque/Np as |
|  |  |  |  |  |  | appropriate to the  particular engine |
|  |  |  |  |  |  | shall be recorded |
|  |  |  |  |  |  | to determine  power. A margin |
|  |  |  |  |  |  | for possible |
|  |  |  |  |  |  | overspeed should  be provided. Only |
|  |  |  |  |  |  | for turbine- |
|  |  |  |  |  |  | engined helicopters. |
| 18 | Engine gas generator | 0–150% | Each engine each | As installed | 0.2% of full | \*Only for |
|  | speed (Ng) (\*) |  | second |  | range | turbine-engined helicopters |
| 19 | Free power turbine speed | 0–150% | Each engine each | As installed | 0.2% of full | \*Only for |
|  | (Nf) (\*) |  | second |  | range | turbine-engined helicopters |
| 20 | Collective pitch | Full range | 0.5 | As installed | 0.1% of full |  |
|  |  |  |  |  | range |  |
| 21 | Coolant temperature (\*) | Full range | 1 | As installed | 1° C | \*Only for piston- |
|  |  |  |  | (±5°C |  | engined |
|  |  |  |  | recommended) |  | helicopters |
| 22 | Main voltage | Full range | Each engine each | As installed | 1 Volt |  |
|  |  |  | second |  |  |  |
| 23 | Cylinder head temperature (\*) | Full range | Each cylinder each second | As installed | 2% of full range | \*Only for piston- engined |
|  |  |  |  |  |  | helicopters |
| 24 | Fuel quantity | Full range | 4 | As installed | 1% of full range |  |
| 25 | Exhaust gas temperature | Full range | Each engine each | As installed | 2% of full range |  |
|  |  |  | second |  |  |  |
| 26 | Emergency voltage | Full range | Each engine each second | As installed | 1 Volt |  |
| 27 | Trim surface position | Full range or each | 1 | As installed | 0.3% of full |  |
|  |  | discrete position |  |  | range |  |
| 28 | Landing gear position | Each discrete | Each gear every | As installed |  | \*Where available, |
|  |  | position\* | two seconds |  |  | record up-and- |
|  |  |  |  |  |  | locked and down-  and-locked |
|  |  |  |  |  |  | position |
| 29 | Novel/unique aircraft features | As required | As required | As required | As required |  |

**SIXTH SCHEDULE**

**ARTICLE 83 *bis* AGREEMENT SUMMARY**

*The Article 83* bis *agreement summary should contain the information in the template at paragraph 2 or 3 as applicable, in a standardized format. A certified true copy of the agreement summary shall be carried on board.*

Article 83 *bis* agreement summary for commercial air transport

|  |  |  |  |
| --- | --- | --- | --- |
| **ARTICLE 83 *bis* AGREEMENT SUMMARY** | | | |
| Title of the Agreement: |  | | |
| State of Registry: |  | | Focal point: |
| State of the principal location of a general aviation operator: |  | | Focal point: |
| Date of signature: | By State of Registry1: | | |
| By State of the principal location of a general aviation operator1: | | |
| Duration: | Start Date1: | End Date (if applicable)2: | |
| Languages of the Agreement |  | | |
| ICAO Registration No.: |  | | |
| Umbrella Agreement (if any) with ICAO Registration number: |  | | |

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Aircraft affected by the transfer of responsibilities to the State of the principal location of a general aviation operator** | | | | | |
| Aircraft make, model, series | Nationality and registration marks | Serial No | AOC No.  (Commercial air transport) | Dates of transfer of responsibilities | |
| From1 | To (if applicable)2 |
|  |  |  |  |  |  |

*Notes.—*

*1. dd/mm/yyyy.*

*2. dd/mm/yyyy or N/A if not applicable.*

*3. Square brackets indicate information that needs to be provided*

* 1. **Article 83 *bis* agreement summary for general aviation**

|  |  |  |  |
| --- | --- | --- | --- |
| **ARTICLE 83 *bis* AGREEMENT SUMMARY** | | | |
| Title of the Agreement: |  | | |
| State of Registry: |  | | Focal point: |
| State of the principal location of a general aviation operator: |  | | Focal point: |
| Date of signature: | By State of Registry1: | | |
| By State of the principal location of a general aviation operator1: | | |
| Duration: | Start Date1: | End Date (if applicable)2: | |
| Languages of the Agreement |  | | |
| ICAO Registration No.: |  | | |
| Umbrella Agreement (if any) with ICAO Registration number: |  | | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Convention on international Civil**  **Aviation** | **ICAO Annexes affected by the transfer of responsibility in respect of certain functions and duties to the State of the principal location of a general aviation operator** | | | | | | |
| Article 12: Rules of the Air | Annex 2, all chapters | Yes | ☐ |  | | | |
| No | ☐ |
| Article 30 a): Aircraft radio equipment | Radio Station Licence) | Yes | ☐ |  | | | |
| No | ☐ |
| Articles 30 b)  and 32 a): Personnel Licensing | Annex 1, Chapters 1, 2, 3 and 6;  and Annex 6 Part I (radio operator); or Annex 6, Part III, section II (composition of the flight crew (radio operator)); and/or Annex 6, Part II (qualifications and/or flight crew member licensing);  or Annex 6, Part III, Section III (qualifications) | Yes | ☐ | Annex 6: paragraph]3 | [Specify | Part | and |
| No | ☐ |
|  | |
| Article 31: Certificates of Airworthiness | Annex 6  Part I or Part III, Section II | Yes | ☐ | [Specify Part and chapters]3 | | | |
| No | ☐ |
| Annex 6  Part II or Part III, Section III | Yes | ☐ | [Specify Part and chapters]3 | | | |
| No | ☐ |
| Annex 8  Part II, Chapters 3 and 4 | Yes | ☐ | [Specify chapters]3 | | | |
| No | ☐ |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Aircraft affected by the transfer of responsibilities to the State of the principal location of a general aviation operator** | | | | | |
| Aircraft make, model, series | Nationality and registration marks | Serial No | AOC No.  (Commercial air  transport) | Dates of transfer of responsibilities | |
| From1 | To (if applicable)2 |
|  |  |  |  |  |  |

**SEVENTH SCHEDULE**

**FATIGUE RISK MANAGEMENT SYSTEM (FRMS) REQUIREMENTS**

*Note.— Guidance on the development and implementation of FRMS regulations is contained in the* Manual for the Oversight of Fatigue Management Approaches *(Doc 9966).*

A FRMS shall contain, as a minimum:

* 1. **FRMS POLICY AND DOCUMENTATION**
     1. **FRMS policy**
        1. The operator shall define its FRMS policy, with all elements of the FRMS clearly identified.
        2. The policy shall require that the scope of the FRMS be clearly defined in the operations manual.
        3. The policy shall:

1. reflect the shared responsibility of management, flight and cabin crews, and other involved personnel;
2. clearly state the safety objectives of the FRMS;
3. be signed by the accountable executive of the organization;
4. be communicated, with visible endorsement, to all the relevant areas and levels of the organization;
5. declare management commitment to effective safety reporting;
6. declare management commitment to the provision of adequate resources for the FRMS;
7. declare management commitment to continuous improvement of the FRMS;
8. require that clear lines of accountability for management, flight and cabin crews, and all other involved personnel be identified; and
9. require periodic reviews to ensure it remains relevant and appropriate.

*Note.— Effective safety reporting is described in the* Safety Management Manual *(Doc 9859).*

* + 1. **FRMS documentation**

The operator shall develop and keep current FRMS documentation that describes and records:

1. FRMS policy and objectives;
2. FRMS processes and procedures;
3. accountabilities, responsibilities and authorities for these processes and procedures;
4. mechanisms for ongoing involvement of management, flight and cabin crew members, and all other involved personnel;
5. FRMS training programmes, training requirements and attendance records;
6. scheduled and actual flight times, flight duty periods, duty periods and rest periods with significant deviations and reasons for deviations noted; and

*Note.— Significant deviations are described in the* Manual for the Oversight of Fatigue Management Approaches

*(Doc 9966).*

1. FRMS outputs including findings from collected data, recommendations and actions taken.
   1. **FATIGUE RISK MANAGEMENT PROCESSES**
      1. **Identification of hazards**

*Note.— Legal guidance for the protection of information from safety data collection and processing systems is contained in Attachment B to the first edition of Annex 19.*

* + - 1. The operator shall develop and maintain three fundamental and documented processes for fatigue hazard identification:

*Predictive*

* + - * 1. The predictive process shall identify fatigue hazards taking into account factors known to affect sleep and fatigue and their effects on performance. Methods of examination may include, but are not limited to:

1. operator or industry operational experience and data collected on similar types of operations;
2. evidence-based scheduling practices; and
3. bio-mathematical models.

*Proactive*

* + - * 1. The proactive process shall identify fatigue hazards within current flight operations. Methods of examination may include, but are not limited to:

1. self-reporting of fatigue risks;
2. crew fatigue surveys;
3. relevant flight and cabin crew performance data;
4. available safety databases and scientific studies; and
5. analysis of planned versus actual time worked.

*Reactive*

* + - * 1. The reactive process shall identify the contribution of fatigue hazards to reports and events associated with potential negative safety consequences in order to determine how the impact of fatigue could have been minimized. As a minimum, the process shall be triggered by any of the following:

1. fatigue reports;
2. confidential reports;
3. audit reports;
4. incidents; and
5. flight data analysis events.
   1. **Risk assessment**
      1. The operator shall develop and implement risk assessment procedures that determine the probability and potential severity of fatigue-related events and identify when the associated risks require mitigation.
      2. The risk assessment procedures shall review identified hazards and link them to:
6. operational processes;
7. their probability;
8. possible consequences; and
9. the effectiveness of existing safety barriers and controls.
   1. **Risk mitigation**

The operator shall develop and implement risk mitigation procedures that:

1. select the appropriate mitigation strategies;
2. implement the mitigation strategies; and
3. monitor the strategies’ implementation and effectiveness.
   1. **FRMS SAFETY ASSURANCE PROCESSES**

The operator shall develop and maintain FRMS safety assurance processes to:

1. provide for continuous FRMS performance monitoring, analysis of trends, and measurement to validate the effectiveness of the fatigue safety risk controls. The sources of data may include, but are not limited to:
   1. hazard reporting and investigations;
   2. audits and surveys; and
   3. reviews and fatigue studies;
2. provide a formal process for the management of change which shall include, but is not limited to:
   1. identification of changes in the operational environment that may affect FRMS;
   2. identification of changes within the organization that may affect FRMS; and
   3. consideration of available tools which could be used to maintain or improve FRMS performance prior to implementing changes; and
3. provide for the continuous improvement of the FRMS. This shall include, but is not limited to:
   1. the elimination and/or modification of risk controls that have had unintended consequences or that are no longer needed due to changes in the operational or organizational environment;
   2. routine evaluations of facilities, equipment, documentation and procedures; and
   3. the determination of the need to introduce new processes and procedures to mitigate emerging fatigue-related risks.
   4. **FRMS PROMOTION PROCESSES**

FRMS promotion processes support the ongoing development of the FRMS, the continuous improvement of its overall performance, and attainment of optimum safety levels. The following shall be established and implemented by the operator as part of its FRMS:

1. training programmes to ensure competency commensurate with the roles and responsibilities of management, flight and cabin crew, and all other involved personnel under the planned FRMS; and
2. an effective FRMS communication plan that:
   1. explains FRMS policies, procedures and responsibilities to all relevant stakeholders; and
   2. describes communication channels used to gather and disseminate FRMS-related information*.*

**EIGHTH SCHEDULE**

**CONTENTS OF AN OPERATIONS MANUAL**

* + 1. **ORGANIZATION**
       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 shall be organized with the following contents and structure:

1. general;
2. aircraft operating information;
3. routes and aerodromes; and
4. training.
   * 1. **CONTENTS**

The operations manual referred to in 1.1 shall contain at the least the following:

* + - 1. **General**
         1. Instructions outlining the responsibilities of operations personnel pertaining to the conduct of flight operations.
         2. Information and policy relating to fatigue management including:

1. policies pertaining to the flight time, flight duty periods, duty period limitations and rest requirements for flight and cabin crew members, in accordance with Section II, Chapter 2, 2.8; and
2. where applicable, policy and documentation pertaining to the operator’s FRMS, in accordance with Appendix 7.
   * + - 1. A list of the navigation equipment to be carried, including any requirements relating to operations where performance-based navigation is prescribed.
         2. The circumstances in which a radio listening watch is to be maintained.
         3. The method for determining minimum flight altitudes.
         4. The methods for determining heliport operating minima.
         5. Safety precautions during refuelling with passengers on board.
         6. Ground handling arrangements and procedures.
         7. Procedures, as prescribed in Annex 12, for pilots-in-command observing an accident.
         8. The flight crew for each type of operation including the designation of the succession of command.
         9. 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 engines while en-route.
         10. 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.
         11. Instructions for mass and balance control.
         12. Instructions for the conduct and control of ground de-icing/anti-icing operations.
         13. The specifications for the operational flight plan.
         14. Standard operating procedures (SOP) for each phase of flight.
         15. Instructions on the use of normal checklists and the timing of their use.
         16. Departure contingency procedures.
         17. Instructions on the maintenance of altitude awareness.
         18. Instructions on the clarification and acceptance of ATC clearances, particularly where terrain clearance is involved.
         19. Departure and approach briefings.
         20. Route and destination familiarization.
         21. Conditions required to commence or to continue an instrument approach.
         22. Instructions for the conduct of precision and non-precision instrument approach procedures.
         23. Allocation of flight crew duties and procedures for the management of crew workload during night and IMC instrument approach operations.
         24. Information and instructions relating to the interception of civil aircraft including:
3. procedures, as prescribed in Annex 2, for pilots-in-command of intercepted aircraft; and
4. visual signals for use by intercepting and intercepted aircraft, as contained in Annex 2.
   * + - 1. Details of the safety management system (SMS) provided in accordance with Chapters 3 and 4 of Annex 19.
         2. 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).*

* + - * 1. Security instructions and guidance.
        2. The search procedure checklist provided in accordance with Section II, Chapter 11, 11.1.
        3. Instructions and training requirements for the use of head-up displays (HUD) or enhanced vision systems (EVS) equipment as applicable.
        4. Instructions and training requirements for the use of the EFB, as applicable.
      1. **Aircraft operating information**
         1. Certification limitations and operating limitations.
         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.
         3. Flight planning data for pre-flight and in-flight planning with different thrust/power and speed settings.
         4. Instructions and data for mass and balance calculations.
         5. Instructions for aircraft loading and securing of load.
         6. Aircraft systems, associated controls and instructions for their use, as required by Section II, Chapter 4, 4.1.4.
         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.
         8. Checklist of emergency and safety equipment and instructions for its use.
         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.
         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.
         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.
         12. The ground-air visual signal code for use by survivors, as contained in Annex 12.
      2. **Routes, aerodromes and heliports**
         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. The minimum flight altitudes for each route to be flown.
         3. Heliport operating minima for each of the heliports that are likely to be used as heliports of intended landing or as alternate heliports.
         4. The increase of heliport operating minima in case of degradation of approach or heliport facilities.
         5. Instructions for the use of aerodrome operating minima for instrument approaches applicable to the use of HUD and EVS.
      3. **Training**
         1. Details of the flight crew training programme and requirements, as required by Section II, Chapter 7, 7.3.
         2. Details of the cabin crew duties training programme as required by Section II, Chapter 10, 10.3.
         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.*

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**NINTH SCHEDULE**

**MARKING OF BREAK-IN POINTS**

1. If the corner markings are more than 2 m apart, intermediate lines 9 cm × 3 cm shall be inserted so that there is no more than 2 m between adjacent markings.

*Note. — This Standard does not require any helicopter to have break-in areas.*

9 cm

9 cm

3 cm 3 cm

3 cm

Not over 2 m

9 cm

MARKING OF BREAK-IN POINTS (see 4.2.4)