

Civil Aviation (Operations of Aircraft) Regulations, 2023

IT is hereby notified that the Minister of Transport and Infrastructural Development in consultation with the Board has, in terms of section 79 (1) of the Civil Aviation Act [*Chapter 13:16*], approved the following regulations—

PART I

Title

1. These regulations may be cited as the Civil Aviation (Operations of Aircraft) Regulations, 2023.

Interpretation

2. In these regulations, unless the context otherwise requires—

“ACAS” means airborne collision avoidance system;

“accelerate-stop distance available (ASDA)” means the length of the take-off run available plus the length of stopway, if provided;

“acceptance checklist” means a document used to assist in carrying out a check on the external appearance of packages of dangerous goods and their associated documents to determine that all appropriate requirements have been met;

“accepting unit” means air traffic control unit next to take control of an aircraft;

“accident” means an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which—

(a) a person is fatally or seriously injured as a result of—

(i) being in the aircraft;

(ii) direct contact with any part of the aircraft, including parts which have become detached from the aircraft; or

(iii) direct exposure to jet blast, except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew;

(b) the aircraft sustains damage or structural failure which adversely affects the structural strength, performance or flight characteristics of the aircraft, and would normally require major repair or replacement of the affected component, except for engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windcreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome); or

(c) The aircraft is missing or is completely inaccessible;

“accident investigation authority” means the Accident Investigation Unit responsible for aircraft accident and incident investigations established in terms of section 55 of the Act;

“acclimated” means a condition in which a flight crew member has been in a theatre for 72 hours or has been given at least 36 consecutive hours free from duty;

“accountable manager” means the person acceptable to the Authority who has corporate authority for ensuring that all operations and maintenance activities can be financed and carried out to the standard required by the Authority, and any additional requirements defined by the operator;

“accredited medical conclusion” means the conclusion reached by one or more medical experts acceptable to the Authority for the purposes of the case concerned, in consultation with flight operations or other experts as necessary;

- “accredited representative” relating to an aircraft accident, means a person designated by the State, on the basis of his or her qualifications, for the purpose of participating in an investigation conducted by another party. Where the State has established an accident investigation authority, the designated accredited representative would normally be from that authority;
- “acrobatic flight” means manoeuvres intentionally performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude, or an abnormal variation in speed;
- “acrobatic flight” means manoeuvres intentionally performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude, or an abnormal variation in speed;
- “acts of unlawful interference” means acts, or attempted acts, such as to jeopardise the safety of civil aviation, including but not limited to the—
- (a) unlawful seizure of aircraft;
 - (b) destruction of an aircraft in service;
 - (c) hostage-taking on board aircraft or on aerodromes;
 - (d) forcible intrusion on board an aircraft, at an airport or on the premises of an aeronautical facility;
 - (e) introduction on board an aircraft or at an airport of a weapon or hazardous device or material intended for criminal purposes;
 - (f) use of an aircraft in service for the purpose of causing death, serious bodily injury, or serious damage to property or the environment; and
 - (g) communication of false information such as to jeopardise the safety of an aircraft in flight or on the ground, of passengers, crew, ground personnel or the general public, at an airport or on the premises of a civil aviation facility;
- “adapted competency model” means a group of competencies with their associated description and performance criteria adapted from an ICAO competency framework that an organisation uses to develop competency-based training and assessment for a given role;
- “ADS-C agreement” means a reporting plan that establishes the conditions of ADS-C data reporting (that is, data required by the air traffic services or control unit and frequency of ADS-C reports that have to be agreed to prior to the provision of the ADS-C services);
- “ADS contract” means a means by which the terms of an ADS agreement will be exchanged between the ground system and the aircraft, specifying under what conditions ADS reports would be initiated, and what data would be contained in the reports.
- “advanced aircraft” means an aircraft with equipment in addition to that required for a basic aircraft for a given take-off, approach or landing operation.
- “advisor” in relation to an aircraft accident, means a person appointed by the Authority on the basis of his or her qualifications, for the purpose of assisting its accredited representative in an investigation;
- “advisory airspace” means an airspace of defined dimensions, or designated route, within which air traffic advisory service is available;
- “advisory route” means a designated route along which air traffic advisory service is available;
- “aerial work” means an aircraft operation in which an aircraft is used for specialised services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement;
- “aerodrome/airport/heliport” 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;
- “aerodrome control service” means an air traffic control service for aerodrome traffic;
- “aerodrome control tower” means a unit established to provide air traffic control service to aerodrome traffic;
- “aerodrome/Heliport operating minima” means the limits of usability of an aerodrome for—
- (a) take-off, expressed in terms of runway visual range or visibility and, if necessary, cloud conditions;
 - (b) landing in 2D instrument approach operations, expressed in terms of visibility or runway visual range and minimum descent altitude or height (MDA/H) and, if necessary, cloud conditions; and
 - (c) landing in 3D instrument approach operations, expressed in terms of visibility or runway visual range and decision altitude or height (DA/H); and as appropriate to the type or category of the operation;

- “aerodrome RFFS category” means the RFFS category for a given aerodrome, as published in the appropriate Aeronautical Information Publication;
- “aeroplane RFFS category” means the category derived from RCATS (Aerodromes) Table 9-1 for a given aeroplane type;
- “aerodrome/standby reserve” means a defined duty period during which a flight crew member is required by an operator to be at an airport for a possible assignment;
- “aerodrome traffic” means all traffic on the manoeuvring area of an aerodrome and all aircraft flying in the vicinity of an aerodrome;
- “aerodrome traffic zone” means an airspace of defined dimensions established around an aerodrome for the protection of aerodrome traffic;
- “aeronautical experience” means pilot time obtained in an aircraft, approved flight simulation training device for meeting the training and flight time requirements of these regulations;
- “Aeronautical Information Publication” means a publication issued by or with the authority of the Authority and containing aeronautical information of a lasting character essential to air navigation;
- “aeronautical product” means any aircraft, aircraft engine, propeller, or subassembly, appliance, material, part, or component to be installed thereon;
- “Aeronautical mobile service (RR SI.32)” means a mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may participate; emergency position-indicating radio beacon stations may also participate in this service on designated distress and emergency frequencies.
- “Aeronautical telecommunication station” means a station in the aeronautical telecommunication service;
- “aeronautical station (RR SI.81)” means a land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea;
- “aeroplane” means a power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight;
- “aeroplane flight manual” is as defined under aircraft flight manual;
- “Airborne collision avoidance system (ACAS)” means an aircraft system based on secondary surveillance radar (SSR) transponder signals which operates independently of ground-based equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with SSR transponders.
- “agreement summary” when an aircraft is operating under an Article 83 bis agreement between Zimbabwe as 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 Zimbabwe as the State of Registry to that other State; and the other State in this definition refers to the State of the Operator for commercial air transport operations;
- “agricultural aircraft operation” means the operation of an aircraft for the purpose of—
- (a) dispensing any economic poison;
 - (b) dispensing any other substance intended for plant nourishment, soil treatment, propagation of plant life, or pest control; or
 - (c) engaging in dispensing activities directly affecting agriculture, horticulture, or forest preservation, but not including the dispensing of live insects;
- “AIP” means Aeronautical Information Publication;
- “airborne collision avoidance system” means an aircraft system based on secondary surveillance radar (SSR) transponder signals which operates independently of ground-based equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with SSR transponders;
- “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 avionics” means a term designating any electronic device, including its electrical part, for use in an aircraft, including radio, automatic flight control and instrument systems;
- “aircraft category” means classification of aircraft according to specified basic characteristics, such as, aeroplane, helicopter, glider, free balloon, airship, powered-lift;
- “aircraft certificated for single-pilot operation” means a type of aircraft which the State of Registry has determined, during the certification process, can be operated safely with a minimum crew of one pilot;

- “aircraft certificated for multi-pilot operation” means a type of aircraft which the State of Registry has determined, during the certification process, can be operated safely with a minimum crew of two pilots;
- “aircraft required to be operated with a co-pilot” means a type of aircraft that is required to be operated with a co-pilot, as specified in the flight manual or by the air operator certificate;
- “aircraft classification number (ACN)” means a number expressing the relative effect of an aircraft on a pavement for a specified standard subgrade category;
- “aircraft classification number rating (ACR)” means a number expressing the relative effect of an aircraft on a pavement for a specified standard subgrade category;
- “aircraft component” means any component part of an aircraft up to and including a complete powerplant or any operational or emergency equipment;
- “aircraft engine” means any engine used, or intended to be used, for propulsion of aircraft and includes all parts, appurtenances, and accessories thereof other than propellers;
- “aircraft flight manual” means a manual, associated with certificate of airworthiness, containing limitation within which the aircraft is to be considered airworthy, and instructions and information necessary to the flight crew members of the safe operation of the aircraft;
- “aircraft operating manual” means a manual, acceptable to the State of the Operator, containing normal, abnormal and emergency procedures, checklists, limitations, performance information, details of the aircraft systems, and other material relevant to the operation of the aircraft;
- “aircraft piracy” means any actual or attempted seizure or exercise of control, by force or violence, or by any other form of intimidation, with wrongful intent, of an aircraft within the jurisdiction of Zimbabwe;
- “aircraft required to be operated with a co-pilot” means a type of aircraft that is required to be operated with a co-pilot as specified in the flight manual or by the air operator certificate;
- “aircraft security check” means an inspection of the interior of an aircraft to which passengers may have had access and an inspection of the hold for the purpose of discovering suspicious objects, weapons, explosives, or other dangerous devices, articles, or substances;
- “aircraft security search” means a thorough inspection of the interior and exterior of an aircraft for the purpose of discovering suspicious objects, weapons, explosives, or other dangerous devices, articles, or substances;
- “aircraft technical log” means documentation for an aircraft that includes the maintenance record for the aircraft and a record for each flight made by the aircraft, and it is comprised of a journey records section and a maintenance section;
- “aircraft tracking” means a ground-based process that maintains and updates, at standardized intervals, a record of the four dimensional position of individual aircraft in flight;
- “aircraft – type of” means all aircraft of the same basic design including all modifications thereto except those modifications which result in a change in handling or flight characteristics;
- “airframe” means the fuselage, booms, nacelles, cowlings, fairings, airfoil surfaces (including rotors but excluding propellers and rotating airfoils of a powerplant), and landing gear of an aircraft and their accessories and controls;
- “air-ground control radio station” means an aeronautical telecommunication station having primary responsibility for handling communications pertaining to the operation and control of aircraft in a given area;
- “Air-ground communication” means two-way communication between aircraft and stations or locations on the surface of the earth.
- “airman” means —
- (a) any individual who engages, as the person in command or as pilot, mechanic, or member of the crew, or who navigates an aircraft while the aircraft is underway;
 - (b) any individual in charge of the inspection, maintenance, overhauling, or repair of aircraft, and any individual in charge of the inspection, maintenance, overhauling, or repair of aircraft, aircraft engines, propellers, or appliances; or
 - (c) any individual who serves in the capacity of flight dispatcher;
- “airmanship” means the consistent use of good judgment and well-developed knowledge, skills and attitudes to accomplish flight objectives;

- “air navigation facility” means any facility used in, available for use in, or designed for use in aid of air navigation, including airports, landing areas, lights, any apparatus or equipment for disseminating weather information, for signalling, for radio directional finding, or for radio or other electromagnetic communication, and any other structure or mechanism having a similar purpose for guiding or controlling flight in the air or the landing and takeoff of aircraft.
- “air operator” means any organisation which undertakes to engage in domestic commercial air transport or international commercial air transport, whether directly or indirectly or by a lease or any other arrangement;
- “Air Operator Certificate (AOC)” means a certificate authorising an operator to carry out specified commercial air transport operations;
- “air operator security programme” means a written national civil aviation security document established and implemented by an ICAO Contracting State to safeguard civil aviation operations against acts of unlawful interference, through regulations, practices, and procedures that take into account the safety, regularity, and efficiency of flights;
- “airport” is as defined under the definition of aerodrome in this section;
- “airship” means a power-driven lighter than air aircraft;
- “air-taxiing” means movement of a helicopter/VTOL above the surface of an aerodrome, normally in ground effect and at a ground speed normally less than 37 km/h (20 kt);
- “airside” means the movement area of an aerodrome and adjacent terrain and buildings, or portions thereof, access to which is controlled;
- “Air Taxi AOC Holder” applies to operators of aircraft with a maximum passenger seating capacity of 19 or less passengers, and such air operators are classified under the following three general groupings, which involve differing requirements based on the complexity of the operation—
- (a) Single Pilot Air Taxi;
 - (b) Basic Air Taxi; and
 - (c) Commuter;
- “air traffic” means all aircraft in flight or operating on the manoeuvring area of an aerodrome;
- “air traffic advisory service” means a service provided within advisory airspace to ensure separation, in so far as practical, between aircraft which are operating on IFR flight plans;
- “air traffic control clearance” means authorisation for an aircraft to proceed under conditions specified by an air traffic control unit;
- “Air Traffic Control (ATC) facility” means a building holding the persons and equipment responsible for providing ATC services (such as airport tower, approach control, centre), and may be referred to as air traffic control unit.
- “air traffic control service” means a service provided for the purpose of—
- (a) preventing collisions—
 - (i) between aircraft; and
 - (ii) on the manoeuvring area between aircraft and obstructions; and
 - (b) expediting and maintaining an orderly flow of air traffic;
- “air traffic control unit” means a generic term meaning variously, area control centre, approach control unit or aerodrome control tower.
- “Air traffic flow management (ATFM)” means a service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that ATC capacity is utilized to the maximum extent possible and that the traffic volume is compatible with the capacities declared by the appropriate ATS authority.
- “air traffic service” means 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);
- “air traffic services airspaces” means airspaces of defined dimensions, alphabetically designated, within which specific types of flights may operate and for which air traffic services and rules of operation are specified;
- “air traffic services reporting office” means a unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure;
- “Air traffic services route” means a specified route designed for channelling the flow of traffic as necessary for the provision of air traffic services;

- “air traffic services unit” means a generic term meaning variously, air traffic control unit, flight information centre or air traffic services reporting office;
- “air traffic controller schedule” means a plan for allocating air traffic controller duty periods and non-duty periods over a period of time, otherwise referred to as a roster.
- “airway” means a control area or portion thereof established in the form of a corridor;
- “airworthiness approval tag” means a tag that may be attached to a part which must include the part number, serial number, and current life status of the part; the airworthiness approval tag has two distinct purposes—
- (a) as a certification of release to service of a part, component or assembly after maintenance, preventive maintenance, overhaul or rebuilding; and
 - (b) For shipping of a newly manufactured part; and each time the part is removed from a type certificated product, a new tag must be created or the existing tag must be updated with the current life status;
- “airworthiness data” means any information necessary to ensure that an aircraft or aircraft component can be maintained in a condition such that airworthiness of the aircraft, or serviceability of operational and emergency equipment, as appropriate, is assured;
- “airworthiness directive” means continuing airworthiness information that applies to the following products: aircraft, aircraft engines, propellers, and appliances, and such directive is mandatory if issued by the State of Design;
- “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;
- “ALERFA” means the code word used to designate an alert phase.
- “alerting service” means a service provided to notify appropriate organisations regarding aircraft in need of search and rescue aid, and assist such organisations as required;
- “alert phase” means a situation wherein apprehension exists as to the safety of an aircraft and its occupants;
- “alternate aerodrome/airport/heliport” means an aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or land at the aerodrome/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, and alternate aerodromes/heliports include the following—
- (a) takeoff alternate which is an alternate aerodrome/heliport at which an aircraft would be able to land should this become necessary shortly after takeoff and it is not possible to use the aerodrome of departure;
 - (b) en-route alternate which is an alternate aerodrome/heliport at which an aircraft would be able to land in the event that a diversion becomes necessary en route;
 - (c) EDTO en-route alternate which is a suitable and appropriate alternate aerodrome at which an aeroplane would be able to land after experiencing an engine shut-down or other abnormal or emergency condition while en-route in an EDTO operation;
 - (d) destination alternate which is an alternate aerodrome/heliport at which an aircraft would be able to land should it become either impossible or inadvisable to land at the aerodrome of intended landing;
- “altimetry system error (ASE)” means the difference between the altitude indicated by the altimeter display, assuming a correct altimeter barometric setting, and the pressure altitude corresponding to the undisturbed ambient pressure;
- “altitude” means the vertical distance of a level, a point or an object considered as a point, measured from mean sea level (MSL);
- “annexes to the Chicago Convention” means the documents issued by the International Civil Aviation Organisation (ICAO) containing the Standards and Recommended Practices applicable to civil aviation (Law);
- “anticipated operating conditions” means those conditions which are known from experience or which can be reasonably envisaged to occur during the operational life of the aircraft taking into account the operations for which the aircraft is made eligible, the conditions so considered being relative to the meteorological state of the atmosphere, to the configuration of terrain, to the functioning of the aircraft, to the efficiency of personnel and to all the factors affecting safety in flight; and anticipated operating conditions shall not include—
- (a) those extremes which can be effectively avoided by means of operating procedures; and
 - (b) those extremes which occur so infrequently that to require the Standards to be met in such extremes would give a higher level of airworthiness than experience has shown to be necessary and practical;

- “anti-collision light” means a flashing red or flashing white light showing in all directions for the purpose of enabling the aircraft to be more readily detected by the pilots of distant aircraft;
- “appliances” means instruments, equipment, apparatus, parts, appurtenances, or accessories, of whatever description, which are used, or are capable of being or intended to be used, in the navigation, operation, or control of aircraft in flight (including parachutes and including communication equipment and any other mechanism or mechanisms installed in or attached to aircraft during flight), and which are not part or parts of aircraft, aircraft engines, or propellers;
- “approach and landing phase – helicopters” means that part of the flight from 300 m (1 000 ft) above the elevation of the FATO, if the flight is planned to exceed this height, or from the commencement of the descent in the other cases, to landing or to the balked landing point;
- “approach control service” means air traffic control service for arriving or departing controlled flights;
- “approach control unit” means a unit established to provide air traffic control service to controlled flights arriving at, or departing from, one or more aerodromes;
- “appropriate ATS or ATC authority” means the relevant authority designated by Zimbabwe responsible for providing air traffic services in the airspace concerned;
- “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;
- “appropriate authority” means—
- (a) regarding flight over the high seas, the relevant authority of the State of Registry;
 - (b) regarding flight other than over the high seas, the relevant authority of the State having sovereignty over the territory being overflown;
 - (c) regarding flight over Zimbabwe: Civil Aviation Authority of Zimbabwe, which, under the law establishing regulations governing civil aviation, is responsible for the oversight of civil aviation in Zimbabwe.
- “approval” in relation to dangerous goods, means an authorisation granted by an appropriate national authority for—
- (a) the transport of dangerous goods forbidden on passenger or cargo aircraft where the Technical Instructions state that such goods may be carried with an approval; or
 - (b) other purposes as provided for in the Technical Instructions;
- “approval for return to service” means maintenance release.
- “approved” means accepted by an ICAO Contracting State as suitable for a particular purpose;
- “approved continuous maintenance program” means a maintenance program approved by the State of Registry;
- “approved data” means technical information approved by the Authority;
- “approved maintenance organisation” means an organisation approved by a Contracting State in accordance with ICAO Annex 8, Part II, Chapter 6, to perform maintenance of aircraft, engine, propeller or parts thereof and operating under supervision approved by that State;
- “approved maintenance organisation” means an organisation approved by the Authority, in accordance with Civil Aviation (AMO) Regulations, to perform maintenance of aircraft or parts thereof and operating under supervision approved by that State;
- “approved standard” means a manufacturing, design, maintenance, or quality standard approved by the Authority;
- “approved training” means training conducted under special curricula and supervision approved by the Authority;
- “approved training organisation (ATO)” means an organisation approved by and operating under the supervision of the Authority and in accordance with Approved training organisation regulations, to perform approved training;.
- “apron” means a defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fuelling, parking or maintenance;
- “apron management service” means a service provided to regulate the activities and the movement of aircraft and vehicles on an apron;
- “area control centre” means a unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction;
- “area control service” means air traffic control service for controlled flights in control areas;
- “area navigation (RNAV)” means a method of navigation that permits aircraft operations on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained

- aids, or a combination of these, and area navigation shall include performance-based navigation as well as other operations that do not meet the definition of performance-based;
- “area navigation route” means an ATS route established for the use of aircraft capable of employing area navigation;
- “arresting system” means a system designed to decelerate an aeroplane overrunning the runway;
- “article” means any item, including but not limited to, an aircraft, airframe, aircraft engine, propeller, appliance, accessory, assembly, subassembly, system, subsystem, component, unit, product, or part;
- “ATS or ATC route” means a specified route designed for channelling the flow of air traffic as necessary for the provision of air traffic services, defined by route specifications that include an ATS or ATC route designator, the track to or from significant points (way points), distance between significant points, reporting requirements, and as determined by the appropriate ATS or ATC authority, the lowest safe altitude;
- “ATS surveillance service” means a term used to indicate a service provided directly by means of an ATS surveillance system”
- “ATS surveillance system” means a generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft;
- “augmented flight crew” means a flight crew that has more than the minimum number of flight crew members required by the aircraft type certificate to operate the aircraft to allow a flight crew member to be replaced by another qualified flight crew member for in-flight rest;
- “authorised instructor” means a person who—
- (a) holds a valid ground instructor certificate issued under Part 7 when conducting ground training;
 - (b) holds a current flight instructor certificate issued under Part 7 when conducting ground training or flight training; or
 - (c) is authorised by the Authority to provide ground training or flight training under any Part of these Regulations;
- “authorised person” means a person designated in terms of section 26(3)(b);
- “Automatic Dependent Surveillance (ADS)” means a surveillance technique in which aircraft automatically provide, via a data link, data derived from on-board navigation and position-fixing systems, including aircraft identification, four-dimensional position, and additional data as appropriate;
- “Automatic Dependent Surveillance (ADS) agreement” means an ADS reporting plan that establishes the conditions of ADS data reporting (that is, data required by the ATS or control unit and frequency of ADS reports that shall be agreed to prior to the provision of the ADS services);
- “Automatic Dependent Surveillance – Broadcast (ADS-B)” refers to a means by which aircraft aerodrome vehicles and other objects can automatically transmit or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link;
- “Automatic Dependent Surveillance - Contract (ADS-C)” refers to means by which the terms of an ADS-C agreement will be exchanged between the ground system and the aircraft, via a data link, specifying under what conditions ADS-C reports would be initiated, and what data would be contained in the reports;
- “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;
- “Automatic deployable flight recorder (ADFR)” means a combination flight recorder installed on the aircraft which is capable of automatically deploying from the aircraft;
- “Automatic fixed ELT (ELT(AF))” means an automatically activated ELT which is permanently attached to an aircraft;
- “Automatic portable ELT (ELT(AP))” means an automatically activated ELT which is rigidly attached to an aircraft but readily removable from the aircraft;
- “autonomous runway incursion warning system (ARIWS)” means a system which provides autonomous detection of a potential incursion or of the occupancy of an active runway and a direct warning to a flight crew or a vehicle operator;
- “aviation personnel” shall include persons whose duties are directly related to ensuring aviation safety and security, aircraft operation, air transport, and air navigation who must possess licences and certificates which are issued or validated by the Authority;

- “axial ratio” means the ratio, expressed in decibels, between the maximum output power and the minimum output power of an antenna to an incident linearly polarised wave as the polarisation orientation is varied over all directions perpendicular to the direction of propagation;
- “basic aircraft” means an aircraft which has the minimum equipment required to perform the intended take-off, approach or landing operation;
- “background check” means a check of a person’s identity and previous experience, including where legally permissible, any criminal history, as part of the assessment of an individual’s suitability to implement a security control or for unescorted access to a security restricted area;
- “balloon” means a non-power-driven lighter-than-air aircraft;
- “balked landing” means a landing manoeuvre that is unexpectedly discontinued at any point below the obstacle clearance altitude/height (OCA/H);
- “banner” means an advertising medium supported by a temporary framework attached externally to the aircraft and towed behind the aircraft;
- “banner towing” means the operation of an aircraft for the purpose of towing or displaying an advertisement in-flight;
- “behaviour detection” means, within an aviation security environment, the application of techniques involving the recognition of behavioural characteristics, including physiological or gestural signs indicative of anomalous behaviour, to identify persons who may pose a threat to civil aviation;
- “base turn” means a turn executed by the aircraft during the initial approach between the end of the outbound track and the beginning of the intermediate or final approach track. The tracks are not reciprocal;
- basic air taxi” means an operator of non-turbojet aircraft having a maximum certificated configuration for nine or less passengers, that has no more than—
- (a) 5 total aircraft, consisting of no more than 3 different types; and
 - (b) 5 total pilots-in-command;
- “basic instrument flight trainer” means flight simulation training device.
- “border security” means the enforcement, by a State, of its laws or regulations concerning the movement of goods or persons across its borders;
- “break” means a period free of all duties, which counts as duty, being less than a rest period;
- “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;
- “calendar” the use of this word as used in these regulations describes a consecutive period of time;
- “calendar day” means the period of elapsed time, using Coordinated Universal Time or local time, that begins at midnight and ends 24 hours later in the next midnight;
- “calendar month” means a period of a month beginning and ending with the dates that are conventionally accepted as marking the beginning and end of a numbered month (as January 1 through January 31 in the Gregorian calendar);
- “calendar year” means a period of a year beginning and ending with the dates that are conventionally accepted as marking the beginning and end of a numbered year (as January 1 through December 31 in the Gregorian calendar);
- “calibration” means a set of operations, performed in accordance with a definite documented procedure that compares the measurement performed by a measurement device or working standard with a recognised bureau of standards for the purpose of detecting and reporting or eliminating adjustment errors in the measurement device, working standard, or aeronautical product tested;
- “cargo” means any property carried on an aircraft other than mail, stores, and accompanied or mishandled baggage;
- “cargo aircraft” means any aircraft carrying goods or property but not passengers, and under this context the following shall not be considered to be passengers—
- (a) a crew member;
 - (b) an operator's employee permitted by, and carried in accordance with, the instructions contained in the Operations Manual;
 - (c) an authorised representative of an Authority;
 - (d) a person with duties in respect of a particular shipment on board;

- “carry-on baggage (cabin baggage)” means baggage that is taken care of by passengers and is brought along with them into the aircraft cabin during the flight;
- “category A” with respect to helicopters, means a multi-engine helicopter designed with engine and system isolation features specified in Part IVB and capable of operations using take-off and landing data scheduled under a critical engine failure concept which assures adequate designated surface area and adequate performance capability for continued safe flight or safe rejected take-off;
- “category B” with respect to helicopters, means a single-engine or multi-engine helicopter which does not meet Category A standards. Category B helicopters have no guaranteed capability to continue safe flight in the event of an engine failure, and a forced landing is assumed;
- “catering stores” means all items, other than catering supplies, associated with passenger in-flight services, that includes newspapers, magazines, headphones, audio and video tapes, pillows and blankets, amenity kits;
- “catering supplies” means food, beverages, other dry stores and associated equipment used on board an aircraft;
- “causes” as relating to an aircraft accident or incident, means actions, omissions, events, conditions, or a combination thereof which led to the accident or incident;
- “ceiling” means the height above the ground or water of the base of the lowest layer of cloud below 6,000 metres (20,000 feet) covering more than half the sky;
- “certification” as related to security, means a formal evaluation and confirmation by or on behalf of the appropriate authority for aviation security that a person possesses the necessary competencies to perform assigned functions to an acceptable level as defined by the appropriate authority;
- “certify as airworthy (to)” means to certify that an aircraft or parts thereof comply with current airworthiness requirements after maintenance has been performed on the aircraft or parts thereof;
- “certifying staff” means those personnel who are authorised by the Approved Maintenance Organisation in accordance with a procedure acceptable to the Authority to certify aircraft or aircraft components for release to service;
- “changeover point” means the point at which an aircraft navigating on an ATC route segment defined by reference to very high frequency omnidirectional radio ranges is expected to transfer its primary navigational references from the facility behind the aircraft to the next facility ahead of the aircraft;
- “check person” means a qualified person who is authorised by the Authority to conduct an evaluation of either an AOC holder’s flight crew (pilots, flight engineers, or flight navigators), cabin crew, or flight dispatcher, and terms that may be used to describe this person, depending upon responsibilities, are check airman, check pilot, pilot examiner, check flight engineer, check cabin crew member, cabin crew examiner, check flight dispatcher and flight dispatcher examiner;
- “check person (aircraft)” means a person who is qualified, and permitted, to conduct an evaluation in an aircraft, in a flight simulation training device for a particular type aeroplane, for a particular AOC holder;
- “check person (simulator)” means a person who is qualified to conduct an evaluation, but only in a flight simulation training device for a particular type aircraft, for a particular AOC holder;
- “chief instructor” means a supervisor of training that has the responsibility for the quality of training for a grouping of curriculums approved for the ATO holder;
- “citizen of Zimbabwe” refers to one of the following—
- (a) an individual who is a citizen of Zimbabwe;
 - (b) a partnership of which each member is a citizen of Zimbabwe; or
 - (c) a corporation or association created or organised and authorised under the laws of Zimbabwe.
- “civil aircraft” means any aircraft other than a military aircraft;
- “clearance limit” means the point to which an aircraft is granted an air traffic control clearance;
- “cockpit crew zone” means the part of the cabin that is exclusively designated for flight crew use;
- “combined vision system (CVS)” means a system to display images from a combination of an enhanced vision system (EVS) and a synthetic vision system (SVS);
- “command and control link (C2)” means the data link between the remotely piloted aircraft and the remote pilot station for the purposes of managing the flight;
- “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 public transport of passengers, cargo or mail for remuneration or hire;
- “commercial air transport” means an aircraft operation involving the public transport of passengers, cargo, or mail for remuneration or hire;
- “common mark” means a mark assigned by the International Civil Aviation Organisation to the common mark registering authority registering aircraft of an international operating agency on other than a national basis;
- “common mark registering authority” means the authority maintaining the non-national register or, where appropriate, the part thereof, in which aircraft of an international operating agency are registered;
- “commuter air taxi” means an operator of non-turbojet aircraft with a maximum passenger seating capacity of 19 or less passengers and—
- (a) a fleet of more than 5 aircraft with a maximum capacity of 9 passengers or less;
 - (b) a fleet of more than 3 different types of aircraft with a maximum capacity of 9 passengers or less; or
 - (c) operating 1 or more aircraft with a maximum passenger capacity of more than 9 passengers;
- “competency” means a combination of skills, knowledge and attitudes required to perform a task to the prescribed standard;
- “competency-based training” means training that is characterised by performance orientation, emphasis on standards of performance and their measurement and the development of training to the specified performance standards;
- “competency-based training and assessment” means training and assessment that are characterised by a performance orientation, emphasis on standards of performance and their measurement, and the development of training to the specified performance standards;
- “competency in civil aviation” means that an individual shall have a technical qualification and management experience acceptable to the Authority for the position served;
- “competent authority” means the Authority and, in relation to any other state, the authority responsible under the law of that state for promoting the safety of civil aviation;
- “competency standard” means a level of performance that is defined as acceptable when assessing whether or not competency has been achieved;
- “complex aeroplane” means an aeroplane that has retractable landing gear, flaps, and a controllable pitch propeller; or in the case of a seaplane, flaps and a controllable pitch propeller;
- “composite” means structural materials made of substances, including, but not limited to, wood, metal, ceramic, plastic, fiber-reinforced materials, graphite, boron, or epoxy, with built-in strengthening agents that may be in the form of filaments, foils, powders, or flakes, of a different material;
- “computer system” means any electronic or automated system capable of receiving, storing, and processing external data, and transmitting and presenting such data in a usable form for the accomplishment of a specific function;
- “conditions” means anything that may qualify a specific environment in which performance will be demonstrated;
- “conference communications” means a communication facilities whereby direct speech conversation may be conducted between three or more locations simultaneously
- “configuration” (as applied to the aeroplane) means a particular combination of the positions of the moveable elements, such as wing flaps and landing gear that affect the aerodynamic characteristics of the aeroplane;
- “configuration deviation list (CDL)” means a list established by the organisation 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;
- “conflict zones” means airspace over areas where armed conflict is occurring or is likely to occur between militarised parties and is also taken to include airspace over areas where such parties are in a heightened state of military alert or tension, which might endanger civil aircraft;
- “congested area” means a city, town or settlement, or open air assembly of people;
- “congested hostile environment” means a hostile environment within a congested area;
- “consignment” means one or more packages of dangerous goods accepted by an operator from one shipper at one time and at one address, receipted for in one lot and moving to one consignee at one destination address;

- “contaminated runway” means a runway is contaminated when a significant portion of the runway surface area (whether in isolated areas or not) within the length and width being used is covered by one or more of the substances listed in the runway surface condition descriptors;
- “continuing airworthiness” means the set of processes by which an aircraft, engine, propeller or part complies with the applicable airworthiness requirements and remains in a condition for safe operation throughout its operating life;
- “continuing airworthiness maintenance programme” means a maintenance programme approved by the State of Registry;
- “continuing airworthiness records” means records that are related to the continuing airworthiness status of an aircraft or aeronautical product;
- “continuous descent final approach (CDFA)” means a technique, consistent with stabilised 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/height at or above the final approach fix altitude/height to a point approximately 15 m (50 ft) above the landing runway threshold or the point where the flare manoeuvre 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/H) or visual flight manoeuvre altitude/height are reached;
- “contributing factors” means actions, omissions, events, conditions, or a combination thereof, which, if eliminated, avoided or absent, would have reduced the probability of the accident or incident occurring, or mitigated the severity of the consequences of the accident or incident. The identification of contributing factors does not imply the assignment of fault or the determination of administrative, civil or criminal liability;
- “Contracting States” means all States that are signatories to the Convention on International Civil Aviation (Chicago Convention);
- “control area” means a controlled airspace extending upwards from a specified limit above the earth;
- “controlled aerodrome” mean an aerodrome at which air traffic control service is provided to aerodrome traffic;
- “controlled airspace” means an airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification;
- “controlled flight” means any flight which is subject to an air traffic control clearance;
- “controlled flight into terrain” occurs when an airworthy aircraft is flown, under the control of a qualified pilot, into terrain (water or obstacles) with inadequate awareness on the part of the pilot of the impending collision;
- “controller-pilot data link communications (CPDLC)” refers to a means of communication between controller and pilot, using data link for ATC communications;
- “control zone” means a controlled airspace extending upwards from the surface of the earth to a specified upper limit;
- “conversion” means the action taken by the Authority in issuing its own licence on the basis of a licence issued by another Contracting State for use on aircraft registered in Zimbabwe;
- “co-pilot” means a licenced pilot serving in any piloting capacity other than as pilot-in-command but excluding a pilot who is on board the aircraft for the sole purpose of receiving flight instruction, and a second in command (SIC) is a co-pilot;
- “corporate aviation operation” means the non-commercial operation or use of aircraft by a company for the carriage of passengers or goods as an aid to the conduct of company business, flown by a professional pilot(s) employed to fly the aircraft;
- “course” means a program of instruction to obtain an airman licence, rating, qualification, authorisation, or currency;
- “courseware” means instructional material developed for each course or curriculum, including lesson plans, flight event descriptions, computer software programs, audio-visual programs, workbooks, and handouts;
- “credit” means recognition of alternative means or prior qualifications;
- “crew member” means a person assigned by an operator to duty on an aircraft during a flight duty period;
- “crew resource management” means a program designed to improve the safety of flight operations by optimizing the safe, efficient, and effective use of human resources, hardware, and information through improved crew communication and co-ordination;

- “critical engine(s)” means any engine whose failure gives the most adverse effect on the aircraft characteristics relative to the case under consideration. On some aircraft there may be more than one equally critical engine and in this case, the expression “the critical engine” means one of those critical engines;
- “critical phases of flight” means those portions of operations involving taxiing, take-off and landing, and all flight operations below 10,000 feet, except cruise flight;
- “cross-country” means a flight between a point of departure and a point of arrival following a pre-planned route using standard navigation procedures;
- “cross-country time” means that time a pilot spends in flight in an aircraft which includes a landing at a point other than the point of departure and, for the purpose of meeting the cross-country time requirements for a private pilot licence (except with a rotorcraft rating), commercial pilot licence, or an instrument rating, includes a landing at an aerodrome which must be a straight-line distance of more than 50 nautical miles from the original point of departure;
- “cruise climb” means an aeroplane cruising technique resulting in a net increase in altitude as the aeroplane mass decreases;
- “cruise relief pilot” means flight crew member who is assigned to perform pilot tasks during cruise flight to allow the PIC or co-pilot to obtain planned rest;
- “cruising level” means a level maintained during a significant portion of a flight;
- “current flight plan” means the flight plan, including changes, if any, brought about by subsequent clearances;
- “curriculum” means a complete training agenda specific to an inspector technical specialty, such as a “baseline” curriculum;
- “curriculum segment” means the largest subdivision of a curriculum, generally the specific courses that will be completed;
- “danger area” means an airspace of defined dimensions within which activities dangerous to the flight of the aircraft may exist at specified times;
- “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 ICAO Technical Instructions or which are classified according to those Instructions;
- “dangerous goods accident” means an occurrence associated with and related to the transport of dangerous goods by air which results in fatal or serious injury to a person or major property damage or environmental damage;
- “dangerous goods incident” means an occurrence, other than a dangerous goods accident, associated with and related to the transport of dangerous goods by air, not necessarily occurring on board an aircraft, which results in injury to a person, property or environmental damage, fire, breakage, spillage, leakage of fluid or radiation or other evidence that the integrity of the packaging has not been maintained. Any occurrence relating to the transport of dangerous goods which seriously jeopardises an aircraft or its occupants is deemed to constitute a dangerous goods incident;
- “dangerous goods transport document” means a document specified by the ICAO Technical Instructions for the Safe Transportation of Dangerous Goods by Air, which is completed by the person who offers dangerous goods for air transport and contains information about those dangerous goods. The document bears a signed declaration indicating that the dangerous goods are fully and accurately described by their proper shipping names and UN numbers (if assigned) and that they are correctly classified, packed, marked, labelled and in a proper condition for transport;
- “data link communications” means a form of communication intended for the exchange of messages via a data link;
- “data link recording system” means a device that records those messages whereby the flight path of the aircraft is authorised, controlled directly or indirectly, and which are relayed over a digital data-link rather than by voice communication;
- “deadhead transportation” means the time spent in transportation on aircraft (at the insistence of the AOC holder) to or from a crew member’s home station;
- “decision altitude (DA) or decision height (DH)” means a specified altitude or height in a 3D instrument approach operation at which a missed approach must be initiated if the required visual reference to continue the approach has not been established. Decision altitude (DA) is referenced to mean sea level and decision height (DH) is referenced to the threshold elevation;

- “Declared capacity” means a measure of the ability of the ATC system or any of its subsystems or operating positions to provide service to aircraft during normal activities. It is expressed as the number of aircraft entering a specified portion of airspace in a given period of time, taking due account of weather, ATC unit configuration, staff and equipment available, and any other factors that may affect the workload of the controller responsible for the airspace;
- “defined point” means—
- (a) defined point after take-off (DPATO). The point, within the take-off and initial climb phase, before which the Performance Class 2 helicopter’s ability to continue the flight safely, with one engine inoperative, is not assured and a forced landing may be required;
 - (b) defined point before landing (DPBL). The point, within the approach and landing phase, after which the Performance Class 2 helicopter’s ability to continue the flight safely, with one engine inoperative, is not assured and a forced landing may be required;
- “derived version of a CO₂-certified aeroplane” means an aeroplane which incorporates a change in the type design that either increases its maximum take-off mass, or that increases its CO₂ emissions evaluation metric value by more than—
- (a) 1.35 per cent at a maximum take-off mass of 5 700 kg, decreasing linearly to;
 - (b) 0.75 per cent at a maximum take-off mass of 60 000 kg, decreasing linearly to;
 - (c) 0.70 per cent at a maximum take-off mass of 600 000 kg; and
 - (d) a constant 0.70 per cent at maximum take-off masses greater than 600 000 kg;
- “derived version of a non- CO₂-certified aeroplane” means an individual aeroplane that conforms to an existing Type Certificate, but which is not certified to Annex 16, Volume III, and to which a change in type design is made prior to the issuance of the aeroplane’s first certificate of airworthiness that increases its CO₂ emissions evaluation metric value by more than 1.5 per cent or is considered to be a significant CO₂ change;
- “design D” means the D of the design helicopter;
- “design landing mass” means the maximum mass of the aircraft at which, for structural design purposes, it is assumed that it will be planned to land; “
- “design take-off mass” means the maximum mass at which the aircraft, for structural design purposes, is assumed to be planned to be at the start of the take-off run;
- “design taxiing mass” means the maximum mass of the aircraft at which structural provision is made for load liable to occur during use of the aircraft on the ground prior to the start of take-off;
- “designated postal operator” means any governmental or non-governmental entity officially designated by a Universal Postal Union (UPU) member country to operate postal services and to fulfil the related obligations arising from the acts of the UPU Convention on its territory;
- “detect and avoid” means the capability to see, sense or detect conflicting traffic or other hazards and take the appropriate action;
- “DETRESFA” means the code word used to designate a distress phase
- “directly in charge” as applied to an Approved Maintenance Organisation in Part 5, means an appropriately licenced person having the responsibility for the work of an approved maintenance organisation that performs maintenance, preventive maintenance, modifications, or other functions affecting aircraft airworthiness. A person directly in charge does not need to physically observe and direct each worker constantly but must be available for consultation on matters requiring Director General instruction or decision from higher authority;
- “discrete source damage” means structural damage of the aeroplane that is likely to result from impact with a bird, uncontained fan blade failure, uncontained engine failure, uncontained high-energy rotating machinery failure or similar causes;
- “disruptive passenger” means a passenger who fails to respect the rules of conduct at an aerodrome or on board an aircraft or to follow the instructions of aerodrome personnel or crew members and thereby disturbs the good order and discipline at the aerodrome or on board the aircraft;
- “distress phase” means a situation where there is a reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger and require immediate assistance;
- “dry lease” means the lease of an aircraft without the crew;

- “dry runway” mean a runway with a surface that is free of visible moisture and not contaminated within the area intended to be used;
- “dual instruction time” means a flight time during which a person is receiving flight instruction from a properly authorised pilot on board the aircraft;
- “duty” means any task that flight or air traffic controller 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” as related to an air operator, means a period which starts when flight or cabin crew personnel are required by an operator to report for or to commence a duty and ends when that person is free from all duties;
- “duty time” means the total time from the moment a person identified in these Regulations begins, immediately after a rest period, any work on behalf of the certificate holder until that person is free from all restraint associated with that work;
- “D-value” means a limiting dimension, in terms of “D”, for a heliport, helideck or shipboard heliport, or for a defined area within;
- “dynamic load-bearing surface” means a surface capable of supporting the loads generated by a helicopter in motion;
- “EDTO critical fuel” means the fuel quantity necessary to fly to an en-route alternate aerodrome considering, at the most critical point on the route, the most limiting system failure;
- “EDTO-significant system” means an aeroplane system whose failure or degradation could adversely affect the safety particular to an EDTO flight, or whose continued functioning is specifically important to the safe flight and landing of an aeroplane during an EDTO diversion”
- “economic poison” means any substance or mixture of substances intended for—
- (a) preventing, destroying, repelling, or mitigating any insects, rodents, nematodes, fungi, weeds, and other forms of plant or animal life or viruses, except viruses on or in living human beings or other animals, which Zimbabwe may declare to be a pest; and
 - (b) use as a plant regulator, defoliant or desiccant;
- “effective length of the runway” means the distance for landing from the point at which the obstruction clearance plane associated with the approach end of the runway intersects the centreline of the runway to the far end;
- “Electronic Flight Bag (EFB)” means an electronic information system for flight crew which allows for storing, updating, delivering, displaying or computing digital data to support flight operations or duties;
- “element” means an integral, subject-oriented (not task-oriented) part of a training, checking, or qualification module;
- “elevated heliport” means a heliport located on a raised structure on land;
- “ELT battery expiration date” means the date of battery manufacture or recharge plus one half of its useful life;
- “ELT battery useful life” means the length of time after its date of manufacture or recharge that the battery or battery pack may be stored under normal environmental conditions without losing its ability to allow the ELT to meet the applicable performance standards;
- “elongated” when used with TLOF or FATO, means an area which has a length more than twice its width;
- “Emergency Locator Transmitter (ELT)” means a generic term describing equipment which broadcast distinctive signals on designated frequencies and, depending on application, may be automatically activated by impact or be manually activated. An ELT may be any of the following—
- (a) automatic fixed ELT: which an automatically activated ELT permanently attached to an aircraft;
 - (b) automatic portable ELT: which is an automatically activated ELT rigidly attached to an aircraft but readily removable from the aircraft;
 - (c) automatically deployable ELT: which is an ELT rigidly attached to an aircraft and which is automatically deployed and activated by impact, and in some cases, also be hydrostatic sensors. Manual deployment is also provided;
- “emergency phase” means a generic term meaning, as the case may be, uncertainty phase, alert phase or distress phase.
- “engine” means a unit used or intended to be used for aircraft propulsion which consists of at least those components and equipment necessary for functioning and control, but excludes the propeller/rotors (if applicable);

- “enhanced ground proximity warning” means a forward looking warning system that uses the terrain data base for terrain avoidance;
- “enhanced vision system” 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;
- “equivalent procedure” means a test or analysis procedure, which, while differing from the one specified in this volume of Annex 16, in the technical judgment of the certificating authority, yields effectively the same CO₂ emissions evaluation metric value as the specified procedure;
- “equivalent system of maintenance”—an AOC holder may conduct maintenance activities through an arrangement with an AMO or may conduct its own maintenance, preventive maintenance, or alterations, so long as the AOC holder's maintenance system is approved by the Authority and is equivalent to that of an AMO, except that the approval for return to service of an aircraft/aeronautical product shall be made by an appropriately licenced aviation maintenance technician or aircraft repair specialists in accordance with Part 7, as appropriate;
- “error” means an action or inaction by an operational person that leads to deviations from organisational or the operational person’s intentions or expectations;
- “error management” means the process of detecting and responding to errors with countermeasures that reduce or eliminate the consequences of errors and mitigate the probability of further errors or undesired states;
- “estimated off-block time” means the estimated time at which the aircraft will commence movement associated with departure;
- “estimated time of arrival” for IFR flights, means the time at which it is estimated that the aircraft will arrive over that designated point, defined by reference to navigation aids, from which it is intended that approach procedure will be commenced, or if no navigation aid is associated with the aerodrome, the time at which the aircraft will arrive over the aerodrome. For VFR flights, the time at which it is estimated that the aircraft will arrive over the aerodrome;
- “Expected Approach Time” means the time at which air traffic control expects that an arriving aircraft, following a delay, will leave the holding fix to complete its approach for a landing;
- “evaluator” means a person employed by a certified Approved Training Organisation who performs tests for licensing, added ratings, authorisations, and proficiency checks that are authorised by the certificate holder's training specification, and who is authorised by the Authority to administer such checks and tests;
- “event” means an integral, task-oriented part of a training, checking, or qualification module that requires the use of a specific procedure or procedures;
- “exercise” means a prepared activity for the trainee to support the objectives of the training;
- “examiner” means any person authorised by the Authority to conduct a pilot proficiency test, a skill or practical test for an airman licence or rating, or a knowledge test under these Regulations;
- “exception” in relation to dangerous goods, means a provision in ICAO Annex 18 which the Authority may exclude a specific item of dangerous goods from the requirements normally applicable to that item;
- “exemption” in relation related to dangerous goods, means an authorisation, other than an approval, issued by an appropriate national authority providing relief from the provisions of ICAO Annex.18.
- “expected approach time” means the time at which ATC expects that an arriving aircraft, following a delay, will leave the holding point to complete its approach for a landing;
- “extended diversion time operations (EDTO)” means any operation by an aeroplane with two or more turbine engines where the diversion time to an en-route alternate aerodrome is greater than the threshold time established by the State of the Operator;
- “extended flight over-water” means —
- (a) with respect to aircraft other than helicopters, a flight over water at a horizontal distance of 93 km (100 nm) or 30 minutes at cruising speed, whichever is greater, away from land suitable for making an emergency landing; and
 - (b) for helicopters, an operation over water at a horizontal distance of more than 50 nm from the nearest shoreline and more than 50 nm from an offshore heliport structure;
- “external load” means a load that is carried, or extends outside of the aircraft fuselage;

- “facility” means a physical plant, including land, buildings, and equipment, which provide the means for the performance of maintenance, preventive maintenance, or alterations of any article;
- “factor of overload” means the ratio between the specific load weight and weight of the aircraft, expressed in terms of the aerodynamic forces, inertia or impact with the ground;
- “factor of safety” means a design factor used to provide for the possibility of loads greater than those assumed, and for uncertainties in design and fabrication;
- “fatal injury” as relates to an aircraft accident, means any injury which results in death within 30 days of the accident.
- “fatigue” means a physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness, circadian phase or workload (mental or physical activity) that can impair a crew member’s alertness and ability to safely operate an aircraft or perform safety related duties;
- “Fatigue Risk Management System (FRMS)” means a 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—
- (a) It is a management system for an operator to use to mitigate the effects of fatigue in its particular operations;
 - (b) It is a data-driven process and a systematic method used to continuously monitor and manage safety risks associated with fatigue-related error;
- “filed flight plan” means the flight plan as filed with an air traffic service unit by the pilot or a designated representative, without any subsequent changes;
- “Final Approach” means that part of an instrument approach procedure which commences at the specified final approach fix or point, or where such a fix or point is not specified—
- (a) at the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified; or
 - (b) at the point of interception of the last track specified in the approach procedure; and ends at a point in the vicinity of an aerodrome from which—
 - (i) a landing can be made; or
 - (ii) a missed approach procedure is initiated;
- “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 Performance Class 1 helicopters, 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;
- “finding” means a conclusion by audit personnel that demonstrates nonconformity with a specific standard;
- “fire resistant” means the capability to withstand the application of heat by a flame for a period of 5 minutes;
- “fireproof material” means material capable of withstanding heat as well as or better than steel when the dimensions in both cases are appropriate for the specific purpose;
- “fish spotting” means the operation of an aircraft for the purpose of locating, tracking, and reporting on the location of fish and fish schools, when those operations are conducted as part of a business enterprise or for compensation or hire;
- “fit for duty” means physiologically and mentally prepared and capable of performing assigned duties at the highest degree of safety;
- “flame resistant” means not susceptible to combustion to the point of propagating a flame, beyond safe limits, after the ignition source is removed;
- “flammable” with respect to a fluid or gas, means susceptible to igniting readily or to exploding;
- “flash resistant” means not susceptible to burning violently when ignited;
- “flight” means the period from take-off to landing;
- “flight” means in the case of—
- (a) an aeroplane or glider, from the moment it first moves for the purpose of taking off until the moment when it next comes to rest after landing;
 - (b) an airship or free balloon, from the moment when it first becomes detached from the surface until the moment when it next becomes attached thereto or comes to rest thereon;

- “flight crew member” means a licenced crew member charged with duties essential to the operation of an aircraft during a flight duty period;
- “flight data analysis” means a process of analysing recorded flight data in order to improve the safety of flight operations;
- “flight dispatcher” means a person designated by the operator to engage in the control and supervision of flight operations, whether licensed or not, suitably qualified in accordance with Part 7 and 14, who supports, briefs, or assists the pilot-in-command in the safe conduct of the flight;
- “flight duty period” means a period which commences when a 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 and there is no intention for further aircraft movement by the same crew member, and a flight duty period includes the duties performed by the crew member on behalf of the operator that occur before a flight segment or between flight segments without a required intervening rest period, examples of tasks that are part of the flight duty period include deadhead transportation, training conducted in an aircraft or flight simulator, and airport/standby reserve, if the above tasks occur before a flight segment or between flight segments without an intervening required rest period;
- “flight information centre” means a unit established to provide flight information service and alerting service;
- “flight information region” means an airspace of defined dimensions within which flight information service and alerting service are provided;
- “flight information service” means a service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights;
- “flight level” means a surface of constant atmospheric pressure which is related to a specific pressure datum, 1,013.2 hectopascals (hPa), and is separated from other surfaces by specific pressure intervals;
- “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 plan” means specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft. The term “flight plan” is used to mean variously, full information on all items comprised in the flight plan description, covering the whole route of a flight, or limited information required when the purpose is to obtain a clearance for a minor portion of a flight such as to cross an airway, to take off from, or to land at a controlled aerodrome;
- “flight recorder” means any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation. (See definition “Automatic Deployable Flight Recorder.”)
- “flight safety document system” means a set of inter-related documentation established by the operator, compiling and organising information necessary for flight and ground operations, and comprising, as a minimum, the operations manual and the operator’s maintenance control manual;
- “flight status” means an indication of whether a given aircraft requires special handling by air traffic services units or not;
- “flight simulation training device (FSTD)” means any one of the following three types of apparatus in which flight conditions are simulated on the ground—
- (a) a flight simulator, which provides an accurate representation of the flight deck of a particular aircraft type or an accurate representation of the remotely piloted aircraft system (RPAS) 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;
 - (b) a flight procedures trainer, which provides a realistic flight deck environment or realistic RPAS 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;
 - (c) a basic instrument flight trainer, which is equipped with appropriate instruments, and which simulates the flight deck environment of an aircraft in flight or the RPAS environment in instrument flight conditions;

- “flight time” means the period of time that the aircraft moves under its own power for the purpose of flight and ends when the aircraft comes to rest after it is parked, with engine(s) shut down if applicable;
- “flight time–aeroplanes” means the total time from the moment an aeroplane first moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight;
- “flight time–gliders” means the total time occupied in flight, whether being towed or not, from the moment the glider first moves for the purpose of taking off until the moment it comes to rest at the end of the flight;
- “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;
- “flight time – instrument” means instrument flight time;
- “flight time – remotely piloted aircraft (RPA) systems” means the total time from the moment a C2 link is established between the RPS and the RPA for the purpose of taking off or from the moment the remote pilot receives control following a handover until the moment the remote pilot completes a handover or the C2 link between the RPS and the RPA is terminated at the end of the flight;
- “flight time – solo” means flight time during which a student pilot is the sole occupant of an aircraft, or that flight time during which the student acts as a PIC of a gas balloon or an airship requiring more than one flight crew member;
- “flight training” means training, other than ground training, received from an authorised instructor in flight in an aircraft;
- “flight visibility” means the visibility forward from the cockpit of an aircraft in flight;
- “foreign air operator” means any operator, not being a Zimbabwe air operator, which undertakes, whether directly or indirectly or by lease or any other arrangement, to engage in commercial air transport operations within borders or airspace of Zimbabwe, whether on a scheduled or charter basis;
- “foreign authority” means the civil aviation authority that issues and oversees the Air Operator Certificate of the foreign operator;
- “Foreign Object Debris (FOD)” means an inanimate object within the movement area which has no operational or aeronautical function and which has the potential to be a hazard to aircraft operations;
- “freight container” means unit load device;
- “freight container in the case of radioactive material transport” means an article of transport equipment designed to facilitate the transport of packaged goods, by one or more modes of transport without intermediate reloading, and the freight container must be of a permanent enclosed character, rigid and strong enough for repeated use, and must be fitted with devices facilitating its handling, particularly in transfer between aircraft and from one mode of transport to another. A small freight container is that which has either an overall outer dimension less than 1.5 m, or an internal volume of not more than 3m³. Any other freight container is considered to be a large freight container;
- “general aviation operation” means an aircraft operation of a civil aircraft for other than a commercial air transport operation or aerial work operation;
- “ground handling” means services necessary for an aircraft’s arrival at, and departure from, an airport, other than for air traffic services;
- “glider” means a non-power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces, which remain, fixed under given conditions of flight;
- “glider towing” means the operation of an aircraft for the purpose of towing gliders to a launching altitude or to another landing location;
- “goods” means personal belongings, baggage, cargo, mail, article, thing or conveyance that may be taken or placed on board an aircraft or taken into a restricted area;
- “ground handling” means services necessary for an aircraft’s arrival at, and departure from, an airport, other than air traffic services;
- “ground proximity warning system (GPWS)” means a warning system that uses radar altimeters to alert the pilots of hazardous flight conditions;
- “ground visibility” means the visibility at an aerodrome, as reported by an accredited observer or by automatic systems;

- “gyroplane” means a heavier-than-air aircraft supported in flight by the reactions of the air on one or more rotors which rotate freely on substantially vertical axes;
- “handling agent” means an agency which performs on behalf of the operator some or all of the latter's functions including receiving, loading, unloading, transferring or other processing of passengers or cargo;
- “handover” means the act of passing piloting control from one remote pilot station to another;
- “heading” means the direction in which the longitudinal axis of an aircraft is pointed, usually expressed in degrees from North (true, magnetic, compass or grid);
- “Head-Up Display (HUD)” means a display system that presents flight information into the pilot’s forward external field of view;
- “heavier-than-air aircraft” means any aircraft deriving its lift in flight chiefly from aerodynamic forces;
- “height” means the vertical distance of a level, a point or an object considered a point, measured from a specified datum;
- “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 axis;
- “helicopter stand” means a defined area intended to accommodate a helicopter for purposes of—
- (a) loading or unloading passengers, mail or cargo;
 - (b) fuelling, parking or maintenance; and
 - (c) where air taxiing operations are contemplated, the TLOF;
- “helicopter ground taxiway” means a defined path on a heliport intended for the ground movement of helicopters and that may be combined with an air taxi-route to permit both ground and air taxiing;
- “helicopter taxi-route” means a defined path established for the movement of helicopters from one part of a heliport to another—
- (a) an air taxi-route. A marked taxi-route intended for air taxiing;
 - (b) a ground taxi-route. A taxi-route centred on a taxiway;
- “helideck” means a heliport located on a floating or fixed offshore structure;
- “heliport” means an aerodrome or defined area on a structure intended to be used wholly or in part for the arrival, departure, and surface movement of helicopters;
- “Heliport Reference Point (HRP)” means the designated location of a heliport;
- “high-risk cargo or mail” means cargo or mail presented by an unknown entity or showing signs of tampering and shall be considered high risk if, in addition, it meets one of the following criteria—
- (a) specific intelligence indicates that the cargo or mail poses a threat to civil aviation;
 - (b) the cargo or mail shows anomalies that give rise to suspicion; or
 - (c) the nature of the cargo or mail is such that baseline security measures alone are unlikely to detect prohibited items that could endanger the aircraft;
- “heliport reference point (HRP)” means the designated location of a heliport or a landing location;
- “high speed aural warning” means a speed warning that is required for turbine-engined aeroplanes and aeroplanes with a VMO/MMO greater than 0.80 VDF/MDF or VD/MD;
- “holdover time” means the estimated time de-icing/anti-icing fluid will prevent the formation of frost or ice and the accumulation of snow on the protected surfaces of an aircraft. Holdover time begins when the final application of de-icing or anti-icing fluid commences and expires when the de-icing or anti-icing fluid applied to the aircraft loses its effectiveness;
- “home base” means the place nominated by the operator to the crew member from where the crew member normally starts and ends a duty periods and at which place, under normal conditions, the operator is not responsible for the accommodation of the crew member concerned;
- “hostile environment” means an environment in which—
- (a) a safe forced landing cannot be accomplished because surface and surrounding environment are inadequate; or
 - (b) the helicopter occupants cannot be adequately protected from the elements; or
 - (c) search and rescue response/capability is not consistent with anticipated exposure; or
 - (d) there is an unacceptable risk of endangering persons or property on the ground;

- “housing” as it is related to Approved Maintenance Organisations in Part 5 means buildings, hangers, and other structures to accommodate the necessary equipment and materials of a maintenance organisation that—
- (a) provide working space for the performance of maintenance, preventive maintenance, or alterations for which the maintenance organisation is approved and rated; and
 - (b) provide structures for the proper protection of aircraft, airframes, aircraft engines, propellers, appliances, components, parts, and subassemblies thereof during disassembly, cleaning, inspection, repair, alteration, assembly, and testing; and
 - (c) provide for the proper storage, segregation, and protection of materials, parts, and supplies;
- “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 and efficiency of aeronautical operations;
- “ICAO” means International Civil Aviation Organisation;
- “ICAO competency framework” means a competency framework, developed by ICAO, which is a selected group of competencies for a given aviation discipline. Each competency has an associated description and observable behaviours;
- “IFR” means the symbol used to designate the instrument flight rules;
- “IFR flight” means a flight conducted in accordance with the instrument flight rules;
- “Instrument flight procedure design service” means a service established for the design, documentation, validation, maintenance and periodic review of instrument flight procedures necessary for the safety, regularity and efficiency of air navigation.
- “IMC” means the symbol used to designate instrument meteorological conditions; “INCERFA” means the code word used to designate an uncertainty phase;
- “incident” means an occurrence other than an accident, associated with the operation of an aircraft, part which affects or could affect the safety of operations;
- “incompatible” describing dangerous goods, which if mixed, would be liable to cause a dangerous evolution of heat or gas or produce a corrosive substance;
- “industry codes of practice” means guidance material developed by an industry body, for a particular sector of the aviation industry to comply with the requirements of the International Civil Aviation Organisation’s Standards and Recommended Practices, other aviation safety requirements and the best practices deemed appropriate;
- “in-flight security officer” means a person who is authorised by the government of the State of the Operator and the government of the State of Registration to be deployed on an aircraft with the purpose of protecting that aircraft and its occupants against acts of unlawful interference. This excludes persons employed to provide exclusive personal protection for one or more specific people travelling on the aircraft, such as personal bodyguards;
- “inspection” means the examination of an aircraft or aeronautical product to establish conformity with a standard approved by the Authority;
- “instructional event” means a small sequence of training which moves the trainee towards the accomplishment of a particular intermediate objective. The following standardized words will be used in the instructional events—
- (a) Example: Indicate that the instructor will have prepared examples relating to the subject or use examples that are already included in the course materials;
 - (b) Demonstrate: Indicates that the instructor will visibly do (or direct) a task that the trainees can follow on the screen;
 - (c) Discuss: Indicate that the instructor will engage the trainees to participate in a discussion;
 - (d) Display: Indicate that a slide (or manual page) will be projected for the trainees and will be readable from every trainee’s seat. (Display is synonymous with Project.);
 - (e) Locate: Indicate that the instructor or trainee will actually use the Inspector Toolkit to “locate” the appropriate document reference for review;
 - (f) Provide: Indicates that the instructor will pass out Instructional materials for review including exercises, scenarios or examinations;

- (g) Review: Indicate that a portion of text will be read aloud;
- (h) Trainee: Indicates that the trainee will perform some task;
- “instructional objective” means a statement of the expected result of training that includes the conditions and standard or level of performance;
- “intermediate objective” means an objective that defines what the trainee is expected to accomplish in terms of knowledge, skills and attitudes at a specified point in a module;
- “post-training objective” means a performance objective to be accomplished after the trainee has returned to the job. (It completes the transition between formal training and organised on-the-job practice.);
- “end-of-module objective” means a training objective prescribing what the trainee should be able to accomplish upon completing a module in a course;
- “instructor-dependent training” means training whereby the responsibility for determining the content of the course, the training material and the mode of delivery depends entirely on choices made by the Instructor. It is repeatable only with the same Instructor;
- “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—
 - (a) a two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and
 - (b) a three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance;
- “Instrument Approach Procedure” 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 and shall include—
 - (a) non-precision approach (NPA) procedure. Which is an instrument approach procedure designed for 2D instrument approach operations Type A;
 - (b) Approach procedure with vertical guidance (APV) which is a performance-based navigation (PBN) instrument approach procedure designed for 3D instrument approach operations Type A;
 - (c) Precision approach (PA) procedure which is an instrument approach procedure based on navigation systems (ILS, MLS, GLS and SBAS Cat I) designed for 3D instrument approach operations Type A or B;
- “instrument flight time” means time during which a pilot is piloting an aircraft, or a remote pilot is piloting a remotely piloted aircraft, solely by reference to instruments and without external reference points;
- “instrument ground time” means the time during which a pilot is practising, on the ground, simulated instrument flight in a flight simulation training device approved by the Licencing Authority;
- “Instrument Meteorological Conditions” means meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions;
- “instrument time” means the time in which cockpit instruments are used as the sole means for navigation and control, which may be instrument flight time or instrument ground time;
- “instrument training” means training which is received from an authorised instructor under actual or simulated instrument meteorological conditions;
- “integrated survival suit” means a survival suit which meets the combined requirements of the survival suit and life jacket;
- “interchange agreement” means a leasing agreement which permits an air carrier to dry lease and take or relinquish operational control of an aircraft at an airport;
- “international commercial air transport” means the carriage by aircraft of persons or property for remuneration or hire or the carriage of mail between any two or more countries;
- “international operating agency” means an agency of the kind contemplated in Article 77 of the Convention on International Civil Aviation;
- “investigation” in relation to an aircraft accident or incident, means a process conducted for the purpose of accident prevention which includes the gathering and analysis of information, the drawing of conclusions, including the determination of causes and, when appropriate, the making of safety recommendations;
- “investigator-in-charge” in relation to an aircraft accident or incident, a person charged, on the basis of his or her qualifications, with the responsibility for the organisation, conduct and control of an investigation;

- “isolated aerodrome” means a destination aerodrome for which there is no destination alternate aerodrome suitable for a given aeroplane type;
- “job aid” means any means made available on the job expressly designed to facilitate correct performance of the task by extending an employee's capacity to retain and utilise information;
- “job function” means a series of steps and sub-tasks that result in completion of a primary job task, such as a ramp inspection;
- “journey log” means a form signed by the pilot in command of each flight that records the aeroplane's registration, crew member names and duty assignments, the type of flight, and the date, place, and time of arrival and departure;
- “known consignor” means a consignor who originates cargo or mail for its own account and whose procedures meet common security rules and standards sufficient to allow the carriage of cargo or mail on any aircraft;
- “knowledge test” means a test on the aeronautical knowledge areas required for an airman licence or rating that can be administered in written form or by a computer;
- “landing area” means that part of a movement area intended for the landing or takeoff of an aircraft;
- “landing distance available (LDA)” means the length of runway which is declared available and suitable for the ground run of an aeroplane landing;
- “landing decision point (LDP)” means the point used in determining landing performance from which, a power- unit failure occurring at this point, the landing may be safely continued or a balked landing initiated. LDP applies to performance Class 1 helicopters;
- “landing location” means a marked or unmarked area that has the same physical characteristics as a visual heliport final approach and take-off area (FATO);
- “landing surface” means that part of the surface of an aerodrome which the aerodrome authority has declared available for the normal ground or water run of aircraft landing in a particular direction;
- “large aeroplane” means an aeroplane having a maximum certified take-off mass of over 5,700 kg (12,500 lbs);
- Large helicopter. A helicopter with a maximum certificated take-off mass of over 2730 kg.
- “licensing authority” means the authority designated by a Contracting State as responsible for the licensing of personnel, with the following responsibilities—
- (a) assessment of an applicant's qualifications to hold a licence or rating;
 - (b) issuance and endorsement of licences and ratings;
 - (c) designation and authorisation of approved persons;
 - (d) approval of training courses;
 - (e) approval of the use of flight simulation training devices and authorisation for their use in gaining the experience or in demonstrating the skill required for the issue of a licence or rating; and
 - (f) validation of licences issued by other Contracting States;
- “level” means a generic term relating to the vertical position of an aircraft in flight and meaning variously, height, altitude or flight level;
- “life-limited part” means any part for which a mandatory replacement limit is specified in the type design, the Instructions for Continued Airworthiness, or the maintenance manual;
- “lighter-than-air aircraft” means any aircraft supported chiefly by its buoyancy in the air;
- “likely” in the context of the medical provisions these regulations, means with a probability of occurring that is unacceptable to the medical assessor;
- “limit loads” means the maximum loads assumed to occur in the anticipated operating conditions;
- “line check” means a check given to a pilot by a check pilot to evaluate the pilot's operational competency during line operating flight time, in an aircraft type he or she is qualified to fly, over a route and area in which the AOC holder is authorised to operate;
- “lineholder” means a crew member who has an assigned flight duty period and is not acting as a reserve crew member;
- “line maintenance” means any unscheduled maintenance resulting from unforeseen events, or scheduled checks that contain servicing or inspections that do not require specialised training, equipment or facilities;
- “line operating flight time” means flight time recorded by the PIC or Co-Pilot while in revenue service for an AOC holder;

- “load factor” means the ratio of a specified load to the weight of the aircraft, the former being expressed in terms of aerodynamic forces, inertia forces, or ground reactions;
- “long-call reserve” means a notification by the operator, prior to beginning of a required rest period, that the crew member is to report for a flight duty period following the completion of the rest period;
- “long range overwater flights: means routes on which an aeroplane may be over water and at more than a distance corresponding to 120 minutes at cruising speed or 740 nm (400 NM), whichever is the lesser, away from land suitable for making an emergency landing;
- “low altitude wind shear warning and guidance system” means a system that will issue a warning of low altitude wind shear and in some cases provide the pilot with guidance information of the escaper manoeuvre;
- “low-visibility operations (LVO)” means approach operations in RVRs less than 550 m or with a DH less than 60 m (200 ft) or take-off operations in RVRs less than 400 m;
- “Mach number indicator” means an indicator that shows airspeed as a function of the Mach number;
- “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 organisation’s procedures manual” means a document endorsed by the head of the maintenance organisation which details the maintenance organisation’s structure and management responsibilities, scope of work, description of facilities, maintenance procedures and quality assurance or inspection systems;
- “maintenance program” means a document which describes the specific scheduled maintenance tasks and their frequency of completion and related procedures, such as a reliability program, necessary for the safe operation of those aircraft to which it applies;
- “maintenance records” means records that set out the details of the maintenance carried out on an aircraft, engine, propeller or associated part;
- “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;
- “major modification” means modification not listed in the aircraft, aircraft engine, or propeller specifications that—
- (a) might appreciably affect weight, balance, structural strength, performance, powerplant, operations, flight characteristics, or other qualities affecting airworthiness; or
 - (b) cannot be done by elementary operations;
- “major repair” means a repair that—
- (a) if improperly done might appreciably affect weight, balance, structural strength, performance, powerplant, operations, flight characteristics, or other qualities affecting airworthiness; or
 - (b) is not done according to accepted practices or cannot be done by elementary operations;
- “manoeuvring area” means that part of an aerodrome to be used for the takeoff, landing and taxiing of aircraft, excluding aprons;
- “Master Minimum Equipment List (MMEL)” means a list established for a particular aircraft type by the organisation 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, and the MMEL—
- (a) may be associated with special operating conditions, limitations or procedures;
 - (b) provides the basis for development, review, and approval by the Authority of an individual operator's MEL;
- “materially altered aircraft” means aircraft having powerplants installed other than those for which it is certified or alterations to the aircraft;
- “maximum diversion time” means maximum allowable range, expressed in time, from a point on a route to an en-route alternate aerodrome;
- “maximum mass” means maximum certificated take-off-mass;
- “maximum passenger seating capacity” means the maximum certificated number of passengers for the aeroplane type design;
- “maximum take-off mass” means the highest of all take-off masses for the type design;
- “medical assessment” means the evidence issued a by Contracting State that the licence holder meets specific requirements of medical fitness;

- “medical assessor” means a physician, appointed by the Licensing Authority, qualified and experienced in the practice of aviation medicine and competent in evaluation and assessing medical conditions of flight safety significance;
- “medical examiner” means a physician with training in aviation medicine and practical knowledge and experience of the aviation environment, who is designated by the Authority to conduct medical examinations of fitness of applicants for licences or ratings for which medical requirements are prescribed;
- “medical certificate” means the evidence issued by the Authority that the licence holder meets specific requirements of medical fitness, which is issued following an evaluation by the Licensing Authority of the report submitted by the designated medical examiner who conducted the examination of the applicant for the licence;
- “meteorological information” means meteorological report, analysis, forecast, and any other statement relating to existing or expected meteorological conditions;
- “Meteorological office” means an office designated to provide meteorological service for international air navigation;
- “minimum descent altitude (MDA) or minimum descent height (MDH)” means a specified altitude or height in a 2D 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 approved by the Authority 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 Master Minimum Equipment List established for the aircraft type;
- “minimum sector altitude (MSA)” means the lowest altitude which may be used which will provide a minimum clearance of 300 m (1 000 ft) above all objects located in an area contained within a sector of a circle of 46 km (25 NM) radius centred on a significant point, the aerodrome reference point (ARP), or the heliport reference point (HRP);
- “minor modification” means a modification other than a major modification;
- “modification” means a change to the type design of an aircraft, engine or propeller;
- “monitoring” means a cognitive process to compare an actual to an expected state;
- “movement area” means that part of an aerodrome to be used for take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s);
- “movie” includes film, videos, and live broadcast in any format, and the preparation and rehearsal for those operations;
- “navigable airspace” means the airspace above the minimum altitudes of flight prescribed in these Regulations and includes airspace needed to insure safety in the take-off and landing of aircraft;
- “navigation of aircraft” means a function which includes the piloting 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—
- (a) RNP specification, which is a navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP, e.g. RNP 4, RNP APCH; and
 - (b) RNAV specification, which is 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;
- “national search and rescue coordination committee” means a committee established in terms of Part Aeronautical Search and Rescue;
- “NDB” means Non Directional Radio Beacon;
- “Near-parallel runways” means Non-intersecting runways whose extended centre lines have an angle of convergence/divergence of 15 degrees or less;
- “Night” means the time between fifteen minutes after sunset and fifteen minutes before sunrise, sunset and sunrise being determined at surface level and includes any time between sunset and sunrise when unlighted aircraft or other prominent unlighted object cannot clearly be seen at a distance of 4,572 m;
- “night” means the hours between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise. 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-duty period” means a continuous and defined period of time, subsequent to or prior to duty periods, during which the air traffic controller is free of all duties.
- “non-hostile environment” means an environment in which—
- (a) safe forced landing can be accomplished because the surface and surrounding environment are adequate;
 - (b) the helicopter occupants can be adequately protected from the elements;
 - (c) search and rescue response/capability is provided consistent with anticipated exposure; and
 - (d) the assessed risk of endangering persons or property on the ground is acceptable;
- “non-volatile particulate matter (nvPM)” means emitted particles that exist at a gas turbine engine exhaust nozzle exit plane that do not volatilise when heated to a temperature of 350°C;
- “notification time” means the period of time that an operator allows between the time a crew member on standby receives a call requiring a report for duty and the actual time required to report for that duty;
- “non-precision approach (NPA) procedure” means an instrument approach procedure designed for 2D instrument approach operations Type A;
- “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. Obstacle clearance altitude is referenced to mean sea level and obstacle clearance height is referenced to the threshold elevation or in the case of non-precision approaches to the aerodrome elevation or the threshold elevation if that is more than 2 m (7 ft) below the aerodrome elevation. An obstacle clearance height for a circling approach is referenced to the aerodrome elevation. For convenience when both expressions are used they may be written in the form “obstacle clearance altitude/height” and abbreviated “OCA/H”;
- “occurrence” in relation to an aircraft, means any incident which endangers or which, if not corrected, would endanger an aircraft, its occupants or any other person; or resulted in an accident;
- “oceanic area” for the purpose of aircraft tracking, is the airspace which overlies waters outside the territory of a State;
- “offshore operations” means operations which routinely have a substantial proportion of the flight conducted over sea areas to or from offshore locations, and such operations include, but are not limited to, support of offshore oil, gas and mineral exploitation and sea-pilot transfer;
- “operating base” means the location from which operational control is exercised;
- “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 regularity and efficiency of the flight;
- “operational flight plan” means the operator's plan for the safe conduct of the flight based on considerations of aircraft performance, other operating limitations, and relevant expected conditions on the route to be followed and at the aerodromes or heliports concerned;
- “operational personnel” means personnel involved in aviation activities who are in a position to report safety information;
- “operations in performance Class 1” means operations with performance such that, in the event of a critical power-unit failure, performance is available to enable the helicopter to safely continue the flight to an appropriate landing area, unless the failure occurs prior to reaching the take-off decision point (TDP) or after passing the landing decision point (LDP), in which cases the helicopter must be able to land within the rejected take-off or landing area;
- “operations in performance Class 2” means operations with performance such that, in the event of critical power-unit failure, performance is available to enable the helicopter to safely continue the flight to an appropriate landing area, except when the failure occurs early during the take-off manoeuvre or late in the landing manoeuvre, in which cases a forced landing may be required;

- “operations in performance Class 3” means operations with performance such that, in the event of a power-unit failure at any time during the flight, a forced landing will be required;
- “operations manual” means a manual containing procedures, instructions and guidance for use by operational personnel in the execution of their duties;
- “operations specifications” means the authorisations including specific approvals, conditions and limitations associated with the air operator certificate and subject to the conditions in the operations manual;
- “operator” means a person, organisation or enterprise engaged in or offering to engage in an aircraft operation, including any person who causes or authorises the operation of an aircraft, such as the owner, lessee, or bailee of an aircraft, or the pilot-in-command and in the case of a remotely piloted aircraft, air operations includes the RPAS;
- “Operator’s Maintenance Control Manual” means a document that describes the operator’s procedures necessary to ensure that all scheduled and unscheduled maintenance is Part 1 performed on the operator’s aircraft on time and in a controlled and satisfactory manner;
- “optimum conditions” means the combinations of altitude and airspeed within the approved operating envelope defined in the aeroplane flight manual that provides the highest specific air range value at each reference aeroplane mass;
- “organisation responsible for the type design” means the organisation that holds the type certificate, or equivalent document, for an aircraft, engine or propeller type, issued by a Contracting State;
- “ornithopter” means a heavier-than-air aircraft supported in flight chiefly by the reactions of the air on planes to which a flapping motion is imparted;
- “orphan aircraft type” means an aircraft which has its Type Certificate revoked by the State of Design, and no longer has a designated State of Design in accordance with Annex 8 and such aircraft do not meet the Standards of Annex 8;
- “overhaul” means the restoration of an aircraft/aeronautical product using methods, techniques, and practices acceptable to the Authority, including disassembly, cleaning, and inspection as permitted, repair as necessary, and reassembly; and tested in accordance with approved standards and technical data, or in accordance with current standards and technical data acceptable to the Authority, which have been developed and documented by the State of Design, holder of the type certificate, supplemental type certificate, or a material, part, process, or appliance approval under Parts Manufacturing Authorisation (PMA) or Technical Standard Order (TSO);
- “overpack” means an enclosure used by a single shipper to contain one or more packages and to form one handling unit for convenience of handling and stowage;
- “overtaking aircraft” means an aircraft that approaches another from the rear on a line forming an angle of less than 70 degrees with the plane of symmetry of the latter, so that it is in such a position with reference to the other aircraft that at night it should be unable to see either of the aircraft left (port) or right (starboard) navigation lights;
- “package” means the complete product of the packing operation consisting of the packaging and its contents prepared for transport;
- “packaging” means receptacles and any other components or materials necessary for the receptacle to perform its containment;
- “parascending parachute” means a parachute which is towed by cable in such a manner as to cause it to ascend;
- “passenger aircraft” means an aircraft that carries any person other than a crew member, an operator’s employee in an official capacity, an authorised representative of an appropriate national authority or a person accompanying a consignment or other cargo;
- “passenger exit seats” means those seats having direct access to an exit, and those seats in a row of seats through which passengers would have to pass to gain access to an exit, from the first seat inboard of the exit to the first aisle inboard of the exit. A passenger seat having "direct access" means a seat from which a passenger can proceed directly to the exit without entering an aisle or passing around an obstruction;
- “pavement classification number (PCN)” means a number expressing the bearing strength of a pavement for unrestricted operations;
- “pavement classification number rating (PCR)” means a number expressing the bearing strength of a pavement for unrestricted operations;

- “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;
- “performance Class 1 helicopter” See Operations in Performance Class 1.
- “performance Class 2 helicopter” See Operations in Performance Class 2.
- “performance Class 3 helicopter” See Operations in Performance Class 3.
- “performance criteria” means a simple, evaluative statement on the required outcome of the competency element and a description of the criteria used to judge if the required level of performance has been achieved;
- “performance model” means an analytical tool or method validated from corrected flight test data that can be used to determine the SAR values for calculating the CO₂ emissions evaluation metric value at the reference conditions;
- “performance standard” means a standard that clearly distinguishes between correct or acceptable performance and incorrect or unacceptable performance, and may be classified as follows—
- (a) process standard, which is a performance standard expressed in terms of the process through which the task should be performed. (It provides the means to evaluate performance even if there is no output.);
 - (b) product standard, which is a performance standard expressed in terms of the result or the product of that performance;
- “person” means any individual, firm, partnership, corporation, company, association, joint-stock association, or body politic, and includes any trustee, receiver, assignee, or other similar representative of these entities;
- “physiological night's rest” means 10 hours of rest that encompasses the hours of 0100 and 0700 at the flight crew member's home base, unless the individual has acclimated to a different theatre;, and if the flight crew member has acclimated to a different theater, the rest must encompass the hours of 0100 and 0700 at the acclimated location;
- “pilot flying (PF)” means the pilot whose primary task is to control and manage the flight path. The secondary tasks of the PF are to perform non-flight path related actions (radio communications, aircraft systems, other operational activities, etc.) and to monitor other crewmembers;
- “pilot monitoring (PM)” means the pilot whose primary task is to monitor the flight path and its management by the PF. The secondary tasks of the PM are to perform non-flight path related actions (radio communications, aircraft systems, other operational activities, etc.) and to monitor other crewmembers;
- “pilot in command” means the pilot responsible for the operation and safety of the aircraft during flight time, including 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 the flight;
- “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
- “pilot-in-command under supervision” means co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command, in accordance with a method of supervision acceptable to the Authority;
- “pilot time” means that time a person—
- (a) serves as a required pilot;
 - (b) receives training from an authorised instructor in an aircraft, or an approved flight simulation training device;
- or
- (c) gives training as an authorised instructor in an aircraft, or an approved flight simulation training device;
- “pilot (to)” means to manipulate the flight controls of an aircraft during flight time;
- “point of no return” means the last possible geographic point at which an aeroplane can proceed to the destination aerodrome as well as to an available en-route alternate aerodrome for a given flight;
- “powered-lift” means a heavier-than-air aircraft capable of vertical takeoff, vertical landing, and low speed flight that depends principally on engine-driven lift devices or engine thrust for lift during these flight regimes and on non-rotating airfoil(s) for lift during horizontal flight;

- “powerplant” means the system consisting of all the engines, drive system components (if applicable), and propellers (if installed), their accessories, ancillary parts, and fuel and oil systems installed on an aircraft but excluding the rotors for a helicopter;
- “practical test” means skill test;
- “precision approach (PA) procedure” means an IAP based on navigation systems (ILS, MLS, GLS, and SBAS CAT I) designed for 3D instrument approach operations Type A or B;
- “pre-flight inspection” means the inspection carried out before flight to insure that the aircraft is fit for the intended flight;
- “preliminary report” means the communication used for the prompt dissemination of data obtained during the early stages of the investigation;
- “pressure altitude” means an atmospheric pressure expressed in terms of altitude which corresponds to that pressure in the Standard Atmosphere (as defined in ICAO Annex 8);
- “primary standard” means a standard defined and maintained by a State Authority and used to calibrate secondary standards;
- “pressurised aircraft” in relation to airman-licensing purposes, means an aircraft that has a service ceiling or maximum operating altitude, whichever is lower, above 25,000 feet MSL;
- “preventive maintenance” means simple or minor preservation operations and the replacement of small standard parts not involving complex assembly operations;
- “Printed communications” means communications which automatically provide a permanent printed record at each terminal of a circuit of all messages which pass over such circuit.
- “private agricultural application” means the operation of an aircraft for the purpose of agricultural application over a property where the pilot is—
- (a) the owner or lessee; or
 - (b) has ownership or other property interest in the crop located on that property;
- “problematic use of substances” means the use of one or more psychoactive substances by aviation personnel in a way that—
- (a) constitutes a direct hazard to the user or endangers the lives, health or welfare of others; or
 - (b) causes or worsens an occupational, social, mental or physical problem or disorder;
- “prohibited area” means an airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited;
- “propeller” means a device for propelling an aircraft that has blades on a powerplant driven shaft and that, when rotated, produces by its action on the air, a thrust approximately perpendicular to its plane of rotation, and includes control components normally supplied by its manufacturer, but does not include main and auxiliary rotors or rotating airfoils of powerplants;
- “propeller-driven aeroplane” means a piston or turbine-powered aeroplane that derives its primary thrust from propellers;
- “proper shipping name” means the name to be used to describe a particular article or substance in all shipping documents and notifications and, where appropriate, on packaging;
- “protection area” means a defined area surrounding a stand intended to reduce the risk of damage from helicopters accidentally diverging from the stand;
- “Problematic use of substances” means the use of one or more psychoactive substances by aviation personnel in a way that—
- (a) constitutes a direct hazard to the user or endangers the lives, health or welfare of others; or
 - (b) causes or worsens an occupational, social, mental or physical problem or disorder.
- “psychoactive substances” means alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, but excludes coffee and tobacco;
- “quality” means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs;
- “quality assurance” means a set of predetermined, systematic actions which are required to provide adequate confidence that a product or service satisfies quality requirements. As distinguished from quality control, involves activities in the business, systems, and technical audit areas;

- “quality control” means the regulatory inspection process through which actual performance is compared with standards, such as the maintenance of standards of manufactured aeronautical products, and any difference is acted upon;
- “quality system” means documented organisational procedures and policies; internal audit of those policies and procedures; management review and recommendation for quality improvements;
- “Radio navigation service” means a service providing guidance information or position data for the efficient and safe operation of aircraft supported by one or more radio navigation aids.
- “radiotelephony” means a form of radio communication primarily intended for the exchange of information in the form of speech;
- “ramp” means a defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail, or cargo; fuelling; parking; or maintenance. It is also known as “Apron”;
- “rated air traffic controller” means an air traffic controller holding a licence and valid ratings appropriate to the privileges to be exercised;
- “rating” means an authorisation entered on or associated with a licence and forming part thereof, stating special conditions, privileges or limitations pertaining to such licence;
- “RCP type” means a label (e.g. RCP 240) that represents the values assigned to RCP parameters for communication transaction time, continuity, availability and integrity;
- “rebuild” means the restoration of an aircraft/aeronautical product by using methods, techniques, and practices acceptable to the Authority, when it has been disassembled, cleaned, inspected as permitted, repaired as necessary, reassembled, and tested to the same tolerances and limits as a new item, using either new parts or used parts that conform to new part tolerances and limits;
- “reference geometric factor” means an adjustment factor based on a measurement of aeroplane fuselage size derived from a two-dimensional projection of the fuselage;
- “reference standard” means a standard that is used to maintain working standards;
- “regulated entity” means an individual or organisation that is certificated, licenced or authorised by the Authority to conduct activities in aviation;
- “re-issue of a licence, rating, authorisation or certificate” means the administrative action taken after a licence, rating, authorisation or certificate has lapsed that re-issues the privileges of the licence, rating, authorisation or certificate for a further specified period consequent upon the fulfilment of specified requirements;
- “remote co-pilot” means a licensed remote pilot serving in any piloting capacity other than as remote pilot-in-command but excluding a remote pilot who is in the remote pilot station for the sole purpose of receiving flight instruction;
- “remote pilot station” means the component of the remotely piloted aircraft system containing the equipment used to pilot the remotely piloted aircraft;
- “remote pilot” means a person charged by the operator with duties essential to the operation of a remotely piloted aircraft and who manipulates the flight controls, as appropriate, during flight time;
- “remote pilot-in-command” means the remote pilot designated by the operator as being in command and charged with the safe conduct of a flight;
- “remotely piloted aircraft (RPA)” means an unmanned aircraft which is piloted from a remote pilot station;
- “remotely piloted aircraft system (RPAS)” means a remotely piloted aircraft, its associated remote pilot station(s), the required command and control links and any other components as specified in the type design;
- “remote pilot station (RPS)” means the component of the RPAS containing the equipment used to pilot the RPA;
- “rendering (a licence) valid” means the action taken by a Contracting State, as an alternative to issuing its own licence, in accepting a licence issued by any other Contracting State as the equivalent of its own licence;
- “rendering (a Certificate of Airworthiness) valid” means the action taken by a Contracting State, as an alternative to issuing its own Certificate of Airworthiness, in accepting a Certificate of Airworthiness issued by any other Contracting State as the equivalent of its own Certificate of Airworthiness;
- “renewal of licence, rating, authorisation or certificate” means the administrative action taken within the period of validity of a licence, rating, authorisation or certificate that allows the holder to continue to exercise the privileges of a licence, rating, authorisation or certificate for a further specified period consequent upon the fulfilment of specified requirements;

- “repair” means the restoration of an aircraft, engine, propeller or associated part to an airworthy condition in accordance with the appropriate airworthiness requirements after it has been damaged or subjected to wear;
- “repetitive flight plan (RPL)” means a flight plan related to a series of frequently recurring, regularly operated individual flights with identical basic features, submitted by an operator for retention and repetitive use by ATC units;
- “receiver” means a subsystem that receives GNSS signals and includes one or more sensors;
- “recovery time” means the period from the time the equipment ceases to operate up to the time where the equipment becomes operational;
- “reply efficiency” means the ratio of replies transmitted by the transponder to the total of received valid interrogations.
- “reliability” in relation to a telecommunication service, a radio navigation service or a support service, means the probability that the service will perform its function or functions without failure for a specific period;
- “reserved (bits/words/fields)” means bits/words/fields that are not allocated, but which are reserved for a particular for a particular GNSS application
- “requisition” means an official order from the head of the search and rescue center laying claim to the use of an aircraft for search and rescue purposes;
- “risk” means risk to aviation safety,
- “safety” means aviation safety.
- “service provider” means a person or corporation approved to operate and maintain a telecommunication or radio navigation service;
- “reporting point” means a specified geographical location in relation to which the position of the aircraft can be reported;
- “required communication performance (RCP)” means a statement of the performance requirements for operational communications in support of specific ATM functions;
- “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 communication performance type (RCP type)” means a label (e.g. RCP 240) that represents the values assigned to RCP parameters for communication transaction time, continuity, availability and integrity;
- “required inspection items” as used in Part 5, means maintenance items or modifications that must be inspected by a person other than the one performing the work, and include at least those that could result in a failure, malfunction, or defect endangering the safe operation of the aircraft, if not properly performed or if improper parts or materials are used;
- “required navigation performance (RNP)” means a statement of the navigation performance necessary for operations with a defined airspace;
- “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;
- “required visual reference – for instrument approaches” means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In Category III operations with a decision height the required visual Civil reference is that specified for the particular procedure and operation;
- “report time” means the time at which the crew member is required to report for any duty. The reporting time is expressed in the local time at the reporting place;
- “rescue” means an operation to retrieve persons in distress, provide for their initial medical or other needs, and deliver them to a place of safety;
- “reserve availability period” means a duty period during which an operator requires a crew member on short call reserve to be available to receive an assignment for a duty or flight duty period;
- “reserve crew member” means a crew member who is required by an operator to be available to receive an assignment for duty;

- “rescue coordination centre” means a unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region.
- “rescue” means an operation to retrieve persons in distress, provide for their initial medical or other needs, and deliver them to a place of safety;
- “rest facility” means a bunk or seat accommodation installed in an aircraft that provides a crew member with a sleep opportunity which is classified as follows—
- (a) Class 1 rest facility which relates to a bunk or other surface that allows for a flat sleeping position and is located separate from both the flight deck and passenger cabin in an area that is temperature- controlled, allows the crew member to control light, and provides isolation from noise and disturbance;
 - (b) Class 2 rest facility which relates to a seat in an aircraft cabin that allows for a flat or near flat sleeping position. It is separated from passengers by a minimum of a curtain to provide darkness and some sound mitigation; and is reasonably free from disturbance by passengers or crew members;
 - (c) Class 3 rest facility which relates to a seat in an aircraft cabin or flight deck that reclines at least 40 degrees and provides leg and foot support;
- “rest period” means a continuous and defined period of time, subsequent to or prior to duty, during which flight or cabin crew members, maintenance personnel and flight dispatchers are free from all restraint by the operator, including freedom from present responsibility for work should the occasion arise;
- “restricted area (aerodrome)” means any area of an aerodrome that is identified as an area to which access is restricted to authorised persons and includes any aircraft or vehicle on that aerodrome;
- “restricted area (airspace)” means an airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions;
- “restricted area pass” means a document issued by the designated pass issuing authority, that entitles the holder to have access to a specific restricted area of an aerodrome during a specified period;
- “risk mitigation” means the process of incorporating defences or preventive controls to lower the severity or likelihood of a hazard’s projected consequence;
- “rotorcraft” means a power-driven heavier-than-air aircraft supported in flight by the reactions of the air on one or more rotors;
- “rotorcraft flight manual” means a manual, associated with the certificate of airworthiness, containing limitations within which the rotorcraft is to be considered airworthy, and instructions and information necessary to the flight crew members of the safe operation of the rotorcraft;
- “rotorcraft load combinations” means configurations for external loads carried by rotorcraft and are classified as follows—
- (a) Class A—external load fixed to the rotorcraft, which cannot be jettisoned, and does not extend below the landing gear, and is used to transport cargo;
 - (b) Class B—external load suspended from the rotorcraft, which can be jettisoned, and is transported free of land or water during rotorcraft operations;
 - (c) Class C—external load suspended from the rotorcraft, which can be jettisoned, but remains in contact with land or water during rotorcraft operation;
 - (d) Class D—external load suspended from the rotorcraft for the carriage of persons;
- “route sector” means a flight comprising take-off, departure, cruise of not less than 15 minutes, arrival, approach and landing phases;
- “RPA observer” means a trained and competent person designated by the operator who, by visual observation of the remotely piloted aircraft, assists the remote pilot in the safe conduct of the flight;
- “runway” means a defined rectangular area on a land aerodrome prepared for the landing and takeoff of aircraft;
- “runway condition assessment matrix (RCAM)” means a matrix allowing the assessment of the runway condition code, using associated procedures, from a set of observed runway surface condition(s) and pilot report of braking action;
- “runway condition code (RWYCC)” means a number describing the runway surface condition to be used in the runway condition report;
- “runway condition report (RCR)” means a comprehensive standardized report relating to runway surface conditions and its effect on the aeroplane landing and take-off performance;

- “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;
- “runway-holding position” means a designated position intended to protect a runway, an obstacle limitation surface, or an ILS/MLS critical or sensitive area at which taxiing aircraft and vehicles shall stop and hold, unless otherwise authorised by the aerodrome control tower;
- “safe forced landing” means unavoidable landing or ditching with a reasonable expectation of no injuries to person in the aircraft or on the surface;
- “safety” means the state in which risks associated with aviation activities are reduced and controlled to an acceptable level;
- “safety data” means a defined set of facts or set of safety values collected from various aviation-related sources, which when analysed is used to maintain or improve safety;
- “safety information” means safety data processed, organised, or presented in a given context so as to make it useful for the purpose of sharing, exchanging, or retaining for safety management;
- “safety management system (SMS)” means a systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures;
- “safety oversight” means a function, performed by a State, that ensures that aviation licence, certificate, authorisation, or approval holders comply with safety-related standards, regulations, and associated procedures and includes the assessment of the service providers’ SMS where necessary;
- “safety performance” means a State or a service provider’s safety achievement as defined by its safety performance targets and safety performance indicators;
- “safety performance indicator” means a data-based safety parameter used for monitoring and assessing performance;
- “safety performance target” means the planned or intended objective for safety performance indicator(s) over a given period;
- “safety program” means an integrated set of regulations and activities aimed at improving safety;
- “safety recommendation” means a proposal of the accident investigation authority of the State conducting the investigation, based on information derived from the investigation made with the intention of preventing accidents or incidents and which in no case has the purpose of creating a presumption of blame or liability for an accident or incident. In addition to safety recommendations arising from accident and incident investigations, safety recommendations may result from diverse sources, including safety studies;
- “safety recommendation of global concern (SRGC)” means a safety recommendation regarding a systemic deficiency having a probability of recurrence, with significant consequences at a global level, and requiring timely action to improve safety;
- “safety risk” means the predicted likelihood and severity of the consequences or outcomes of a hazard;
- “Safety-sensitive personnel” means persons who might endanger aviation safety if they perform their duties and functions improperly including, but not limited to, crew members, aircraft maintenance personnel and air traffic controllers;
- “satisfactory evidence” means a set of documents or activities that a Contracting State accepts as sufficient to show compliance with an airworthiness requirement;
- “screening” means the application of technical or other means that are intended to identify or detect weapons, explosives, or other dangerous devices, articles, or substances that may be used to commit an act of unlawful interference;
- “secondary standard” means a standard maintained by comparison with a primary standard;
- “Secondary surveillance radar” means a surveillance radar system which uses interrogators and transponders
- “security” means a combination of measures and human and material resources intended to “Secondary surveillance radar” means a surveillance radar system which uses interrogators and transponders safeguard civil aviation against acts of unlawful interference;
- “security audit” means an in-depth compliance examination of all aspects of the implementation of the national civil aviation security programme;
- “security control” refers to a means by which the introduction of weapons, explosives, or other dangerous devices, articles, or substances that may be used to commit an act of unlawful interference can be prevented;

- “security inspection” means an examination of the implementation of relevant national civil aviation security programme requirements by an airline, aerodrome, or other entity involved in security;
- “security program” means measures adopted to safeguard international and domestic civil aviation against acts of unlawful interference;
- “security officer or security screening officer” means a duly trained and appointed aviation security guard;
- “security restricted area” refers to those areas of the airside of an aerodrome that are identified as priority risk areas where in addition to access control, other security controls are applied. Such areas will normally include, inter alia, all commercial aviation passenger departure areas between the screening checkpoint and the aircraft; the ramp; baggage make-up areas, including those where aircraft are being brought into service and screened baggage and cargo are present; cargo sheds; mail centres; and airside catering and aircraft cleaning premises;
- “security survey” means an evaluation of security needs, including the identification of vulnerabilities that could be exploited to carry out an act of unlawful interference, and the recommendation of corrective actions;
- “security test” means a covert or overt trial of an aviation security measure that simulates an attempt to commit an unlawful act;
- “series of flights” are consecutive flights that begin and end within a period of 24 hours; and are all conducted by the same pilot-in-command;
- “serious incident” means an incident involving circumstances indicating that there was a high probability of an accident and associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down;
- “serious injury” means an injury which is sustained by a person in an accident and which—
- (a) requires hospitalisation for more than 48 hours, commencing within seven days from the date the injury was received;
 - (b) results in a fracture of any bone (except simple fractures of fingers, toes or nose); or
 - (c) involves lacerations which cause severe haemorrhage, nerve, muscle or tendon damage; or
 - (d) involves injury to any internal organ; or
 - (e) involves second or third degree burns, or any burns affecting more than 5% of the body surface; or
 - (f) involves verified exposure to infectious substances or injurious radiation;
- “search and rescue aircraft” means an aircraft provided with specialised equipment suitable for the efficient conduct of search and rescue missions;
- “search and rescue service” means the performance of distress monitoring, communication, coordination and search and rescue functions, initial medical assistance or medical evacuation, through the use of public and private resources, including cooperating, aircraft, vessels and other craft and installations;
- “search and rescue region” means an area of defined by the Zimbabwe flight information dimensions, associated with a Rescue Coordination Centre, within which search and rescue services are provided;
- “search and rescue unit” means a mobile resource composed of trained personnel and provided with equipment suitable for the expeditious conduct of search and rescue operations;
- “state aircraft” includes—
- (a) aircraft used or commanded by the Zimbabwe Defence Force, Zimbabwe Republic Police, Department of National Parks and Wild Life, Immigration, or Customs Service;
 - (b) state aircraft from a foreign state;
- “short-call reserve (Standby)” means a defined period of time during which a crew member is assigned to a reserve availability period. The crew member has not been assigned to any duty, but is required by the operator to be available to receive an assignment for duty without an intervening rest period;
- “sight-seeing flights” means the operation of an aircraft involving the carriage of persons for viewing natural formations or man-made objects on the ground when those operations are conducted as part of a business enterprise or for compensation or hire, and—
- (a) the flight is unquestionably advertised as “sight-seeing”; and

- (b) the flight returns to the aerodrome of departure without having landed at any other aerodrome; and
 - (c) the certificated passenger capacity of the aircraft does not exceed 9 passengers;
- “signal area” means an area on an aerodrome used for the display of ground signals;
- “signature” means an individual’s unique identification used as a means of authenticating a record entry or record and may be hand-written, electronic, or any other form acceptable to the Authority;
- “sign a maintenance release (to)” means to certify that maintenance work has been completed satisfactorily in accordance with appropriate airworthiness requirements, by issuing the maintenance release referred to in ICAO Annex 6 (in the case of a release not issued by an approved maintenance organisation) or Annex 8 (in the case of a release issued by an approved maintenance organisation);
- “significant” in the context of the medical provisions, means to a degree of a nature that is likely to jeopardize flight safety;
- “SIGMET information” means information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather and other phenomena in the atmosphere that may affect the safety of aircraft operations.
- “single pilot air taxi” means an operator of non-turbojet aircraft having a maximum certificated configuration for nine or less passengers, that has no more than—
- (a) one aircraft; and
 - (b) one pilot-in-command;
- “significant point” means a specified geographical location used in defining an ATS route or the flight path of an aircraft and for other navigation and ATS purposes;
- “simulated instrument flight” means a flight during which mechanical or optical devices are used in order to reduce the field of vision or the range of visibility from the cockpit of the aircraft;
- “skill test” means a competency test on the areas of operations for a licence, certificate, rating, or authorisation that is conducted by having the applicant respond to questions and demonstrate manoeuvres in flight, or in an approved flight simulation training device, or in a combination of these;
- “small aircraft” refers to both small aeroplanes and helicopters;
- “small aeroplane” means an aeroplane having a maximum certified takeoff mass of 5,700 kg. (12,500 lbs) or less;
- “small helicopter” means a helicopter having a maximum certified take-off mass of less than 2730 kg;
- “smoke number” means the dimensionless term quantifying smoke emissions;
- “solo flight time” means flight time during which a student pilot is the sole occupant of the aircraft;
- “solo flight time – remotely piloted aircraft systems” means flight during which a student remote pilot is controlling the RPAS, acting solo;
- “spare parts” means any parts, appurtenances, and accessories of aircraft (other than aircraft engines and propellers), of aircraft engines (other than propellers), of propellers, and of appliances, maintained for installation or use in an aircraft, aircraft engine, propeller, or appliance, but which at the time are not installed therein or attached thereto;
- “special aircraft jurisdiction of Zimbabwe” includes—
- (a) civil aircraft of Zimbabwe; and
 - (b) any other aircraft within the jurisdiction of Zimbabwe, while the aircraft is in flight, which is from the moment when all external doors are closed following embarkation until the moment when one such door is opened for disembarkation or, in case of a forced landing, until the competent authorities take over the responsibility of the aircraft and the persons and property board;
- “special purpose patrolling” means the operation of an aircraft for the purpose of low-level patrolling for potential problems of power lines, pipe lines and canals;
- “special VFR flight” means a VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC or at night;
- “special curricula” means a closely supervised, systematic, and continuous course of training, conforming to a planned syllabus or curriculum and conducted in an ATO;
- “specialised maintenance” means any maintenance not normally performed by an AMO, such as tire retreating or plating;

- “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;
- “specific air range” means the distance an aeroplane travels in the cruise flight phase per unit of fuel consumed;
- “specific operating provisions” describe the ratings (Class or Limited) in detail and will contain or reference material and process specifications used in performing repair work, along with any limitations applied to the maintenance organisation. The accountable manager and the Authority sign this document;
- “split duty” means a flight duty period which consists of two duties separated by a scheduled break that is less than a required rest period;
- “standard” means an object, artifact, tool, test equipment, system, or experiment that stores, embodies, or otherwise provides a physical quantity, which serves as the basis for measurement of the quantity, and includes a document describing the operations and process that must be performed in order for a particular end to be achieved;
- “standard atmosphere” means an atmosphere defined as follows—
- (a) the air is a perfect dry gas;
 - (b) the physical constants are—
 - (i) sea level mean molar mass: $M_0 = 28.964\ 420 \times 10^{-3} \text{ kg mol}^{-1}$
 - (ii) sea level atmospheric pressure: $P_0 = 1\ 013.250 \text{ hPa}$
 - (iii) sea level temperature: $t_0 = 15^\circ\text{C}$ $T_0 = 288.15 \text{ K}$
 - (iv) sea level atmospheric density: $\rho_0 = 1.225\ 0 \text{ kg m}^{-3}$
 - (v) temperature of the ice point: $T_i = 273.15 \text{ K}$
 - (vi) universal gas constant: $R^* = 8.314\ 32 \text{ JK}^{-1}\text{mol}^{-1}$
- “State of Design” means the State having jurisdiction over the organisation responsible for the type design;
- “State of Destination” means the State in the territory of which the consignment is finally to be unloaded from an aircraft;
- “State of Manufacture” means the State having jurisdiction over the organisation responsible for the final assembly of the aircraft, engine or propeller;
- “State of Occurrence” means the State in the territory of which an accident or incident occurs;
- “State of the Aerodrome” means the State in whose territory the aerodrome is located;
- “State of the 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’s 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;
- “State of Origin” in relation to dangerous goods, means the State in which dangerous goods were first loaded on an aircraft. (ICAO Annex 18);
- “State of Registry” means the State on whose register an aircraft is entered;
- “State Safety Program (SSP)” means an integrated set of regulations and activities established by a State aimed at improving safety;
- “strayed aircraft” means an aircraft which has deviated significantly from its intended track or which reports that it is lost;
- “substantial damage” means damage or failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component.
- “surveillance” means the State activities through which the State proactively verifies through inspections and audits that aviation licence, certificate, authorisation, or approval holders continue to meet the established requirements and function at the level of competency and safety required by the State;
- “survival ELT” 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;
- “syllabus” in relation to training means the detailed summary or outline describing the main points of a course;
- “synthetic flight trainer” means Flight simulation training device;
- “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 (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 phase” means the operating phase defined by the time during which the engine is operated at the rated thrust;
- “take-off surface” means that part of the surface of an aerodrome which the aerodrome authority has declared available for the normal ground or water run of aircraft taking off in a particular direction;
- “take-off decision point” means the point used in determining take-off performance of a Class 1 helicopter from which, an engine failure occurring at this point, either a rejected take-off may be made or a take-off safely continued;
- “take-off safety speed for Category A rotorcraft (VTOSS)” in relation to rotary-wing aircraft, means the minimum speed at which climb shall be achieved with the critical engine inoperative, the remaining engines operating within approved operating limits;
- “take-off surface” means that part of the surface of an aerodrome which the aerodrome authority has declared available for the normal ground or water run of aircraft taking off in a particular direction;
- “Target Level of Safety (TLS)” means a generic term representing the level of risk which is considered acceptable in particular circumstances;
- “taxiing” means movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing;
- “taxi/ground idle” means the operating phases involving taxi and idle between the initial starting of the propulsion engine(s) and the initiation of the take-off roll and between the time of runway turn-off and final shutdown of all propulsion engine(s);
- “taxiway” means a defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including—
- (a) aircraft stand taxi lane, which is a portion of an apron designated as a taxiway and intended to provide access to aircraft stands only;
 - (b) apron taxiway, which is a portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron;
 - (c) rapid exit taxiway, which is a taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimising runway occupancy times;
- “technical log” means a document carried on an aircraft that contains information to meet ICAO requirements. A technical log contains two independent sections, which are a journey record section and an aircraft maintenance record section;
- “technical instructions” means the latest effective edition of the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc. 9284-AN/905), including the supplement and any addendum, approved and published by decision of the Council of the ICAO. The abbreviated term "Technical Instructions" is used in these Regulations;
- “temporary downgrade” means RFFS category as notified, including by NOTAM, and resulting from the downgrade of the level of RFFS protection available at an aerodrome;
- “terminal control area” means a control area normally established at the confluence of ATC routes in the vicinity of one or more major aerodromes;
- “terrain awareness warning system” means a system that provides the flight crew with sufficient information and alerting to detect a potentially hazardous terrain situation and so the flight crew may take effective action to prevent a controlled flight into terrain (CFIT) event;
- “test” means a device used to measure the level of knowledge or skill of the trainee at the time of administration, which is classified as follows—
- (a) prerequisite test, which is a test applied before a course begins to allay doubts as to whether the trainees have all the skills required to meet the defined entry level for a course;
 - (b) progress test, which is a test given at one or more points during the delivery of a lesson or module to determine whether the trainee has accomplished the intermediate objectives;

- (c) mastery test, which is a test used to determine whether the trainee has achieved performance of the end-of-module objective to the required standard or level of competence, and is conducted under the conditions specified in the objective;
- “threat” in relation to flight means events or errors that occur beyond the influence of an operational person, increase operational complexity and which must be managed to maintain the margin of safety. (ICAO Annex 1);
- “threat management” means the process of detecting threats and responding to them with countermeasures that reduce or eliminate the consequences of threats and mitigate the probability of errors or undesired states;
- “threshold time” means the range, expressed in time, established by the State of the Operator to an en-route alternate aerodrome, whereby any time beyond requires a specific approval for EDTO from the State of the Operator;
- “tilt-rotor” means a powered-lift capable of vertical take-off, vertical landing, and sustained low-speed flight, which depends principally on engine-driven rotors mounted on tiltable nacelles for the lift during these flight regimes and on non-rotating aerofoil(s) for lift during high-speed flight;
- “Time-in-position” means the period of time when an air traffic controller is exercising the privileges of the air traffic controller’s licence at an operational position.
- “Track” means the projection on the earth’s surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (true, magnetic or grid).
- “touchdown positioning circle (TDPC)” means a touchdown positioning marking (TDPM) in the form of a circle used for omnidirectional positioning in a TLOF;
- “positioning marking (TDPM)” means a marking or set of markings providing visual cues for the positioning of helicopters;
- “total estimated elapsed time” for IFR flights, means the estimated time required from takeoff to arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the destination aerodrome, to arrive over the destination aerodrome. For VFR flights, the estimated time required from takeoff to arrive over the destination aerodrome;
- “Total Vertical Error (TVE)” means the vertical geometric difference between the actual pressure altitude flown by an aircraft and its assigned pressure altitude (flight level);
- “traceability” means a characteristic of a calibration, analogous to a pedigree. A traceable calibration is achieved when each Measurement Device and Working Standard, in a hierarchy stretching back to the National Standard, was itself properly calibrated, and the results properly documented. The documentation provides the information needed to show that all calibrations in the chain of calibrations were properly performed;
- “track” means the projection on the earth’s surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (true, magnetic or grid);
- “traffic avoidance advice” means advice provided by an air traffic services unit specifying manoeuvres to assist a pilot to avoid a collision;
- “touchdown” means the point where the nominal glide path intercepts the runway;
- “transmission rate” means the average number of pulse pairs transmitted from the transponder per second;
- “two-frequency glide path system” means an ILS glide path in which coverage is achieved by the use of two independent radiation field patterns spaced on separate carrier frequencies within the particular glide path channel;
- “UHF” means Ultra High Frequency
- “virtual origin” means the point at which the straight line through the 30 percent and 5 per cent amplitude points on the pulse leading edge intersects the 0 per cent amplitude axis;
- “VOR” means Very High Frequency (VHF) Omnidirectional radio Range;
- “Z marker beacon” means type of radio beacon, the emissions of which radiate in a vertical cone-shaped pattern;
- “traffic information” means information issued by an air traffic services unit to alert a pilot to other known or observed air traffic which may be in proximity to the position or intended route of flight and to help the pilot avoid a collision;
- “training manual” means a manual containing the training goals, objectives, standards syllabi, and curriculum for each phase of the approved training course;
- “training outcome” means an end-of-course objective;

- “training procedures manual” means a manual containing procedures, instructions and guidance for use by personnel of an Approved Training Organisation in the execution of their duties in meeting the requirements of the certificate;
- “training program” means a number of courses conducted to meet a specific national (or international) training need;
- “training specifications” means a document issued to an Aviation Training Organisation certificate holder by Zimbabwe that specifies training program requirements and authorises the conduct of training, checking, and testing with any limitations thereof;
- “transfer cargo and mail” means cargo and mail departing on an aircraft other than that on which it arrived;
- “Transfer of control point” means a defined point located along the flight path of an aircraft, at which the responsibility for providing air traffic control service to the aircraft is transferred from one control unit or control position to the next.
- “Transferring unit” means air traffic control unit in the process of transferring the responsibility for providing air traffic control service to an aircraft to the next air traffic control unit along the route of flight
- “training program” means a program that consists of courses, courseware, facilities, flight training equipment, and personnel necessary to accomplish a specific training objective, and may include a core curriculum and a speciality curriculum;
- “transfer standard” means any standard that is used to compare a measurement process, system, or device at one location or level with another measurement process, system or device at another location or level;
- “transition altitude” means the altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes;
- “training time” means the time spent receiving from an authorised instructor flight training, ground training, or simulated flight training in an approved flight simulation training device;
- “training to proficiency” means the process of the check airman administering each prescribed manoeuvre and procedure to a pilot as necessary until it is performed successfully during the training period;
- “tribal knowledge” means knowledge that is passed individual to individual, rather than captured in written policy and procedure;
- “touchdown positioning circle (TDPC)” means a touchdown positioning marking (TDPM) in the form of a circle used for omnidirectional positioning in a TLOF;
- “touchdown positioning marking (TDPM)” means a marking or set of markings providing visual cues for the positioning of helicopters;
- “Type Certificate” means a document issued by a Contracting State to define the design of an aircraft, engine or propeller type and to certify that this design meets the appropriate airworthiness requirements of that State;
- “type design” means the set of data and information necessary to define an aircraft, engine or propeller type for the purpose of an airworthiness determination;
- “touchdown” means the point where the nominal glide path intercepts the runway;
- “transmission rate” means the average number of pulse pairs transmitted from the transponder per second;
- “two-frequency glide path system” means an ILS glide path in which coverage is achieved by the use of two independent radiation field patterns spaced on separate carrier frequencies within the particular glide path channel;
- “UHF” means Ultra High Frequency
- “Uncertainty phase” means a situation wherein uncertainty exists as to the safety of an aircraft and its occupants.
- “undesired aircraft state” occurs when the flight crew places the aircraft in a situation of unnecessary risk. (ICAO Annex 1);
- “ultimate load” means the limit load multiplied by the appropriate factor of safety;
- “UHF” means Ultra High Frequency
- “unaided night flight” in relation to a flight in which a pilot uses night vision goggles, means the portion of the flight in which the pilot does not use night vision goggles to maintain visual surface reference;
- “undesired aircraft state” occurs when the flight crew places the aircraft in a situation of unnecessary risk;
- “unforeseen factors” means factors which could have an influence on the fuel consumption to the destination aerodrome, such as deviations of an individual aeroplane from the expected fuel consumption data, deviations

- from forecast meteorological conditions, extended delays taxi times before take-off, and deviations from planned routings or cruising levels;
- “unforeseen operational circumstance” means an unplanned event of insufficient duration to allow for adjustments to schedules, including unforecast weather, equipment malfunction, or air traffic delay that is not reasonably expected;
- “UN number” means the four-digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods to identify a substance or a particular group of substance;
- “unit load device” means any type of freight container, aircraft container, aircraft pallet with a net, or aircraft pallet with a net over an igloo;
- “Unidentified aircraft” means an aircraft which has been observed or reported to be operating in a given area but whose identity has not been established.
- “unidentified baggage” means baggage at an aerodrome, with or without a baggage tag, that is not picked up by or identified with a passenger;
- “unmanned aircraft” refers to a further classification of an aircraft which is intended to be operated with no pilot on board. Unmanned aircraft shall include unmanned free balloons and remotely piloted aircraft;
- “unmanned free balloon” means a non-power-driven, unmanned, lighter-than-air aircraft in free flight;
- “unpredictability” means the implementation of security measures in order to increase their deterrent effect and their efficiency by applying them at irregular frequencies, in different locations, or with varying means, in accordance with a defined framework;
- “validation” means the acceptance of a certificate, licence, approval, designation, or authorisation issued by another ICAO Contracting State as the primary basis for the Authority’s issuance of a certificate, licence, approval, designation, or authorisation containing the same or more restrictive privileges;
- “vessel” means a craft used for travelling on water and includes a boat or ship;
- “VFR” is the symbol used to designate the visual flight rules;
- “VFR flight” means a flight conducted in accordance with the visual flight rules;
- “visibility” for aeronautical purposes is the greater of—
- (a) the greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognised when observed against a bright background; or
 - (b) the greatest distance at which lights in the vicinity of 1,000 candelas can be seen and identified against an unlit background;
- “Visual Line-of-Sight (VLOS) operation” means an operation in which the remote pilot or RPA observer maintains direct unaided visual contact with the remotely piloted aircraft;
- “visual meteorological conditions (VMC)” means meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima;
- “VMC” means the symbol used to designate visual meteorological conditions.
- “virtual origin” means the point at which the straight line through the 30 per cent and 5 per cent amplitude points on the pulse leading edge intersects the 0 per cent amplitude axis;
- “volcanic ash advisory centre (VAAC)” means a meteorological centre designated by regional air navigation agreement to provide advisory information to meteorological watch offices, area control centres, flight information centres, world area forecast centres and international OPMET databanks regarding the lateral and vertical extent and forecast movement of volcanic ash in the atmosphere;
- “VOR” means Very High Frequency (VHF) Omnidirectional radio Range; and
- “Z marker beacon” means type of radio beacon, the emissions of which radiate in a vertical cone-shaped pattern.
- “VTOSS” means the minimum speed at which climb shall be achieved with the critical engine inoperative, the remaining engines operating within approved operating limits;
- “Waypoint” means a specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation. Waypoints are identified as either—
- (a) Fly-by waypoint—a waypoint which requires turn anticipation to allow tangential interception of the next segment of a route or procedure; or
 - (b) Flyover waypoint—a waypoint at which a turn is initiated in order to join the next segment of a route or procedure.

“weapon” means anything designed, used or capable of inflicting harm and includes a firearm;

“wet lease” means the lease of an aircraft with crew and other back-up;

“wet runway” means the runway surface is covered by any visible dampness or water up to and including 3 mm deep within the intended area of use; and

“window of circadian low” means a period of maximum sleepiness that occurs between 0200 and 0559 during a physiological night.

The following abbreviations shall apply in these regulations—

2D = two dimensional

3D = three dimensional

ACAS = Airborne collision avoidance system

AD = Airworthiness Directive

ADS = Automatic dependent surveillance

ADS-B = automatic dependent surveillance – broadcast

ADS-C = automatic dependent surveillance – contract

AIP = Aeronautical Information Publication

AMO = Approved Maintenance Organisation

AME = aircraft maintenance engineer

AOC = Air operator certificate

AOM = Aircraft Operating Manual

ASE = Altimetry system error

ATC = Air Traffic Control

ATO = Approved Training Organization

ATPL = Airline Transport Pilot license

ATS = Air Traffic Services

APV = Approach procedure with vertical guidance

C2 = Command and control

CAT I = Category I operation

CAT II = Category II operation

CAT III = Category III operation

CDFA = Continuous Descent Final Approach

CDL = Configuration deviation list

CFIT = Controlled Flight into the Terrain

C.G. = Center of Gravity

COMAT = Operator (company) material

CPDLC = Controller-pilot data link communications

CPL = Commercial Pilot License

CVS = Combined Vision System

DA = Decision altitude

DH = Decision height

EFB = Electronic Flight Bag

EGPWS = Enhanced ground proximity warning

ELT = Emergency locator transmitter

ELT(AD) = Automatic deployable ELT

ELT(AF) = Automatic fixed ELT

ELT(AP) = Automatic portable ELT

ELT(S) = Survival ELT

ETDO = Extended Time Diversion Operations

EUROCAE = European Organisation for Civil Aviation Equipment

EVS = Enhanced vision system

FAS = Final Approach Segment

FATO = Final approach and take-off area

FDP = Flight Duty Period
FMC = Flight Management Computer
FRMS = Fatigue Risk Management System
FSTD = flight simulation training device
GLS = global landing system
HUD = Head-up display
IAP = Instrument approach procedure
IFR = Instrument flight rules
IMC = Instrument meteorological conditions
JRCC = Joint rescue coordination centre
LED = Light Emitting Diode
LDP = Landing decision point
MCM = Maintenance Control Manual
MDA = Minimum descent altitude
MDH = Minimum descent height
MEL = Minimum equipment list
MMEL = Master minimum equipment list
MSL = Mean sea level
NM = Nautical mile
NPA = Non-precision approach
NPRM = Notice of Proposed Rule Making
nvRM = Non-volatile particulate matter
NVIS = Night Vision Imaging Systems
OCA = Obstacle clearance altitude
OCH = Obstacle clearance height
OM = Operations Manual
PA = Precision approach
PBC = Performance-based communications
PBN = Performance-based navigation
PBS = Performance-based surveillance
RCC = Rescue coordination centre
RCP = Required Communications Performance
RNP = Required navigation performance
RPA = Remotely piloted aircraft
RPAS = Remotely piloted aircraft system
RPL = Repetitive flight plan
RPS = Remote pilot station
RSC = Rescue sub centre
RSP = Required surveillance performance
RVR = Runway visual range
RVSM = Reduced Vertical Separation Minimums
SARPs = ICAO Standards & Recommended Practices
SBAS = Satellite-based augmentation system
SMM = Safety Management Manual
SMS = Safety Management System
SRR = Search and rescue region
SSP = State Safety Program
SVS = Synthetic Vision System
TC = Type Certificate
TDP = Take-off decision point
TEM = Threat and error management

TSO = Technical standard order
TLS – Target level of safety
TVE – Total vertical error
UA = Unmanned aircraft
UAS = Unmanned aircraft system
ULD = Unit load device
UN = United Nations
UPU = Universal Postal Union
UTC = Coordinate universal time
VFR = Visual flight rules
VLOS = Visual line-of-sight (VLOS) operation
VMC = Visual meteorological conditions
VNAV = Vertical navigation

In these regulations the following symbols shall apply—

Ampere (A)
Becquerel (Bq)
Candela (cd)
Celsius temperature (t°C)
Coulomb (C)
Degree Celsius (°C)
Farad (F)
Foot (ft)
Gray (Gy)
Henry (H)
Hertz (Hz)
Joule (J)
Kelvin (K)
Kilogram (kg)
Knot (kt)
Litre (L)
Lumen (lm)
Lux (Ix)
Metre (m)
Mole (mol)
Newton (N)
Ohm (Ω)
Pascal (Pa)
Radian (rad)
Second (s)
Siemens (S)
Sievert (Sv)
Steradian (sr)
Testa (T)
Tonne (t)
Volt (V)
Watt (W)
Weber (Wb)

2. The following are deemed to be psychoactive substances—
- (a) Alcohol.
 - (b) Opioids.
 - (c) Cannabinoids.

- (d) Sedatives and hypnotics.
- (e) Cocaine and other stimulants (except caffeine).
- (f) Hallucinogens.
- (g) Volatile solvents.

PART II
CIVIL AVIATION (AIR OPERATOR CERTIFICATION AND ADMINISTRATION)
ARRANGEMENT OF SECTIONS
SUB PART I

Preliminary

Section

1. Title

SUB PART II
Air Operator Certification

2. Application for Air Operator Certificate
3. Issue of Air Operator Certificate
4. Contents of the Air Operator Certificate
5. Duration of an Air Operator Certificate
6. Amendment of Air Operator Certificate
7. Air operator certificate
8. Conducting test, audits and inspections

SUB PART III
Air Operator Certification and Continued Validity

9. Base of Operations
10. Management Personnel required for Commercial Air Transport Operations
11. Quality system
12. Submission and revision of policy and procedure manual
13. Retention of Records
14. Indoctrination and recurrent curriculum
15. Flight safety document system
16. Safety Management System

SUB PART IV
Aircraft

17. Authorised aircraft
18. Dry leasing of foreign registered aircraft
19. Wet and Damp leasing
20. Aircraft interchange
21. Demonstration flights

SUB PART V
Air Operator Certificate Flight Operations Management

22. Ground handling Training programs
23. Aircraft operating manual
24. Designation of pilot-in- command
25. Required Cabin crew members and their assignment of emergency duties
26. Carriage of special situation passengers
27. Crew member checking, and standardisation programme
28. Cockpit check procedure
29. Performance planning manual
30. Performance Data Control System
31. Mass and balance data control system
32. Ground handling manual
33. Cabin crew member manual
34. Passenger briefing cards
35. Aeronautical data control system

- 36. Route guide
- 37. Weather reporting sources
- 38. De-icing and anti-icing programme
- 39. Routes and areas of operation
- 40. Navigational Accuracy
- 41. Reportable occurrences

SUB PART VI

Air Operator Certificate Maintenance Requirements

- 42. Approval and acceptance of Air Operator Certificate maintenance systems and programmes
- 43. Maintenance procedures and quality assurance system
- 44. Maintenance control manual
- 45. Aircraft technical log
- 46. Continuing airworthiness information
- 47. Maintenance and operational experience

SUB PART VII

Approved maintenance organization

- 48. Maintenance management
- 49. Maintenance Records
- 50. Aircraft technical log entries—maintenance record section
- 51. Release to service
- 52. Modification and repairs
- 53. Aircraft maintenance programme
- 54. Reliability program
- 55. Authority to perform and approve maintenance, preventive maintenance, and modifications
- 56. License requirements for a technician – Air Operator Certificate holder using equivalent system

SUB PART VIII

Air Operator Certificate Holder's Security Management

- 57. Security Requirements
- 58. Security training programmes
- 59. Reporting acts of unlawful interference
- 60. Aircraft search procedure checklist

SUB PART IX

Flight and Duty Time limitations and Rest Requirements: Flight crew Members

- 61. Fitness for duty
- 62. Fatigue management- Helicopters
- 63. Fatigue risk management system
- 64. Maintenance, Implementation and Monitoring of Fatigue Risk Management
- 65. Fatigue Risk Management Policy
- 66. Fatigue Risk Management documentation
- 67. Identification of hazards
- 68. Risk assessment
- 69. Risk mitigation
- 70. Fatigue Risk Management System safety assurance processes
- 71. Fatigue Risk Management System promotion processes
- 72. Fatigue education and Fatigue Management Training
- 73. Training syllabus fatigue management training
- 74. Prescriptive flight time limitation
- 75. Flight duty period: Un-augmented operations.
- 76. Flight duty period: Split duty.

77. Flight duty period: Augmented flight crew.
78. Flight duty period extensions
79. Reserve status.
80. Cumulative duty limitations
81. Rest period
82. Consecutive night time operations.
83. Emergency and government sponsored operations
84. Operator Responsibilities
85. Crew members' responsibilities
86. Scheduling
87. Preparation of rosters
88. Operational robustness of rosters
89. Home Base
90. Travelling time
91. Records of Home Base, Flight Times, Duty and Rest Periods
92. Nutrition
93. Variation from flight duty period requirements
94. Unforeseen circumstances in actual flight operations – pilot-in-command's discretion

SUB PART X

GENERAL

95. Airside driving.
96. Substituted copy of lost certificate supersedes original which must be surrendered on recovery.
96. Transitions and Savings.
- 97 Organisational and Management System for Operational Control
- 98 Flight Supervision and Monitoring System
- 99 Foreign Operator Certificate
- 100 Foreign Operator Certificate validity
- 101 Lost Foreign Operators Certificate
- 102 Suspension of Foreign Air Operator Certificate
- 103 Revocation of Foreign Operator Certificate
- 104 Surrender of certificate
- 105 Foreign Operator certificate exemption
- 106 Application for Foreign Air Operator Certificate
- 107 Operations specifications
- 108 Conditions for operations specifications issuance
- 109 Contents of foreign operations specifications
- 110 Foreign Operator Certificate holder compliance requirements
- 111 Foreign operator inspections
- 112 Foreign air operator's aircraft technical log
- 113 Air operator manuals, documents and flight crew licences to be carried
- 114 Additional information and forms to be carried
- 115 Production of documentation, manuals and records
- 116 Computation of passenger and baggage weights
- 117 Single-engine aircraft operations at night or in Instrument Meteorological Conditions
- 118 Flight rules within Zimbabwe
- 119 Flight crew member qualifications
- 120 Age limitations
- 121 Language proficiency
- 122 Aircraft security

- 123 Unauthorised carriage
- 124 Offering dangerous goods for transport by air
- 125 Carriage of weapons of war and munitions of war
- 126 Carriage of sporting weapons and ammunition
- 127 Flight recorder
- 128 Repeal

- First Schedule- Air Operator Certificate Pre- application/Renewal Form
- Second Schedule- Prospective Operator pre – assessment Statement (pops) Form
- Third Schedule- Air Operator Certificate
- Fourth Schedule- Operator Specifications
- Fifth Schedule- Management Personnel required for commercial Air Transport Operations
- Sixth Schedule: Quality System
- Seventh Schedule: Validity Periods for Retention and Records
- Eighth Schedule: Flight Safety Documents System
- Ninth Schedule: Framework for Safety Management Systems
- Tenth Schedule: Minimum acceptable aerodrome for rescue and fire fighting
- Eleventh Schedule: Demonstration Flights
- Twelfth Schedule: Operator Manual
- Thirteenth Schedule: Training Programme
- Fourteenth Schedule: Aircraft Operating Manual
- Fifteenth Schedule: Mass Balance Data Control System
- Sixteenth Schedule: Passenger Briefing Cards
- Seventeenth Schedule: Aeronautical Data Control System
- Eighteenth Schedule: Weather Reporting Schedule
- Nineteenth Schedule: De-icing and Anti-icing Programme
- Twentieth Schedule: Flight Monitoring System
- Twenty-First Schedule: Maximum duty hours for flight crew members
- Twenty-Second Schedule: Special situation passengers

SUB PART I

Title

1. This part may be cited as the Civil Aviation (Air Operator Certification and Administration) Regulations, 2023.

SUB PART II

Air Operator Certification

Application for Air Operator Certificate

- 2 (1) Any person who wishes to conduct commercial air operations shall submit—
 - (a) an air service permit issued in terms of the Air Service (General) regulations, 1971, published in Rhodesia Government Notice 582 of 1971; and
 - (b) an application in terms of this section accompanied by an application fee specified in this Part.
- (2) Each applicant shall—
 - (a) make the application for an initial issue of an Air Operator Certificate at least 90 days before the date of intended operation; and
 - (b) undergo a five-phase certification process by the Authority.
- (3) The five-phase certification process referred to in subsection (2) (b) shall be—
 - (a) pre-application phase where—
 - (i) an applicant shall submit a completed CA Form 175 set out in the First Schedule; and
 - (ii) an initial application meeting shall be conducted.
 - (b) formal application phase where—

- (i) a formal application meeting shall be conducted; and
- (ii) an applicant shall submit a completed CA Form 121 set out in the Second Schedule, company documents and all other documentation that are required by the Authority for the certification process;
- (c) document evaluation phase where—
the Authority shall conduct an in depth review of the documents submitted in terms of subsection (3)(b) to ensure that the air operator takes into account, reviews and implements all regulations related to the contents of the operations manual, as part of the flight safety documents system;
- (d) demonstration and inspection phase where—
 - (i) the Authority shall conduct inspection of the applicant’s facilities and equipment including—
 - A. principal base of operation facilities;
 - B. maintenance facilities;
 - C. training facilities;
 - D. ground handling facilities; and
 - E. the equipment to be used;
 and
 - (ii) the applicant shall demonstrate to the Authority that he or she has adequate equipment, facilities, financial resources and personnel to operate the proposed commercial air transport operation and is able to conduct the commercial air transport service in a safe and proper manner in full compliance with all applicable rules and regulations.
- (e) certification phase where the Authority shall—
 - (i) conduct a final assessment of the applicant; and
 - (ii) finalise the certification process; and
 - (iii) issue an Air Operator Certificate upon payment of the certification fee set out in this Part.

Issue of Air Operator Certificate

3. (1) The Authority may, upon the payment of the fees specified in this Part, issue an Air Operator Certificate and if, after investigation, the Authority is satisfied that the applicant —
- (a) is a company registered in terms of the Companies and Other Business Entities Act [*Chapter 24:31*]; and
 - (b) has its principal place of business and its registered office, if any, located in Zimbabwe; and
 - (c) meets the applicable laws and standards for being issued with an Air Operator Certificate; and
 - (d) is properly and adequately equipped for safe operations in commercial air transport and maintenance of the aircraft; and
 - (e) has successfully undergone a five-phase certification process by the Authority; and
 - (f) includes in his or her Air Operator Certificate application at least one aircraft of the same category with the largest aircraft intended to be operated which is locally registered.
- (2) The Authority may refuse an application for an air operator certificate where —
- (a) the applicant is—
 - (i) not properly or adequately equipped; or
 - (ii) is not able to conduct safe operations in commercial air transport;
 - (b) the applicant previously held an air operator certificate which was revoked; or
 - (c) the applicant—
 - (i) contributed to the circumstances leading to the revocation of an air operator certificate;
 - (ii) had a substantial interest in the air operator whose licence was revoked; or
 - (i) was a senior manager of the Operator whose licence was revoked.
- (3) An Air Operator Certificate holder may apply, on payment of the fee set out in this Part in writing to the Authority for the issuance of a duplicate certificate where the Air Operator Certificate is lost, destroyed or mutilated.

Contents of the Air Operator Certificate

- 4 (1) The Air Operator Certificate shall consist of —
- (a) a one-page certificate for public display; and

- (b) operations specifications for each aircraft model in the operator's fleet, identified by aircraft make, model and series, with the following—
- (i) the State of the operator;
 - (ii) issuing Authority and contact details;
 - (iii) the location, in a controlled document carried on board, where the contact details of operational management can be found;
 - (iv) list of authorisations, conditions and limitations;
 - (v) operator name and trading name;
 - (vi) Air Operator Certificate number;
 - (vii) date of issue, the name, signature and title of the Authority representative issuing the certificate;
 - (viii) validity period;
 - (ix) aircraft model, types and area of operations;
 - (x) principal place of business address;
 - (xi) description of the type of operations authorised; and
 - (xii) other special authorisations, approvals and limitations issued by the Authority in accordance with the standards which are applicable to the operations and maintenance conducted by the air operator certificate holder.

(2) The Air Operator certificate and operations specifications shall follow the layout specified in the Fourth schedule.

(3) The Authority may group the aircraft models with identical authorisations and limitations in a single list and in one operations specifications.

(4) An aircraft that is under another certificate holder's certificate and operated by another operator under an interchange agreement shall be incorporated in both operators' operations specifications.

Duration of an Air Operator Certificate

5 (1) An Air Operator Certificate issued shall be valid for 12 calendar months unless when —

- (a) it is amended, suspended, revoked or otherwise terminated by the Authority under this SUB PART;
- (b) surrendered to the Authority by the holder; or
- (c) the Air Operator Certificate holder suspends operations for more than 60 days.

(2) An operator who suspends or fails to conduct operations for a continuous period of more than 60 days shall have his or her Air Operator Certificate suspended by the Authority.

(3) An operator whose Air Operator Certificate is suspended in terms of subsection (2) may apply for re-certification by the Authority.

Amendment of Air Operator Certificate

6. (1) The Authority may amend an Air Operator Certificate if —

- (a) the Authority determines that safety in commercial air transport and the public interest require the amendment; or
- (b) the Air Operator Certificate holder applies for an amendment, and the Authority determines that safety in commercial air transport and the public interest allows the amendment.

(2) If the Authority determines that there must be an emergency amendment to the certificate, it shall send a notice in writing to the Operator that an emergency exists that requires immediate amendment of the Air Operator Certificate, and such an amendment shall be effective from the date the air operator certificate holder receives the notice.

(3) Any amendment proposed by the Authority, other than an emergency amendment, shall become effective 30 days after notice in writing to the Air Operator Certificate holder, unless the Air Operator Certificate holder has appealed in writing to the Minister against such proposal prior to the effective date.

(4) An Air Operator Certificate holder shall apply to the Authority for—

- (a) an amendment to its—
 - (i) Air Operator Certificate; or
 - (ii) operations specifications; or
- (b) any intended change of aircraft.

(5) Any amendments proposed by the Air Operator Certificate holder shall be made at least thirty days prior to the intended date of any operation under that amendment accompanied by the fees specified in this Part.

- (6) No person shall advertise for commercial air transport services unless approved by the Authority.
- (7) No person shall perform a commercial air transport operation—
 - (a) for which an Air Operator Certificate amendment is required unless the person has received notice of the approval from the Authority; or
 - (b) contrary to the amendments made to his or her operations specifications by the Authority.

Air operator certificate

7(1) No operator may operate an aircraft in commercial air transport unless that operator holds an Air Operator Certificate issued by the Authority in terms of section 3.

(2) The Air Operator Certificate shall authorise the commercial operator to conduct commercial operations in accordance with the operations specifications issued by the Authority.

(3) No person may conduct commercial air transport operations which are not authorised by the terms and conditions of the Air Operator Certificate operations specifications.

(4) Each Air Operator Certificate holder shall, at all times, continue to be in compliance with the maintenance requirements in order to hold that certificate.

(5) Failure to comply with subsection (3) requirements may result in the revocation or suspension of the Air Operator Certificate.

Conducting test, audits and inspections

8(1) The Authority shall conduct surveillance to verify that all Air Operator Certificate holders comply, on a continuing basis with these regulations, international standards, AOC and corresponding operations specifications.

(2) The surveillance referred in subsection (1) shall include the monitoring of AOC holders' financial condition and any negative trends.

(3) The Air Operator Certificate holder shall allow the Authority to conduct tests and inspections, at any time or place, to determine whether an Air Operator Certificate holder is complying with the applicable laws and Air Operator Certificate terms and conditions.

(4) The Air Operator Certificate holder shall make available at its principal base of operations—

- (a) all portions of its current Air Operator Certificate;
- (b) all portions of its operations and maintenance manuals; and
- (c) a current listing that includes—
 - (i) the location and persons responsible for each record;
 - (ii) documents and reports required to be kept by the Air Operator Certificate holder under this Part.

(5) Any Air Operator Certificate holder who refuses or fails to make available to the Authority upon request, all portions of the Air Operator Certificate, Operations and Maintenance Manuals and any other record, document or report that might be required by the Authority, shall have—

- (a) his or her Air Operator Certificate suspended; or
- (b) SUB PART of the Air Operator Certificate privileges removed.

SUB PART III

Air Operator Certification and Continued Validity

Base of Operations and maintenance

9. (1) An Air Operator Certificate holder shall maintain—

- (a) a principal base of operations; and
- (b) a principal base of maintenance.

(2) An Air Operator Certificate holder may establish a main operation base and a main maintenance base at the same location or at separate locations.

(3) An Air Operator Certificate holder shall provide written notification of intent to the Authority at least 30 days before it proposes to establish or change the location of its base.

(4) Any Air Operator Certificate holder who does not have or fails to maintain his or her principal base of operation or maintenance shall have his or her operations suspended or revoked by the Authority.

Management Personnel required for Commercial Air Transport Operations

10 (1) An Air Operator Certificate holder shall have an Accountable Manager, acceptable to the Authority, who has corporate authority for ensuring that all flight operations and maintenance activities can be financed and carried out to the highest degree of safety standards required by the Authority.

(2) When conducting commercial air transport operations, the Air Operator Certificate holder shall have qualified personnel, with proven competency in aviation, available in the following positions or their equivalent —

- (a) head of operations;
- (b) chief pilot;
- (c) head of safety;
- (d) head of maintenance or maintenance coordinator;
- (e) head of quality; and
- (f) head of ground handling.

(3) The Authority may approve combining of positions listed in subsection (2), if the Air Operator Certificate holder is able to show that it can perform the operation with the highest degree of safety under the direction of fewer or different categories of management personnel due to the —

- (a) kind of operations involved;
- (b) number of aircraft used; and
- (c) area of operation.

(4) An Air Operator Certificate holder shall comply with management personnel requirements as specified in the Fifth Schedule.

(5) The individuals who serve in the positions required or approved under this section or anyone in a position to exercise control over operations conducted under the Air Operator Certificate shall—

- (a) be qualified through training, experience, and expertise; and
- (b) discharge their duties to meet applicable legal requirements and to maintain safe operations;
- (c) have an understanding of the following materials with respect to their Air Operator Certificate holder's operation—
 - (i) Civil Aviation regulations;
 - (ii) aviation safety standards and safe operating practices;
 - (iii) the Air Operator Certificate holder's operations specifications;
 - (iv) all appropriate maintenance and airworthiness requirements; and
 - (v) the operations manuals required under this Part.

(6) An Air Operator Certificate holder shall—

- (a) state in the operations manual the duties, responsibilities and authority of personnel required under subsection (2);
- (b) list in the operations manual the names and business addresses of the individuals assigned to those positions; and
- (c) notify the Authority in writing, within 10 days of any vacancy in any position listed under subsection (2).

(7) No Air Operator Certificate holder shall effect any changes without the prior written approval of the Authority with respect to —

- (a) the accountable manager; and
- (b) any of the management personnel specified in subsection (2).

(8) Any Air Operator Certificate holder who effects any managerial changes of the post holders listed in subsection (2) without the Authority approval may have his or her operations suspended or revoked.

Quality system

11(1) An Air Operator Certificate holder shall—

- (a) establish a quality system acceptable to the Authority; and
- (b) designate a head of quality to monitor compliance with, and adequacy of procedures required to ensure safe operational practices and airworthiness of aircraft.

(2) An air operator shall ensure that—

- (a) compliance monitoring includes a feedback system to the Accountable Manager to ensure corrective action as necessary;
- (b) the quality system includes a quality assurance programme that contains procedures designed to verify that all operations are being conducted in accordance with all applicable requirements, standards and procedures.

(3) An Air Operator Certificate holder shall describe the quality system in relevant documentation as specified in the Sixth Schedule.

(4) Where the Air Operator Certificate holder is also an approved maintenance organisation, the Air Operator Certificate holder's quality management system may be combined with the requirements of an approved maintenance organisation and submitted for acceptance to the Authority.

Submission and revision of operations manual

12. (1) An Air Operator Certificate holder shall develop an operations manual acceptable to the Authority.

(2) A manual required under subsection (1) shall—

- (a) include instructions and information necessary to allow the personnel concerned to perform their duties and responsibilities with a high degree of safety;
- (b) be in a form that is—
 - (i) easy to revise; and
 - (ii) contains a system which allows personnel to determine the current revision status of each manual;
- (c) have a date of the last revision on each page concerned;
- (d) not be contrary to any applicable regulations and the Air Operator Certificate holder's operations specifications; and
- (e) include a reference to the applicable Civil Aviation regulations.

(3) No person shall use any operations manual that is not approved by the Authority.

(4) An Air Operator Certificate holder shall submit proposed amendments to the Authority for approval at least 30 days prior to the date of intended implementation.

(5) Any person who uses a manual or policy that is not approved may have his or her Air Operator Certificate suspended or revoked.

Retention of Records

13. (1) An Air Operator Certificate holder shall maintain records under this section in a manner acceptable to the Authority.

(2) An operator shall maintain fuel records to enable the Authority to ascertain that, for each flight, an aircraft carried a sufficient amount of usable fuel to complete the planned flight safely and to allow for deviations from the planned operation.

(3) An operator shall maintain oil records to enable the Authority to ascertain that trends for oil consumption are such that an aeroplane has sufficient oil to complete each flight.

(4) An Air Operator Certificate holder shall retain the following records for the period specified in the Seventh Schedule—

- (a) flight and duty records;
- (b) flight crew records;
- (c) other Air Operator Certificate holder personnel records for which a training program is required;
- (d) fuel and oil records;
- (e) maintenance of the aircraft records;
- (f) operational flight plan;
- (g) Flight Preparation forms listed below —
 - (i) completed load manifests;
 - (ii) mass and balance records;
 - (iii) dispatch releases;
 - (iv) flight plans;
 - (v) passenger manifests; and
 - (vi) weather reports;

- (h) aircraft technical logbook;
- (i) flight recorder records;
- (j) quality system records;
- (k) dangerous goods transport document;
- (l) dangerous goods acceptance checklist;
- (m) records on cosmic and solar radiation dosage; and
- (n) other records as may be required by the Authority.

(5) An Air Operator Certificate holder shall maintain the information for the records identified under subsection (4) (b) and (c) in sufficient detail to determine whether the employee meets the experience and qualification for his or her duties.

(6) The operator shall ensure that current records under subsection (4) (b) and (c) detail the qualifications and training of all its employees, including—

- (a) contract employees involved in the operational control, flight operations, ground operations and maintenance of the air operator; and
- (b) those employees performing crew member, flight operations officer or flight dispatch duties.

(7) An authorised person shall have power to inspect and copy any of the records referred to in this section.

Indoctrination and recurrent curriculum

14. (1) No Air Operator Certificate holder's employee shall perform or serve in the air operator certificate holder's company unless the person or the employee has completed—

- (a) the company indoctrination curriculum approved by the Authority; and
- (b) the recurrent training appropriate to the operation.

(2) The indoctrination training referred to in subsection (1) shall—

- (a) be appropriate to that person or employee's duties and responsibilities;
- (b) include training in knowledge and skills related to human performance, including co-ordination with other Air Operator Certificate personnel.

(3) Any operator who uses an employee in commercial air operations without undergoing indoctrination training and recurrent training may have his or her operations suspended or revoked or pay a fine as specified in Civil Aviation (general procedures and enforcement) Regulations.

Flight safety document system

15. An Air Operator Certificate holder shall establish a flight safety document system approved by the Authority as specified in the Eighth Schedule for the use and guidance of operational personnel.

Safety Management System

16. (1) An Air Operator Certificate holder shall establish and maintain a Safety Management System acceptable to the Authority in accordance with Civil Aviation (Safety Management) Regulations. The safety management system shall include—

- (a) identification of safety hazards;
- (b) remedial action necessary to maintain an acceptable level of safety is implemented;
- (c) continuous monitoring and regular assessment of the safety level achieved;
- (d) continuous improvement to the overall level of safety; and
- (e) lines of safety accountability throughout the operator's organisation, including direct senior management accountability for safety.

(2) The Air Operator Certificate holder's Safety Management System shall include a flight safety documents system.

SUB PART IV
Aircraft

Authorised aircraft

17. (1) No person shall operate any specific type of aircraft in commercial air transport unless the Authority has completed its initial certification, which includes acceptance of the type certificate issued by the State of design.

(2) No person shall operate additional or replacement aircraft of any type unless the Authority has, for each aircraft, completed an evaluation process for inclusion in the Air Operator Certificate holder's operations specifications.

Dry leasing of foreign registered aircraft

18.(1) No person shall dry lease a foreign registered aircraft unless there is in existence a current agreement between the Authority and the State of Registry that, while the aircraft is operated by a Zimbabwe air operator certificate holder—

- (a) the airworthiness regulations of the State of Registry shall apply; or
- (b) if the State of Registry agrees to transfer some or all of the responsibility for operations and airworthiness to the Authority under Article 83 bis to the Chicago Convention, the Zimbabwe applicable regulations shall apply to the extent agreed upon by the Authority and the State of Registry; and
- (c) there is an agreement between the Authority and the operator that the Authority shall have free and uninterrupted access to the aircraft at any place and time for the purposes of safety inspections and surveillance.

(2) Any person who refuses any authorised person such access may have his or her Air Operator Certificate suspended.

(3) The oversight responsibilities in respect of a dry lease-in of a foreign registered aircraft may be fully or partially transferred in terms of Article 83bis Agreement referred to in subsection (1) (b) from the appropriate authority of the State of Registry to the Authority.

(4) Subject to such conditions as it may determine, the Authority may grant approval for the lease agreement if satisfied that—

- (a) the aircraft to be leased-in is type-certificated in accordance with the requirements prescribed in the applicable airworthiness regulations;
- (b) the aircraft to be leased-in will be maintained in accordance with an approved maintenance schedule and current manufacturer's maintenance manual;
- (c) the aircraft to be leased-in will be operated under the operating certificate held by the lessee and the lessee will not operate the air service concerned contrary to any provision of the Act;
- (d) for a foreign-registered aircraft, —
 - (i) the transfer of responsibilities, as contemplated in subsection (3), has been effected;
 - (ii) the appropriate authority of the State of Registry is in a position to carry out its oversight responsibilities effectively;
 - (iii) the duration of the dry lease-in is for a period not exceeding 12 consecutive calendar months in any 24-months period calculated from the commencement date of the lease; and
 - (iv) the number of foreign registered aircraft leased by the operator constitutes not more than half the number of aircraft listed on that operator's operating certificate.

(5) When the conditions, contemplated in subsection (4)(d), are not met, the aircraft to be dry leased-in must be registered in Zimbabwe as prescribed in the applicable aircraft registration Regulations, and—

- (a) the aircraft shall be subject to the airworthiness certification, maintenance, and inspection procedures prescribed by the Regulations in respect of the Zimbabwe registered aircraft;
- (b) the lessee shall be responsible for custody of the aircraft and control of all operations and airworthiness and maintenance of the aircraft.

(6) The Authority shall not approve the dry lease agreement unless the conditions of approval referred to in subsection (4) are made part of the lease agreement, and in particular specify the responsibilities of the parties involved in respect of—

- (a) airworthiness of the aircraft and performance of maintenance;
- (b) signing the maintenance release;

- (c) flight and cabin crew member certification;
- (d) crew member training, competency and currency;
- (e) scheduling of crew members;
- (f) dispatch and flight-following; and
- (g) insurance arrangements.

(7) The Authority shall not approve a dry lease agreement between Zimbabwe operators unless arrangements concerning the party's respective responsibilities in respect of the airworthiness of the aircraft are included in the lease agreement.

(8) Any person who operates an aircraft without the authority required in this Part shall be guilty of an offence and liable to a fine not exceeding level fourteen or to imprisonment for a period not exceeding five years, or to both such fine and such imprisonment.

Wet and Damp leasing

19. (1) No Air Operator Certificate holder shall conduct wet-lease operations on behalf of another air operator except in accordance with—

- (a) this Part;
- (b) the applicable laws of the State in which the operation occurs; and
- (c) the restrictions that may be imposed by the Authority.

(2) No Air Operator Certificate holder shall allow another entity or air operator to conduct wet-lease operations on its behalf unless—

- (a) that air operator holds an Air Operator Certificate or its equivalent from a Contracting State that authorises those operations; and
- (b) the Aircraft Operator Certificate holder advises the Authority of such operations and provides a copy of the Air Operator Certificate under which the operation is to be conducted;
- (c) the aircraft has been type-certificated by an appropriate authority;
- (d) the aircraft holds a valid certificate of airworthiness or similar document issued by an appropriate authority;
- (e) the aircraft is maintained and operated in accordance with safety standards at least equivalent to the safety standards referred to in this Part; and
- (f) the aircraft will be operated in terms of the operating certificate or similar document held by the lessor provided that, if the operator concerned is a foreign operator, the appropriate authority of the State of the Operator and the Authority may enter into an Article 83bis Agreement in terms of which it is agreed that the aircraft shall—
 - (i) be operated in terms of the operating certificate of the Zimbabwean lessee; and
 - (ii) certain specified oversight responsibilities be transferred to the Authority;
- (g) that operation is approved by the Authority.

(3) Any person who conducts wet-lease operations on behalf of another air operator or allows another entity or air operator to conduct wet-lease operations on its behalf contrary to provisions of subsections (1) and (2) shall have his or her Air Operator Certificate suspended or revoked.

(4) Each Aircraft Operator Certificate holder shall provide the Authority with a copy of the wet lease agreement to be executed.

(5) The Authority will determine which party to a wet lease agreement has operational control considering the extent and control of certain operational functions such as —

- (a) initiating and terminating flights;
- (b) maintenance and servicing of aircraft;
- (c) scheduling crewmembers;
- (d) paying crewmembers; and
- (e) training crewmembers.

(6) Each Aircraft Operator Certificate holder engaged in a wet leasing arrangement shall amend its operations specifications to contain the following information—

- (a) the names of the parties to the agreement and the duration of the agreement;
- (b) the make, model, and series of each aircraft involved in the agreement;
- (c) the kind of operation;

- (d) the expiration date of the lease agreement;
 - (e) a statement specifying the party deemed to have operational control; and
 - (f) any other item, condition, or limitation the Authority determines necessary.
- (7) The duration of the lease agreement concerned, in respect of foreign-registered aircraft, shall be limited to a maximum period of six consecutive calendar months in any 12-months period calculated from the date on which the Authority approves the lease.
- (8) The lessee shall—
- (a) satisfy the Authority that the safety standards of the lessor are not less than the applicable safety standards referred to in this Part; and
 - (b) ensure that any law applicable to the aircraft to be wet leased-in, and the maintenance or operation thereof, is complied with.
- (9) The total number of wet leased-in aircraft, either foreign or Zimbabwean, may not constitute more than half the number of aircraft listed on the operating certificate of the operator.
- (10) The Authority shall not approve the lease agreement between the lessor and the lessee unless the conditions of approval are part of the lease agreement.
- (11) If an agreement, contemplated in subsection (2) (f), has been concluded, such agreement shall be formally registered with the Council of the International Civil Aviation organisation and the appropriate authority of any third State affected shall be notified.
- (12) When an aircraft is damp leased with only a partial crew (whether flight or cabin crew) the provisions of this section and section 25 applies with the necessary changes in respect of the crew provided as part of the lease.
- (13) The cabin or flight crew members provided by the lessee for the damp leasing operation shall undergo the Standard Operating Procedures (SOP) training of the lessor prior to the commencement of any commercial air transport operation.

Aircraft interchange

20. (1) No Air Operator Certificate holder shall interchange aircraft with another Air Operator Certificate holder without the approval of the Authority.
- (2) Any person who contravenes subsection (1) shall be guilty of an offence and liable to a fine not exceeding level fourteen or to imprisonment for a period not exceeding five years, or to both such fine and such imprisonment.
- (3) Each Aircraft Operator Certificate holder, before operating under an interchange, shall show that —
- (a) the procedures for the interchange operation conform with safe operating practices;
 - (b) required crew members and flight operations officers meet approved training requirements for the aircraft and equipment to be used and are familiar with the communications and dispatch procedures to be used;
 - (c) maintenance personnel meet training requirements for the aircraft and equipment, and are familiar with the maintenance procedures to be used;
 - (d) flight crew members and flight operations officers meet appropriate route and airport qualifications;
 - (e) the aircraft to be operated are essentially similar to the aircraft of the Aircraft Operator Certificate holder with whom the interchange is affected; and
 - (f) the arrangement of flight instruments and controls that are critical to safety are essentially similar, unless the authority determines that the Aircraft Operator Certificate holder has adequate training programs to ensure that any potentially hazardous dissimilarities are safely overcome by flight crew familiarization.
- (4) Each Aircraft Operator Certificate holder conducting an interchange agreement shall include the pertinent provisions and procedures of the agreement in its manuals.
- (5) The Aircraft Operator Certificate holders shall apply for amendment of their operations specifications to reflect the interchange agreement.
- (6) The Air Operator Certificate holder shall comply with the applicable regulations of the State of Registry of an aircraft involved in an interchange agreement while it has operational control of that aircraft.

Demonstration flights

21. (1) No Air Operator Certificate holder shall operate an aircraft type in commercial air transport unless he or she first conducts satisfactory demonstration flights to the Authority in that aircraft type.

(2) No Air Operator Certificate holder shall operate an aircraft in a designated special area, or using a specialised navigation system, unless it has conducted a demonstration flight to the satisfaction of the Authority.

(3) Demonstration flights required under subsection (1) and (2) shall be conducted in accordance with the relevant civil aviation regulations applicable to the type of operation and aircraft type used.

(4) The Air Operator Certificate holder shall comply with all the requirements for demonstration flights provided in the Eleventh Schedule.

(5) The Authority may waive or reduce the number of demonstration flights if the Air Operator Certificate holder —

- (a) operates a similar aircraft type or variant; or
- (b) conducts a similar operation.

SUB PART VI

Air Operator Certificate Flight Operations Management

Ground handling training programs

22. (1) The ground handling training program for an individual shall be determined by the nature of the duties carried out.

(2) The training referred to in subsection (1) shall include the following—

- (a) dangerous goods;
- (b) security awareness;
- (c) ramp safety;
- (d) load control;
- (e) airside driving;
- (f) push back and towing;
- (g) cargo handling;
- (h) passenger handling and passport checks; and
- (i) Safety Management systems.

Aircraft operating manual

23. (1) An Air Operator Certificate holder or applicant shall submit proposed aircraft operating manuals for each type and variant of aircraft operated, containing the normal, abnormal, and emergency procedures relating to the operation of the aircraft for approval by the Authority.

(2) An Aircraft Operating Manual shall be based upon the aircraft manufacturer's data for the specific aircraft type and variant operated by the Air Operator Certificate holder and shall include—

- (a) specific operating parameters; and
- (b) details of the aircraft systems; and
- (c) the check lists to be used.

(3) The design of the Aircraft Operations manual shall observe human factor principles.

(4) The Operator shall issue Aircraft Operating Manual to the flight crew members and persons assigned operational control functions to each aircraft operated by the Air Operator Certificate holder.

(5) An operator shall compile standard operating procedures (SOPs) for each aircraft type being operated and make them available during flight time to all flight crew members assigned to the aircraft and each flight crew member shall operate the aircraft in accordance with such procedures.

(6) The operator shall provide such portions of the standard operating procedures to the operator's employees or agents if required in the performance of their duties.

(7) The operator shall ensure that each flight crew member has access to the standard operating procedures during flight time and that such standard operating procedures are current.

(8) The operator shall prepare the standard operating procedures as a stand-alone document as part of the manual system or include them in an aircraft operating manual.

(9) The operator may provide the standard operating procedures or aircraft operating manual in an electronic format:

Provided that a means of accessing the information during flight time has also been made available to any crew member who may have need to access the information therein.

(10) The Aircraft Operating Manual shall conform to the outline set out in the Fourteenth Schedule.

Designation of pilot-in-command

24. The Air Operator Certificate holder shall, for each commercial air transport operation, designate in writing one pilot as the pilot-in-command.

Required Cabin crew members and their assignment of emergency duties

25.(1) An operator shall comply with the minimum number of cabin crew required for each type of aircraft, based on seating capacity, in order to effect a safe and expeditious evacuation of the aircraft, and the necessary functions to be performed in an emergency or a situation requiring emergency evacuation.

(2) The pilot-in-command shall ensure that the minimum number of required cabin crew members is on board for passenger-carrying flights.

(3) Each certificate holder shall provide at least the following flight attendants for each passenger-carrying aircraft when passengers are on board—

(a) one flight attendant for aircraft having a maximum payload capacity of more than 7,500 pounds and having a seating capacity of more than 19 but less than 51 passengers;

(b) two flight attendants for aircraft having a seating capacity of more than 50 but less than 101 passengers;

(c) two flight attendants plus one additional flight attendant for each unit (or part of a unit) of 50 passenger seats above a seating capacity of 100 passengers for aircraft having a seating capacity of more than 100 passengers.

(4) If, in conducting an emergency evacuation demonstration, the operator uses more flight attendants than is required for the maximum seating capacity of the aircraft used in the demonstration, he or she may not, thereafter, take off that aircraft—

(a) in its maximum seating capacity configuration with fewer flight attendants than the number used during the emergency evacuation demonstration; or

(b) in any reduced seating capacity configuration with fewer flight attendants than the number required by paragraph (a) for that seating capacity plus the number of flight attendants used during the emergency evacuation demonstration that were in excess of those required in paragraph (a).

(5) During take-off and landing, flight attendants required by this section shall be located as near as practicable to required floor level exits and shall be uniformly distributed throughout the aircraft in order to provide the most effective egress of passengers in event of an emergency evacuation.

(6) During taxing, flight attendants required by this section must remain at their duty stations with safety belts and shoulder harnesses fastened except when performing duties related to the safety of the aircraft and its occupants.

(7) When passengers are on board a parked aircraft, the minimum number of flight attendants shall be one-half of that required for the flight operation, but never less than one cabin crew member or another person qualified in the emergency evacuation procedures for the aircraft.

Carriage of special situation passengers

26. No air operator certificate holder shall allow the transportation of special situation passenger except—

(a) in accordance with the provisions specified in the Twenty Second Schedule; and

(b) with the knowledge and concurrence of the pilot-in-command.

Crew member checking and standardisation programme

27. (1) An Air Operator Certificate holder shall have a programme of checking and standardisation of crew members to address the Air Operator Certificate holder's unique fleet differences and compliance method.

(2) An Air Operator Certificate holder shall check pilots' proficiency on those manoeuvres and procedures that are specified by the Authority for pilot proficiency checks, which shall include emergency procedures and, where applicable, instrument flight rules.

(3) The standardisation program referred to in subsection (1) shall be approved by the Authority.

Cockpit check procedure

28.(1) An Air Operator Certificate holder shall issue to the flight crews and make available on each aircraft, the checklist procedures, approved by the Authority, appropriate for the type and variant of aircraft.

(2) An Air Operator Certificate holder shall ensure that the procedures referred to in subsection (1) include each item necessary for flight crew members to check for safety before starting engines, taking off, or landing, and for engine and systems abnormalities and emergencies.

(3) An Air Operator Certificate holder shall ensure that the checklist procedures are designed so that a flight crew member does not need to rely upon his or her memory for items to be checked.

(4) An Air Operator Certificate holder shall make the procedures referred to in subsection (1) readily useable in the cockpit of each aircraft.

(5) A flight crew member shall be required to follow the procedures referred to in subsection (1) when operating the aircraft.

(6) A flight crew member who operates an aircraft without referencing to a checklist, where required, may have his or her licence suspended or revoked.

Performance planning

29. (1) An Air Operator Certificate holder shall provide for the use of the flight crew members and persons assigned operational control functions during the performance of their duties, an aircraft operating manual (AOM) acceptable to the Authority.

(2) The AOM shall be specific to the aircraft type and variant and shall contain adequate performance information to accurately calculate the performance in all normal phases of flight operation.

Performance Data Control System

30.(1) An Air Operator Certificate holder shall have a system approved by the Authority for obtaining, maintaining and distributing to appropriate personnel current performance data for each aircraft, route and airport that it uses.

(2) The system approved by the Authority under subsection (1) shall provide current obstacle data for departure and arrival performance calculations.

Mass and balance data control system

31. (1) An Air Operator Certificate holder shall ensure that during any phase of operation, the loading, mass and centre of gravity of the aircraft complies with the limitations specified in the approved Aircraft Flight Manual or the Aircraft Operations Manual, whichever is more restrictive.

(2) An Air Operator Certificate holder shall establish the mass and the centre of gravity of any aircraft by actual weighing prior to initial entry into service and thereafter at intervals of three years.

(3) The accumulated effects of modifications and repairs on the mass and balance shall be accounted for and properly documented and aeroplanes shall be reweighed if the effect of modifications on the mass and balance is not accurately known.

(4) An Air Operator Certificate holder shall determine the mass of—

(a) all operating items and crew members included in the aircraft dry operating mass by weighing or by using standard masses so that the influence of their position on the aircraft's centre of gravity can be determined; and

(b) the fuel load by using the actual density or, if not known, the density calculated in accordance with a method specified in the Aircraft Operations Manual.

(5) An Air Operator Certificate holder shall have a system approved by the Authority for obtaining, maintaining and distributing to appropriate personnel current information regarding the mass and balance of each aircraft operated.

(6) An Air Operator Certificate holder shall establish the mass of the traffic load, including any ballast, by actual weighing or determine the mass of the traffic load in accordance with standard passenger and baggage masses as specified in the Fifteenth Schedule.

Ground handling manual

32. (1) An Air Operator Certificate holder shall provide for the use of the flight crew members, ground handling personnel and persons assigned operational control functions during the performance of their duties, a ground handling manual acceptable to the Authority.

(2) The manual referred to under subsection (1) shall be specific to the aircraft type and variant and shall contain the procedures and limitations for servicing and loading of the aircraft.

Cabin crew member manual

33. (1) An Air Operator Certificate holder shall issue to the cabin crew members and provide to passenger agents during the performance of their duties, a cabin crew manual approved by the Authority.

(2) The cabin crew manual shall contain those operational policies and procedures applicable to cabin crew members and the carriage of passengers.

(3) An Air Operator Certificate holder shall issue to the cabin crew members, a manual specific to the aircraft type and variant which contains the details of their normal, abnormal and emergency procedures and the location and operation of emergency equipment.

Passenger briefing cards

34. (1) An Air Operator Certificate holder shall carry on each passenger carrying aircraft, in convenient locations for the use by each passenger, printed passenger briefing cards in the English language supplementing the oral briefing and containing—

- (a) diagrams and methods of operating the emergency exits;
- (b) other instructions necessary for use of the emergency equipment, and
- (c) information regarding the restrictions and requirements associated with sitting in an exit seat row as specified in the Sixteenth Schedule.

(2) An Air Operator Certificate holder shall ensure that each card contains, in pictographic form, information that is pertinent only to the type and variant of aircraft used for that flight.

(3) The passenger briefing card referred in subsection (1) shall form part of the operations manual approved by the Authority and shall be located at the passenger's seat at all times.

Aeronautical data control system

35. (1) An Air Operator Certificate holder shall make available to flight crew and operational personnel at any aerodrome authorised in its AOC and corresponding operations specifications, pre flight aeronautical information essential for the safety, regularity and efficiency of air navigation.

(2) The system of provision of information referred to in subsection (1) shall be approved by the Authority. (3) The specific aerodrome information to be contained in the aeronautical data control system shall be as specified in the Seventeenth Schedule.

Route guide

36. (1) An Air Operator Certificate holder shall provide a route guide for the use of the flight crew members and persons assigned operational control functions during the performance of their duties.

(2) The route guide shall contain information relating to—

- (a) communication facilities;
- (b) navigation aids;
- (c) Aerodromes;
- (d) instrument approaches;
- (e) instrument arrivals and instrument departures as applicable for the operation;
- (f) the minimum flight altitudes for each route to be flown;
- (g) aerodrome operating minima for each of the aerodromes that are likely to be used as aerodromes of intended landing or as alternate aerodromes;
- (h) the increase of aerodrome operating minima in case of degradation of approach or aerodrome facilities;
- (i) take-off runway length requirements for dry, wet and contaminated conditions, including those dictated by system failures which affect the—
 - (i) take-off distance;
 - (ii) take-off and climb limitations;
 - (iii) en-route climb limitations;
- (iii) approach and landing limitations;

- (v) landing runway length requirements for dry, wet and contaminated conditions, including systems failures which affect the landing distance;
 - (vi) supplementary information, such as tyre speed limitations; and
 - (j) such other information as the operator may deem necessary for the proper conduct of flight operations;
- (3) The route guide shall be a component of the air operator certificate holder's operations manual.

Weather reporting sources

37. (1) An Air Operator Certificate holder shall submit sources for the weather reports and forecasts used for decisions regarding flight preparation, routing and terminal operations for approval by the Authority.
- (2) An Air Operator Certificate holder shall have an approved system for obtaining forecasts and reports of adverse weather phenomena that may affect safety of flight on each route to be flown and the airport to be used.
- (3) The sources of weather reports referred to under subsection (1) shall be as specified in the Eighteenth Schedule.

De-icing and anti-icing programme

38. (1) An Air Operator Certificate holder planning to operate an aircraft in conditions where frost, ice, or snow may reasonably be expected shall—
- (a) use only aircraft adequately equipped for such conditions; and
 - (b) ensure flight crew is adequately trained for such conditions; and
 - (c) have an approved ground de-icing and anti-icing programme.
- (2) An Air Operator Certificate holder shall follow the de-icing and anti-icing requirements specified in the Nineteenth Schedule.

Routes and areas of operation

39. (1) An Air Operator Certificate holder may conduct operations only along such routes and within such areas for which —
- (a) ground facilities and services, including meteorological services are provided and are adequate for the planned operation;
 - (b) the performance of the aircraft intended to be used is adequate to comply with minimum flight altitude requirements;
 - (c) the equipment of the aircraft intended to be used meets the minimum requirements for the planned operation;
 - (d) appropriate and current maps and charts are available;
 - (e) if two-engine aircraft are used, adequate airports are available within the time or distance limitations; and
 - (f) if single-engine aircraft are used, surfaces are available which permit a safe forced landing to be executed.
- (2) A person shall not conduct commercial air transport operations on any route or area of operation unless those operations are in accordance with any restrictions that may be imposed by the Authority.

Navigational Accuracy

- 40.(1) An Air Operator Certificate holder shall ensure, for each proposed route or area, that the navigational systems and facilities are capable of navigating the aircraft —
- (a) within the degree of accuracy required for air traffic control; and
 - (b) to the airports in the operational flight plan within the degree of accuracy necessary for the operation involved.
- (2) In situations without adequate navigation systems reference, the Authority may authorise day visual flight rules operations that can be conducted safely by pilotage because of the characteristics of the terrain.
- (3)The Authority shall list in the Air Operator Certificate holder's operations specifications, non-visual ground aids required for approval of routes outside of controlled airspace except for those navigational aids required for routes to alternate airports.
- (4) Non-visual ground aids referred to under subsection (3) shall not be required for night visual flight rules operations on routes that the air operator certificate holder shows have reliably lighted landmarks which are adequate for safe operation.

(5) Operations on route segments where the use of performance-based navigation, celestial navigation or other specialised means of navigation is required shall be approved by the Authority.

Reportable occurrences

41 (1) The following persons shall report to the Authority any event which constitutes a reportable occurrence—

- (a) an operator;
- (b) pilot-in-command;
- (c) any person carrying on the business of manufacturing, repairing, overhauling, modifying an aircraft, equipment or any part of the aircraft;
- (d) any person who signs an airworthiness report or a certificate of release to service in respect of an aircraft, equipment or part of the aircraft;
- (e) an air traffic controller;;
- (f) a flight information service officer;
- (g) an aerodrome certificate holder;
- (h) operations manager;
- (i) safety manager;
- (j) flight dispatcher;
- (k) any person responsible for flight checking or inspection of air navigation facilities; or
- (l) any person who performs a function in respect of ground handling of an aircraft.

(2) The reportable occurrences referred to in subsection (1) are—

- (a) any incident relating to a defect or malfunction in an aircraft, part or equipment of the aircraft which endangered or which will endanger occupants of that aircraft or any other person if not corrected; or
- (b) any defect or malfunction of any facility on the ground used or intended to be used in the operation of the aircraft such that if the defect or malfunction is not corrected it is likely to endanger the aircraft or any of its occupants.

(3) An occurrence report is intended for the prevention of accidents and incidents and shall not be used to attribute blame or liability to any person for any accident or incident unless—

- (a) the occurrence was caused by negligence; or
- (b) there was wilful violation of the law.

(4) A reportable occurrence shall not be a substitute for the requirement to report an accident or incident under the Civil Aviation (Accident and Incident Investigations) Regulations published in statutory instrument 78 of 2018.

SUB PART VII

Air Operator Certificate Maintenance Requirements

Approval or acceptance of Air Operator Certificate maintenance systems

42. No Air Operator Certificate holder shall operate an aircraft unless it is maintained and released to service by an approved maintenance organisation that is—

- (a) approved by the State of Registry;
- (b) is acceptable to the Authority.

Maintenance procedures and quality assurance system

43. (1) An Air operator shall ensure that the maintenance organisation has established procedures, acceptable to the Authority, which ensure good maintenance practices and compliance with all relevant requirements.

(2) An Air operator shall ensure that the maintenance organisation complies with subsection (1) by—

- (a) establishing an independent quality assurance system to monitor compliance and adequacy of procedures;
or
- (b) providing a system of inspection to ensure that all maintenance is properly performed.

Maintenance control manual

44.(1) An operator shall provide for the use and guidance of maintenance and operational personnel concerned, a maintenance control manual approved by the Authority and acceptable to the state of registry where Zimbabwe is not the state of registry.

(2) An Air Operator Certificate holder shall provide to the Authority, and to the State of Registry of the aircraft, if different from the Authority, the Air Operator Certificate holder's maintenance control manual and its subsequent amendments.

(3) An Air Operator Certificate holder shall ensure that the maintenance control manual referred to in subsection (2) has incorporated such mandatory material as the Authority or the State of Registry may require, for the use and guidance of maintenance and operational personnel concerned, containing details of the organisation's structure including —

- (a) duties and responsibilities of the accountable manager in relation to maintenance;
- (b) duties and responsibilities of the designated person responsible for the maintenance system as required by the Authority;
- (c) procedures to be followed to satisfy the maintenance responsibility, except where the air operator certificate holder is an approved maintenance organisation;
- (d) procedures for the reporting of failures, malfunctions and defects to the Authority, State of Registry and the State of Design.

(4) An operator shall immediately notify the Authority with a written follow-up report as soon as possible but no later than 72 hours of discovery of—

- (a) primary structural failure
- (b) control system failure,
- (c) fire in the aircraft,
- (d) engine structure failure, or
- (e) any other condition considered as an imminent hazard to safety.

(5) An Air Operator Certificate holder shall ensure that the maintenance control manual used for his or her aircraft shall contain the following information—

- (a) a description of the administrative agreements between the Air Operator Certificate holder and the approved maintenance organisation; or
- (b) where maintenance is based on a system other than that of an approved maintenance organisation—
 - (i) a description of the maintenance procedures; and
 - (ii) the procedures for completing and signing a maintenance release; and
 - (iii) a description of the procedures to ensure each aircraft is in an airworthy condition;
- (c) a description of the procedures to ensure the emergency equipment for each flight is serviceable;
- (d) the names and duties of the person or persons required to ensure that all maintenance is carried out in accordance with the maintenance control manual;
- (e) a reference to the maintenance programme required by the Authority;
- (f) a description of the methods for completion and retention of the operator's maintenance records required by the Authority;
- (g) a description of the procedures for monitoring, assessing and reporting maintenance and operational experience for all aircraft above 5 700 kg maximum certificated take-off mass;
- (h) a description of the procedures for obtaining and assessing continued airworthiness information and implementing any resulting actions considered necessary by the State of Registry for all aircraft above 5 700 kg maximum certificated take-off mass, from the organisation responsible for the type design;
- (i) a description of the procedures for implementing mandatory continuing airworthiness as required by the Authority;
- (j) a description of the procedures 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;
- (k) a description of aircraft types and models to which the manual applies;

- (l) a description of the procedures for ensuring that unserviceabilities affecting airworthiness are recorded and rectified; and
- (m) a description of the procedures for advising the State of Registry of significant in-service occurrences.
- (6) No person shall provide for use of personnel in commercial air transport any Maintenance Control Manual or portion of this manual which has not been reviewed and approved for the Air Operator Certificate holder by the Authority.
- (7) 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 are furnished promptly to all organisations or persons to whom the manual has been issued.
 - (c) the design of the manual observes human factor principles.

Aircraft technical log

45. (1) An Air Operator Certificate holder shall carry an aircraft technical log book on board the aircraft all the time.
- (2) The technical log book referred to under subsection (1) shall contain—
- (i) a journey records section; and
 - (ii) an aircraft maintenance record section.
- (3) An Air Operator Certificate holder shall use an aircraft technical log containing the following information within the sections referred to in subsection (2) for each flight —
- (a) aircraft nationality and registration;
 - (b) date;
 - (c) names of crew members;
 - (d) duty assignments of crew members;
 - (e) place of departure;
 - (f) place of arrival;
 - (g) time of departure;
 - (h) time of arrival;
 - (i) hours of flight;
 - (j) nature of flight (private, aerial work, scheduled, non-scheduled);
 - (k) incidents or observations, if any; and
 - (l) signature of person in charge.
- (4) Entries in the journey logbook shall be made in ink or indelible pencil.
- (5) A Completed journey log books shall be retained to provide a continuous record of the last two years of operations.

Continuing airworthiness information

- 46.(1) An Air Operator Certificate holder who operates an aircraft above 5700 kg maximum certificated take-off mass shall—
- (a) monitor and assess maintenance and operational experience with respect to continuing airworthiness; and
 - (b) obtain and assess continuing airworthiness information and recommendations from the organisation responsible for the type design; and
 - (c) implement actions considered necessary in accordance with a procedure acceptable to the State of Registry.
- (2) Where a continuing airworthiness safety issue is associated with a modification of a Zimbabwe registered aircraft, the Air Operator shall transmit the continuing airworthiness information to the organisation responsible for the design of the aircraft.
- (3) An Air Operator Certificate holder who operates an aircraft below 5700 kg maximum certificated take-off mass shall monitor and assess maintenance and operational experience with respect to continuing airworthiness as specified by the Authority.

Maintenance and operational experience

- 47.(1) An Air Operator Certificate holder who operates an aeroplane over 5700 kg and helicopter over 3175 maximum certificated take-off mass shall—
- (a) monitor and assess maintenance and operational experience with respect to continuing airworthiness; and

(b) transmit information on faults, malfunctions, defects and other occurrences that cause or may cause adverse effects on the continuing airworthiness of the aircraft to the organisation responsible for the type design of the aircraft.

(2) An Air operator Certificate holders and approved maintenance organisations shall report the service information to the Authority for—

- (a) aeroplanes over 5700 kg maximum certificated take-off mass; or
- (b) helicopters over 3 175 kg maximum certificated take-off mass.

Maintenance management

48.(1) When the State of Registry accepts an equivalent system of maintenance, the person signing the maintenance release shall be licensed in accordance with this Part and any other applicable laws.

(2) If the Air Operator Certificate holder is not an approved maintenance organisation, the Air Operator Certificate holder shall meet the maintenance requirements and responsibilities specified in this SUB PART by using —

- (a) an equivalent system of maintenance approved or accepted by the Authority; or
- (b) through an arrangement with an approved maintenance organisation with a written maintenance contract agreed between the air operator certificate holder and the contracted approved maintenance organisation detailing the required maintenance functions and defining the support of the quality functions approved or accepted by the Authority.

(3) An Air Operator Certificate holder shall nominate a person or group of persons, acceptable to the Authority to ensure—

- (a) that all maintenance is carried out in accordance with the maintenance control manual;
- (b) that the maintenance of its aeroplanes is performed in accordance with the maintenance programme; and
- (c) the functioning of the quality.

(4) The maintenance organisation shall employ the necessary personnel to plan, perform, supervise, inspect and release the work to be performed.

(5) The competence of maintenance personnel shall be established in accordance with the maintenance procedure manual approved or accepted by the Authority.

(6) The person signing a maintenance release shall be qualified in accordance with the Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019 and Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018.

(7) The maintenance organisation shall ensure that all maintenance personnel receive initial and continuation training appropriate to their assigned tasks and responsibilities.

(8) The training programme established by the maintenance organisation shall include training in knowledge and skills related to human performance, including coordination with other maintenance personnel and flight crew.

(9) An Air Operator Certificate holder shall provide suitable office accommodation at appropriate locations for the personnel specified in subsections (4) and (5).

(10) An Air Operator Certificate holder shall establish a safety program for the maintenance of aircraft that is acceptable to the Authority.

Maintenance Records

49. (1) An Air Operator Certificate holder shall ensure that a system has been established to keep, in a form acceptable to the Authority, the following records to show that all requirements for the signing of a maintenance release have been met—

- (a) the total time in service (hours, calendar time and cycles, as appropriate) of the aircraft and all life-limited components;
- (b) the current status of compliance with all mandatory continuing airworthiness information;
- (c) appropriate details of modifications and repairs;
- (d) the time in service (hours, calendar time and cycles, as appropriate) since last overhaul of the aircraft or its components subject to mandatory overhaul life;
- (e) the current aircraft status of compliance with the maintenance programme.
- (f) the detailed maintenance records to show that all requirements for the signing of a maintenance release have been met.

(2) The records required by subsection (1) shall be kept for a minimum period of one year after the signing of the maintenance release.

(3) An Air Operator Certificate holder shall ensure that—

- (a) items under subsection (1) (a) to (e) shall be kept for a minimum of 90 days after the unit to which they refer has been permanently withdrawn from service;
- (b) items under subsection (1) (f) shall be kept for a minimum of one year after the unit to which it refers to has been permanently withdrawn from service;
- (c) other records shall be kept for the periods specified in the Seventh Schedule after the signing of the maintenance release.

(4) An Air Operator Certificate holder shall ensure that in the event of temporary change of operator, the records specified in subsection (1) shall be made available to the new operator.

(5) An Air Operator Certificate holder shall ensure that when an aircraft is permanently transferred from one operator to another operator, the records specified in subsection (1) are also transferred.

Aircraft technical log entries—maintenance record section

50.(1) An Air Operator Certificate holder shall use an aircraft technical log which includes an aircraft maintenance record section containing the following information for each aircraft—

- (a) information about each previous flight necessary to ensure continued flight safety;
- (b) the current aircraft maintenance release;
- (c) the current inspection status of the aircraft, to include inspections due to be performed on an established schedule and inspections that are due to be performed that are not on an established schedule, except that the Authority may agree to the maintenance statement being kept elsewhere;
- (d) the current maintenance status of the aircraft, to include maintenance due to be performed on an established schedule and maintenance that is due to be performed that is not on an established schedule except that the Authority may agree to the maintenance statement being kept elsewhere; and
- (e) all deferred defects that affect the operation of the aircraft.

(2) The aircraft technical log and any subsequent amendments shall be approved by the Authority.

(3) Any person who takes action in the case of a reported or observed failure or malfunction of an aircraft or aeronautical product that is critical to the safety of flight shall make, or have made, a record of that action in the maintenance section of the aircraft technical log.

(4) An Air Operator Certificate holder shall have a procedure for keeping adequate copies of required records to be carried aboard, in a place readily accessible to each flight crew member and shall put that procedure in the Air Operator Certificate holder's operations manual.

(5) The records required to be kept under this Part shall be retained for the periods specified in the Seventh Schedule.

Release to service

51 (1) No Air Operator Certificate holder shall operate an aircraft unless it has a maintenance release, as follows —

- (a) it is maintained and released to service by an organisation approved in accordance with the relevant Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018 which shall be acceptable to the State of Registry;
- (b) an Air Operator Certificate holder using an approved maintenance organisation shall not operate an aircraft after release unless a maintenance release has been prepared in accordance with the Air Operator Certificate holder's maintenance control manual procedures and a logbook entry in the maintenance records section of the aircraft technical log has been made;
- (c) an Air Operator Certificate holder not using an approved maintenance organisation shall not operate an aircraft after release under paragraph (a) unless a logbook entry in the maintenance records section of the aircraft technical log is prepared or caused to be prepared by an individual appropriately licensed and rated by the Authority and the maintenance release certificate is made in accordance with the Air Operator Certificate holder's maintenance control manual procedures; and

(d) the Air Operator Certificate holder shall ensure that the pilot -in-command of the aircraft has reviewed the maintenance section of the aircraft technical log and determined that any maintenance performed has been appropriately documented.

(2) A maintenance release shall be completed and signed to certify that the maintenance work performed has been completed satisfactorily and in accordance with approved data and the procedures described in the maintenance organisation's procedures manual.

(3) A maintenance release shall contain a certification including—

- (a) basic details of the maintenance performed;
- (b) the date such maintenance was completed;
- (c) when applicable, the identity of the approved maintenance organization;
- (d) the identity of the authorised person or persons signing the release;
- (e) the expiry date of the release where a calendar limit exists;
- (f) the hours at which the release will expire;
- (g) if the maintenance program makes provision for such, the hours or time by which the inspection may be extended.

(3) No Air Operator Certificate holder shall operate an aircraft unless the pilot-in-command is in possession of a valid maintenance release to indicate that any maintenance, preventative maintenance or inspections performed on the aircraft have been satisfactorily performed and appropriately documented.

Modification and repairs

52. (1) All modifications and repairs shall comply with the airworthiness requirements acceptable to the State of Registry.

(2) An operator shall establish procedures to ensure that—

- (a) the substantiating data supporting compliance with the airworthiness requirements are retained; and
- (b) in the case of a major repair or major modification, the work is done in accordance with the technical data approved by the Authority.

(3) An Air Operator Certificate holder may be authorised to perform maintenance, preventive maintenance, and modifications of any aircraft, airframe, aircraft engine, propeller, appliance, component, or part thereof, under the Air Operator Certificate:

Provided that —

- (a) it is performed under a maintenance system, acceptable to the State of Registry, that is equivalent to that of an approved maintenance organisation established in accordance with the Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018; and
- (b) it is performed in accordance with the air operator certificate holder's operations specifications.

(4) An Air Operator Certificate holder using a maintenance system acceptable to the State of Registry and equivalent to that of an approved maintenance organisation that wishes to approve for return to service major repairs or major modifications to an aircraft registered in Zimbabwe shall use a current and valid licensed aircraft maintenance technician with an airframe and power plant rating.

(5) An Air Operator Certificate holder shall, promptly upon its completion, prepare a report of each major modification or major repair of an airframe, aircraft engine, propeller, or appliance of an aircraft that it operates.

(6) An Air Operator Certificate holder shall submit a copy of each report of a major modification to the Authority, and shall keep a copy of each report of a major repair available for inspection.

(7) The Authority issuing an approval for the design of a modification, of a repair or of a replacement part shall do so on the basis of satisfactory evidence that the aircraft is in compliance with airworthiness requirements used for the issuance of the Type Certificate, its amendments or later requirements when determined by the Authority.

(8) A major modification or repair to an aircraft shall be accomplished in accordance with design data approved by, or on behalf of, or accepted by the State of registry, such that the modification or repair design conforms to applicable standards of airworthiness.

(9) Any person or organisation repairing aircraft or component shall assess the damage and repair it against the published repair data of the organisation responsible for the type design and the actions shall be taken if the damage is

beyond the limits or outside the scope of such data in which case the repair shall be performed, requesting technical support from the type certificate holder and final approval by the Authority of the particular repair data.

(10) A supplemental type certificate shall be issued for all major design changes to type certificated products when the change is not so extensive as to require a new type certificate.

(11) A minor modification shall be performed in accordance with the airworthiness requirements of the organisation responsible for the type design.

(12) The approval procedures for a modification to an aeronautical product are intended to permit the Authority to agree that the applicant has considered the appropriate airworthiness and environmental standards and demonstrate that the design change complies with those standards.

Aircraft maintenance programme

53. (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.

(2) The maintenance program shall—

(a) be based on maintenance program information made available by—

(i) the state of design; or

(ii) the organisation responsible for the type design, and any additional applicable experience

(b) be designed to observe Human Factor principles during its application.

(3) The maintenance organisation shall promptly avail copies of all amendments to the maintenance programme to—

(a) all organisations or persons to whom the maintenance programme has been issued; and

(b) the State of Registry for approval.

(4) The maintenance program shall be approved by the Authority and the approval shall be conditioned upon prior approval by—

(a) the State of Registry; or

(b) where appropriate, upon the Air Operator Certificate holder complying with recommendations provided by the State of Registry.

(5) Where the Authority determines that a reliability programme is necessary the Air Operator Certificate holder shall provide such procedures and information in its maintenance control manual.

(6) The maintenance organisation shall ensure that repetitive maintenance tasks that are specified in mandatory intervals as a condition of approval of the type design shall be identified as such.

(7) An Air Operator Certificate holder shall have an inspection programme and a programme covering other maintenance, preventive maintenance, and modifications to ensure that—

(a) maintenance, preventive maintenance, and modifications performed by it, or by other persons, are performed in accordance with the air operator certificate holder's maintenance control manual; and

(b) each aircraft released to service is airworthy and has been properly maintained for operation.

(8) The Authority may amend any specifications issued to an Air Operator Certificate holder to permit deviation from those provisions of this regulation that would prevent the return to service and use of airframe components, power plants, appliances, and spare parts because those items have been maintained, altered, or inspected by persons employed outside Zimbabwe who do not hold a Zimbabwe technician's licence.

(9) An Air Operator Certificate holder who is granted authority under the deviation specified in subsection (8) shall provide for surveillance of facilities and practices to ensure that all work is performed and accomplished in accordance with the Air Operator Certificate holder's maintenance control manual.

(10) An Air Operator Certificate holder shall ensure that each aircraft is maintained in accordance with the Air Operator Certificate holder's approved maintenance programme.

(11) The maintenance programme referred to in subsection (1) shall include—

(a) a description of the aircraft and components and recommended methods for the accomplishment of maintenance tasks and such information shall include guidance on defect diagnosis;

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

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

- (d) when applicable, condition monitoring and reliability programme descriptions for aircraft systems, components and engines.
- (12) The maintenance programme shall identify—
- (a) maintenance tasks and frequencies that have been specified as mandatory by the state of design in approval of the type design of that aircraft;
 - (b) certification maintenance requirements;
 - (c) if applicable, the continuing structural integrity programme; and
 - (d) when applicable, condition monitoring and reliability programme descriptions for aircraft systems, components and engines.

Reliability program

- 54 (1) The maintenance organisation shall be required to have a reliability program, to ensure that the aircraft maintenance program tasks are effective and their periodicity is adequate, where —
- (a) the aircraft maintenance programme is based upon MSG-3 logic;
 - (b) the aircraft maintenance programme includes condition monitored components;
 - (c) aircraft maintenance programme does not include overhaul time periods for all significant system components, the failure of which could be a hazard to the aircraft safety; or
 - (d) when specified by the manufacturer's Maintenance Planning Document (MPD) or Maintenance Review Board (MRB).
- (2) A reliability program referred to in subsection (1) shall—
- (a) not be developed for aircraft not considered as large aeroplane or that contain overhaul time periods for all significant aircraft system components.
 - (b) provide an appropriate means of monitoring the effectiveness of the maintenance programme and where a reliability program is required and it results in the —
 - (i) escalation or deletion of a maintenance task; or
 - (ii) de-escalation or addition of a maintenance task, the Air Operator Certificate holder shall carry out the necessary tasks to ensure amendment of the maintenance programme with the approval of the Authority.

Authority to perform and approve maintenance, preventive maintenance, and modifications

55.(1) An Air Operator Certificate holder which is not approved as an approved maintenance organisation may perform and approve maintenance, preventive maintenance, or modifications of any aircraft, airframe, aircraft engine, propeller, appliance, or component, or a part thereof for return to service, if approved in the operations specifications, as provided in its maintenance programme and maintenance control manual.

(2) An Air Operator Certificate holder may make arrangements with an approved maintenance organisation, appropriately rated, for the performance of maintenance, preventive maintenance, or modifications of any aircraft, airframe, aircraft engine, propeller, appliance, or component, or part thereof as provided in its maintenance programme and maintenance control manual.

(3) An Air Operator Certificate holder that is not approved as an approved maintenance organisation shall use an individual appropriately licensed and rated by the Authority to approve maintenance, preventive maintenance, or modifications of any aircraft, airframe, aircraft engine, propeller, or appliance for return to service after performing or supervising in accordance with technical data approved by the Authority.

License requirements for Aircraft maintenance engineer (AME) - Air Operator Certificate holder using equivalent system

56. (1) Any person who is directly in charge of maintenance, preventive maintenance, or modification, of any aircraft, airframe, aircraft engine, propeller, appliance, or component, or part thereof and each person performing required inspections and approving for return to service the maintenance performed, shall be a technician or repair specialist appropriately licensed or approved by the Authority.

(2) Any person who is directly in charge shall be—

- (a) on site but need not physically observe and direct each worker constantly; and

- (b) available for consultation and decision on matters requiring instruction or decision from higher authority than that of the persons performing the work.
- (3) Any person referred to in subsection (1) shall be a person assigned to a position in which he or she is responsible for the workshop or station that performs maintenance, preventive maintenance, modifications or other functions affecting aircraft airworthiness.

SUB PART VIII

Air Operator Certificate Holder's Security Management

Security Requirements

57. An Air Operator Certificate holder shall ensure that all appropriate personnel are familiar, and comply with, the relevant requirements of the national aviation security programmes of the Authority.

Security training programmes

58.(1) Each Air Operator Certificate holder shall establish, maintain and conduct approved training programmes which enable the operator's personnel to take appropriate action to prevent acts of unlawful interference—

- (a) such as sabotage; or
 - (b) unlawful seizure of aircraft; and
- to minimise the consequences of such events should they occur.
- (2) As a minimum, the security training programme referred to in subsection (1) shall include —
- (a) determination of the seriousness of any occurrence;
 - (b) crew communication and coordination;
 - (c) appropriate self-defence responses;
 - (d) use of non-lethal protective devices assigned to crew members;
 - (e) live situational training exercises regarding various threat conditions;
 - (f) flight deck procedures to protect the aircraft;
 - (g) aircraft search procedures and guidance on least-risk bomb locations where practicable; and
 - (h) crew preventative measures and techniques in relation to passengers, baggage, cargo, mail, equipment, stores and supplies intended for carriage on an aircraft.

Reporting acts of unlawful interference

59. Following an act of unlawful interference on board an aircraft the pilot-in-command or, in his or her absence, the air operator certificate holder shall submit, without delay, a report of such an act to the—

- (a) designated local authority; and
- (b) Authority in the State of the operator

Aircraft search procedure checklist

60. (1) An Air Operator Certificate holder shall ensure that all aircraft carry a checklist of the procedures to be followed for that type aircraft in searching for concealed weapons, explosives, or other dangerous devices.

(2) An air operator shall have a specialised means of attenuating and directing bomb blast provided for use at the least-risk bomb location.

(3) Where an operator accepts the carriage of weapons removed from passengers, he or she shall ensure that the aircraft has provision for stowing such weapons in a place so that they are inaccessible to any person during flight time.

SUB PART X

FLIGHT AND DUTY TIME LIMITATIONS AND REST REQUIREMENTS: FLIGHT CREW MEMBERS

Fitness for duty

61. (1) No crew member shall accept assignment to a flight duty period if the crew member is unfit to perform his or her assigned duties.

(2) No Air Operator Certificate holder shall assign and no crew member shall accept assignment to a flight duty period if the crew member has reported for a flight duty period too fatigued to safely perform his or her assigned duties.

(3) No air operator certificate holder shall permit a crew member to commence or continue a flight duty period if the crew member has reported him or herself too fatigued or unfit to perform the assigned flight duty.

(4) As part of the dispatch or flight release, as applicable, each crew member shall affirmatively state that he or she is fit for duty prior to commencing flight.

Fatigue risk management system

62. (1) An air operator certificate holder shall develop a Fatigue Risk Management System that is in compliance with this part.

(2) An air operator certificate holder who does not have a Fatigue Risk Management System shall be guided by the provisions of this Sub Part.

(3) The Fatigue Risk Management System must include—

- (a) a fatigue risk management policy;
- (b) an education and awareness training program;
- (c) a fatigue reporting system;
- (d) a system for monitoring flight crew fatigue;
- (e) an incident reporting process; and
- (f) a performance evaluation.

(4) Where the operator implements a Fatigue Risk Management System to manage fatigue-related safety risks, he or she shall, as a minimum—

- (a) incorporate scientific principles and knowledge within the Fatigue Risk Management System; and
- (b) identify fatigue-related safety hazards and the resulting risks on an ongoing basis; and
- (c) ensure that remedial actions, necessary to effectively mitigate the risks associated with the hazards, are implemented promptly; and
- (d) provide for continuous monitoring and regular assessment of the mitigation of fatigue risks achieved by such actions; and
- (e) provide for continuous improvement to the overall performance of the Fatigue Risk Management System; and
- (f) maintain records for all its flight and cabin crew members of flight time, flight duty periods, duty periods, and rest periods for a period of time specified by the Authority.

(5) The Authority has established prescriptive flight time, flight duty period and duty period limitations and rest period requirements as outlined in Part II (Air Operator Certificate).

(6) The prescriptive limits referred to in subsection (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.

(7) An operator, 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 limits established in this Part.

(8) An 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.

(9) In approving an operator's flight time, flight duty period and duty period limitations and rest period requirements, 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 this Part 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 limitations.
- (6) No operator shall implement non prescriptive fatigue management methods.

Fatigue Management- Helicopter

63. (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 requirements as prescribed by the Authority.

(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 this Part 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.

Maintenance, Implementation and Monitoring of Fatigue Risk Management

64. (1) When an operator is implementing Fatigue Risk Management the operator shall maintain a Fatigue Risk Management as an integral part of its safety management system.

(2) The established, implemented and maintained Fatigue Risk Management shall provide for continuous improvement to the overall performance of the Fatigue Risk Management and shall include—

- (a) description of the philosophy and principles of the operator with regard to Fatigue Risk Management, referred to as the Fatigue Risk Management policy;
- (b) documentation of the Fatigue Risk Management processes, including a process for making personnel aware of their responsibilities and the procedure for amending this documentation;
- (c) scientific principles and knowledge;
- (d) a hazard identification and risk assessment process that allows managing the operational risk of the operator arising from crew member fatigue on a continuous basis;

- (e) a risk mitigation process that provides for remedial actions to be implemented promptly, which are necessary to effectively mitigate the ope
 - (f) rator's risk(s) arising from crew member fatigue and for continuous monitoring and regular assessment of the mitigation of fatigue risks achieved by such actions;
 - (g) Fatigue Risk Management safety assurance processes;
 - (h) Fatigue Risk Management promotion processes.
 - (i) The Fatigue Risk Management shall correspond to the flight time specification scheme, the size of the operator and the nature and complexity of its activities, taking into account the hazards and associated risks inherent in those activities and the applicable flight time specification scheme.
- (3) The operator shall take mitigating actions when the Fatigue Risk Management safety assurance process shows that the required safety performance is not maintained.

Fatigue Risk Management Policy

65. The operator's Fatigue Risk Management policy shall—
- (a) identify all the elements of Fatigue Risk Management;
 - (b) define to which operations Fatigue Risk Management applies;
 - (c) reflect the shared responsibility of management, flight and cabin crew, and other involved personnel;
 - (d) state the safety objectives of Fatigue Risk Management;
 - (e) be signed by the accountable manager;
 - (f) be communicated, with visible endorsement, to all the relevant areas and levels of the organisation;
 - (g) declare management commitment to effective safety reporting;
 - (h) declare management commitment to the provision of adequate resources for Fatigue Risk Management;
 - (i) declare management commitment to continuous improvement of Fatigue Risk Management
 - (j) require that clear lines of accountability for management, flight and cabin crew, and all other involved personnel are identified; and
 - (k) require periodic reviews to ensure it remains relevant and appropriate.

Fatigue Risk Management documentation

66. (1) An air operator's Fatigue Risk Management System documentation shall describe and records—
- (a) Fatigue Risk Management System policy and objectives;
 - (b) Fatigue Risk Management System processes and procedures;
 - (c) accountabilities, responsibilities and authorities for these processes and procedures;
 - (d) mechanisms for ongoing involvement of management, flight and cabin crew members, and all other involved personnel;
 - (e) Fatigue Risk Management System training programmes, training requirements and attendance records;
 - (f) scheduled and actual flight times, duty periods and rest periods with significant deviations and reasons for deviations noted; and
 - (g) Fatigue Risk Management System outputs including findings from collected data, recommendations, and actions taken.
- (2) An operator shall maintain records for all its flight and cabin crew members of flight time, flight duty periods, duty periods, and rest periods for a period specified in the Twenty-First Schedule after the crew member becomes inactive.

Identification of hazards

- 67 (1) An operator shall develop and maintain the following fundamental and documented processes for fatigue hazard identification—
- (a) predictive; and
 - (b) pro-active; and
 - (c) reactive.
- (2) The predictive process shall identify fatigue hazards by examining crew scheduling and taking into account factors known to affect sleep and fatigue and their effects on performance.
- (3) The methods of examination referred to in subsection (2) may include but are not limited to—

- (a) operator or industry operational experience and data collected on similar types of operations;
 - (b) evidence-based scheduling practices; and
 - (c) bio-mathematical models.
- (4) The proactive process shall identify fatigue hazards within current flight operations.
- (5) Methods of examination referred to in subsection (3) may include but are not limited to—
- (a) self-reporting of fatigue risks;
 - (b) crew fatigue surveys;
 - (c) relevant flight and cabin crew performance data;
 - (d) available safety databases and scientific studies; and
 - (e) analysis of planned versus actual time worked.
- (6) 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.
- (7) At a minimum, the reactive process referred to in subsection (6) may be triggered by any of the following—
- (a) fatigue reports;
 - (b) confidential reports;
 - (c) audit reports;
 - (d) incidents; and
 - (e) flight data analysis events.

Risk assessment

- 68(1) An 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 referred to in subsection (1) shall review identified hazards and link them to—
- (a) operational processes;
 - (b) their probability;
 - (c) possible consequences; and
 - (d) the effectiveness of existing safety barriers and controls.

Risk mitigation

69. An operator shall develop and implement risk mitigation procedures that—
- (a) select the appropriate mitigation strategies;
 - (b) implement the mitigation strategies; and
 - (c) monitor the strategies' implementation and effectiveness.

Fatigue Risk Management System safety assurance processes

- 70(1) The operator shall develop and maintain Fatigue Risk Management System safety assurance process to—
- (a) provide for continuous Fatigue Risk Management System performance monitoring, analysis of trends, and measurement to validate the effectiveness of the fatigue safety risk controls and the sources of data may include, but are not limited to—
 - (i) hazard reporting and investigations;
 - (ii) audit and surveys; and
 - (iii) reviews and fatigue studies;
 - (b) provide a formal process for the management of change which shall include but is not limited to—
 - (i) identification of changes in the operational environment that may affect Fatigue Risk Management System;
 - (ii) identification of changes within the organization that may affect Fatigue Risk Management System; and
 - iii) consideration of available tools which could be used to maintain or improve Fatigue Risk Management System performance prior to implementing changes;and
 - (c) provide for the continuous improvement of the Fatigue Risk Management System which shall include but not limited to—

- (i) the elimination 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;
- (ii) routine evaluations of facilities, equipment, documentation and procedures; and
- (d) the determination of the need to introduce new processes and procedures to mitigate emerging fatigue-related risks.

Fatigue Risk Management System promotion processes

71(1) The Fatigue Risk Management System promotion processes shall support the ongoing development of the Fatigue Risk Management System, the continuous improvement of its overall performance, and attainment of optimum safety levels.

- (2) The following shall be established and implemented by the operator as part of its Fatigue Risk Management System—
- (a) 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 Fatigue Risk Management System; and
 - (b) an effective Fatigue Risk Management System communication plan that—
 - (i) explains Fatigue Risk Management System policies, procedures and responsibilities to all relevant stakeholders; and
 - (ii) describes communication channels used to gather and disseminate Fatigue Risk System related information.

Fatigue education and Fatigue Management Training

72(1) Each certificate holder must develop and implement an education and awareness training program, approved by the Authority.

(2) The program referenced in section (1) must provide annual education and awareness training to all employees of the certificate holder responsible for administering the provisions of this rule including—

- (a) flightcrew members;
- (b) dispatchers;
- (c) individuals directly involved in the scheduling of flight crew members;
- (d) individuals directly involved in operational control; and
- (e) any employee providing direct management oversight of those areas.

(3) The fatigue education and awareness training program must be designed to increase awareness of—

- (a) fatigue;
 - (b) the effects of fatigue on pilots; and
 - (c) fatigue countermeasures
- (d) education and Training Program Review:

(4) Each certificate holder must update its fatigue education and awareness training program every two years and submit the update to the Authority for review and acceptance.

(5) The Authority shall review and accept or reject the update of the fatigue education and awareness training program submissions required by subsection (4) of this section not later than 3 months after the date of submission.

(5) The operator shall provide initial and recurrent fatigue management training to crew members, personnel responsible for preparation and maintenance of crew rosters and management personnel concerned.

(6) This training shall follow a training programme established by the operator and described in the operations manual.

Training syllabus fatigue management training

73 (1) The training syllabus shall—

- (a) cover the possible causes and effects of fatigue and fatigue countermeasure; and
- (b) be approved by the Authority.

(2) The training syllabus shall contain the following—

- (a) applicable regulatory requirements for flight, duty and rest;
- (b) the basics of fatigue including sleep fundamentals and the effects of disturbing the circadian rhythms;
- (c) the causes of fatigue, including medical conditions that may lead to fatigue;
- (d) the effect of fatigue on performance;

- (e) fatigue countermeasures;
- (f) the influence of lifestyle, including nutrition, exercise, and family life, on fatigue;
- (g) familiarity with sleep disorders and their possible treatments;
- (h) where applicable, the effects of long range operations and heavy short range schedules on individuals;
- (i) the effect of operating through and within multiple time zones; and
- (j) the crew member responsibility for ensuring adequate rest and fitness for flight duty.

Prescriptive flight time limitation

74. (1) No certificate holder may schedule and no flight crew member may accept an assignment or continue an assigned flight duty period if the total flight time—

- (a) Will exceed the limits specified in the Twenty-First Schedule if the operation is conducted with the minimum required flight crew;
- (b) Will exceed 13 hours if the operation is conducted with a 3-pilot flight crew;
- (c) Will exceed 17 hours if the operation is conducted with a 4-pilot flight crew.

(2) If unforeseen operational circumstances arise after take-off that are beyond the certificate holder's control, a flight crew member may exceed the maximum flight time specified in subsection (1) and the cumulative flight time limits in table B specified in the Twenty-First Schedule to the extent necessary to safely land the aircraft at the next destination airport or alternate, as appropriate.

(3) Each certificate holder must report to the Authority within 10 days any flight time that exceeded the maximum flight time limits permitted by this section or table B specified in the Twenty-First Schedule.

(4) The report referred to in subsection (3) must contain a description of the extended flight time limitation and the circumstances surrounding the need for the extension.

(5) The operator shall—

- (a) define reporting times appropriate to each individual operation taking into account the reporting times that allow sufficient time for ground duties;
- (b) establish procedures specifying how the pilot-in-command shall, in case of special circumstances which could lead to severe fatigue, and after consultation with the crew members concerned, reduce the actual flight duty period or increase the rest period or both in order to eliminate any detrimental effect on flight safety.

(6) The air operator shall ensure that time spent positioning at the behest of the operator is part of a flight duty period when this time immediately precedes a flight duty period in which that person participates as a flight crew member.

(7) The air operators shall recognise the responsibility of a flight crew member to refuse further flight duty when suffering from fatigue of such a nature as to adversely affect the safety of flight.

Flight duty period: Un-augmented operations.

75.(1) Except as provided for in section 127, no certificate holder may assign and no flight crew member may accept an assignment for an unaugmented flight operation if the scheduled flight duty period will exceed the limits in Table B contained in twenty-first schedule of this part.

(2) If the flight crew member is not acclimatised—

- (a) the maximum flight duty period in Table B in twenty-first schedule of this part is reduced by 30 minutes.
- (b) the applicable flight duty period is based on the local time in the time zone in which the flight crew member was last acclimatised.

Flight duty period: Split duty

76. For an unaugmented operation only, if a flight crew member is provided with a rest opportunity (an opportunity to sleep) in a suitable accommodation during his or her flight duty period, the time that the flight crew member spends in the suitable accommodation is not part of that flight crew member's flight duty period if all of the following conditions are met—

- (a) The rest opportunity is provided between the hours of 22:00 and 05:00 local time;
- (b) the time spent in the suitable accommodation is at least 3 hours, measured from the time that the Flight crew member reaches the suitable accommodation;

- (c) the rest opportunity is scheduled before the beginning of the flight duty period in which that rest opportunity is taken;
- (d) the rest opportunity that the flight crew member is actually provided may not be less than the rest opportunity that was scheduled;
- (e) the rest opportunity is not provided until the first segment of the flight duty period has been completed;
- (f) the combined time of the flight duty period and the rest opportunity provided in this section does not exceed 14 hours.

Flight duty period: Augmented flight crew.

77.(1) For flight operations conducted with an acclimated augmented flight crew, no certificate holder may assign and no flight crew member may accept an assignment if the scheduled flight duty period will exceed the limits specified in Table C contained in the twenty-first schedule of this part.

(2) If the flight crew member is not acclimated—

- (a) the maximum flight duty period in Table C contained in the Twenty-First Schedule of this part is reduced by 30 minutes;
- (b) the applicable flight duty period is based on the local time in the time zone in which the flight crew member was last acclimated.

(3) No certificate holder may assign and no flight crew member may accept an assignment under this section unless during the flight duty period—

- (a) two consecutive hours in the second half of the flight duty period are available for in-flight rest for the pilot flying the aircraft during landing;
- (b) ninety consecutive minutes are available for in-flight rest for the pilot performing monitoring duties during landing.

(4) No certificate holder may assign and no flight crew member may accept an assignment involving more than three flight segments under this section.

(5) At all times during flight, at least one flight crew member qualified in accordance with this Part must be at the flight controls.

Flight duty period extensions

78. (1) For augmented and unaugmented operations, if unforeseen operational circumstances arise prior to take-off—

- (a) the pilot in command and the certificate holder may extend the maximum flight duty period permitted in Tables B or C contained in the twenty-first schedule to up to 2 hours.
- (b) The pilot in command and the certificate holder may also extend the maximum combined flight duty period and reserve availability period limits specified in Section 130 (4) (c) and (d) of this part up to 2 hours.

(2) An extension in the flight duty period under subsection (1)(b) of more than 30 minutes may occur only once prior to receiving a rest period described in section 134 (2).

(3) A flight duty period cannot be extended under subsection (1) (b) if it causes a flight crew member to exceed the cumulative flight duty period limits specified in section 131(3).

(4) Each certificate holder must report to the Authority within 10 days any flight duty period that either exceeded the cumulative flight duty periods specified in section 131 (3) or exceeded maximum flight duty period permitted in Tables B or C specified in the twenty-first schedule of this part by more than 30 minutes.

(5) The report referred to in subsection (4) must contain the following—

- (a) a description of the extended flight duty period and the circumstances surrounding the need for the extension; and
- (b) if the circumstances giving rise to the extension were within the certificate holder's control, the corrective action(s) that the certificate holder intends to take to minimize the need for future extensions.

(6) Each certificate holder must implement the corrective action(s) reported in subsection (4) of this section within 30 days from the date of the extended flight duty period.

(7) For augmented and unaugmented operations, if unforeseen operational circumstances arise after take-off—

- (a) the pilot in command and the air operator certificate holder may extend maximum flight duty periods

specified in Tables B or C in the twenty-first schedule of this part to the extent necessary to safely land the aircraft at the next destination airport or alternate airport, as appropriate;

Provided that an extension of the flight duty period of more than 30 minutes may occur only once prior to receiving a rest period described in section 132 (2);

(b) an extension taken under subsection (9) of this section may exceed the cumulative flight duty period limits specified in section 131 (3);

(c) each certificate holder must report to the Authority within 10 days any flight duty period that exceeded the maximum flight duty period limits permitted by Tables B or C specified in the twenty-first schedule of this part by more than 30 minutes.

(8) The report referred to in subsection (7) (c) shall contain a description of the circumstances surrounding the affected flight duty period.

Reserve status

79(1) Unless specifically designated as standby or short-call reserve by the certificate holder, all reserve is considered long-call reserve.

(2) Any reserve that meets the definition of airport standby reserve must be designated as airport standby reserve.

(3) For airport standby reserve, all time spent in a reserve status is part of the flight crew member's flight duty period.

(4) In the case of a short call reserve—

(a) the reserve availability period may not exceed 14 hours;

(b) for a flight crew member who has completed a reserve availability period, no certificate holder may schedule and no flight crew member may accept an assignment of a reserve availability period unless the flight crew member receives the required rest in section 132 (5);

(c) for an unaugmented operation, the total number of hours a flight crew member may spend in a flight duty period and a reserve availability period may not exceed the lesser of the maximum applicable flight duty period in Table B specified in the twenty-first schedule plus 4 hours, or 16 hours, as measured from the beginning of the reserve availability period;

(d) for an augmented operation, the total number of hours a flight crew member may spend in a flight duty period and a reserve availability period may not exceed the flight duty period in Table C specified in the twenty-first schedule of this part plus 4 hours, as measured from the beginning of the reserve availability period.

(5) In the case of a long call reserve, if a certificate holder contacts a flight crew member to assign him or her to a flight duty period that will begin before and operate into the flight crew member's window of circadian low, the flight crew member must receive a 12 hour notice of report time from the certificate holder.

(6) A certificate holder may shift a reserve flight crew member's reserve status from long-call to short-call only if the flight crew member receives a rest period as provided in section 132(5).

Cumulative duty limitations

80.(1) The limitations of this section include all flying by flight crew members on behalf of any certificate holder.

(2) No certificate holder may schedule and no flight crew member may accept an assignment if the flight crew member's total flight time will exceed the following—

(a) 100 hours in any 672 consecutive hours; or

(b) 1,000 hours in any 365 consecutive calendar day period.

(3) No certificate holder may schedule and no flight crew member may accept an assignment if the flight crew member's total Flight Duty Period will exceed—

(a) 60 flight duty period hours in any 168 consecutive hours; or

(b) 190 flight duty period hours in any 672 consecutive hours.

Rest period

81. (1) No certificate holder may assign and no flight crew member may accept assignment to any reserve or duty with the certificate holder during any required rest period.

(2) Before beginning any reserve or flight duty period a flight crew member must be given at least 30 consecutive hours free from all duty within the past 168 consecutive hour period.

(3) If a flight crew member operating in a new time zone has received 36 consecutive hours of rest, that flight crew member is acclimatised and the rest period meets the requirements of subsection (2).

(4) If a flight crew member travels more than 60° longitude during a flight duty period or a series of flight duty periods that require him or her to be away from home base for more than 168 consecutive hours, the flight crew member must be given a minimum of 56 consecutive hours rest upon return to home base which must encompass three physiological nights' rest based on local time.

(5) No certificate holder may schedule and no flight crew member may accept an assignment for any reserve or flight duty period unless the flight crew member is given a rest period of at least 10 consecutive hours immediately before beginning the reserve or flight duty period measured from the time the flight crew member is released from duty.

(6) The 10 hour rest period referred to in subsection (5) must provide the flight crew member with a minimum of 8 uninterrupted hours of sleep opportunity.

(7) If a flight crew member determines that a rest period under subsection (5) will not provide eight uninterrupted hours of sleep opportunity, the flight crew member must notify the certificate holder and the flight crew member cannot report for the assigned flight duty period until he or she receives a rest period required.

(8) If a flight crew member engaged in deadhead transportation exceeds the applicable flight duty period in Table B specified in the twenty-first schedule the flight crew member must be given a rest period equal to the length of the deadhead transportation but not less than the required rest in subsection (5) of this section before beginning a flight duty period.

(9) The flight crew member is responsible for the way in which recovery from fatigue is achieved.

(10) The air operator shall ensure that suitable accommodation on the ground is available at places where rest periods are taken in order to allow effective recovery.

Consecutive night time operations.

82.(1) A certificate holder may schedule and a flight crew member may accept up to five consecutive flight duty periods that infringe on the window of circadian low if the certificate holder provides the flight crew member with an opportunity to rest in a suitable accommodation during each of the consecutive night time flight duty periods.

(2) The rest opportunity must be at least 2 hours, measured from the time that the flight crew member reaches the suitable accommodation, and must comply with the conditions specified in section 127 (a), (c), (d), and (e).

(3) Notwithstanding subsection (1) no certificate holder may schedule and no flight crew member may accept more than three consecutive flight duty periods that infringe on the window of circadian low.

(4) For purposes of this section, any split duty rest that is provided in accordance with section 127 counts as part of a flight duty period.

Emergency and government sponsored operations

83. (1) This section applies to operations conducted pursuant to contracts with the Zimbabwe Government and operations conducted pursuant to a deviation under section 129 that cannot otherwise be conducted under this part because of circumstances that could prevent flight crew members from being relieved by another crew or safely provided with the rest required under section 132 at the end of the applicable flight duty period.

(2) The pilot-in-command may determine that the maximum applicable flight duty period, flight time, or combined flight duty period or both and reserve availability period limits must be exceeded to the extent necessary to allow the flight crew to fly to the closest destination where they can safely be relieved from duty by another flight crew or can receive the requisite amount of rest prior to commencing their next flight duty period.

(3) A flight duty period may not be extended for an operation conducted pursuant to a contract with the Zimbabwe Government if it causes a flight crew member to exceed the—

(a) cumulative flight time limits in section 131 (2); and

(b) the cumulative flight duty period limits in section 131(3).

(4) The flight crew shall be given a rest period immediately after reaching the destination described in section (2) of this section equal to the length of the actual flight duty period or 24 hours, whichever is less.

(5) Each certificate holder must report—

(a) within 10 days any flight duty period that exceeded the maximum flight duty period permitted in Tables B or C specified in the twenty-first schedule, as applicable, by more than 30 minutes;
and

- (b) any flight time that exceeded the maximum flight time limits permitted in Table A specified in the twenty-first schedule of this part and section 125, as applicable; and
 - (c) any flight duty period or flight time that exceeded the cumulative limits in section 131.
- (6) The report must contain the following—
- (a) a description of the extended flight duty period and flight time limitation, and the circumstances surrounding the need for the extension; and
 - (b) if the circumstances giving rise to the extension were within the certificate holder's control, the corrective action that the certificate holder intends to take to minimize the need for future extensions.
- (7) Each certificate holder must implement the corrective action reported pursuant to paragraph subsection (6) (b) of this section within 30 days from the date of the extended flight duty period.

Operator Responsibilities

84(1) An operator shall—

- (a) ensure that flight duty periods are planned in a way that enables crew members to remain sufficiently free from fatigue so that they can operate to a satisfactory level of safety under all circumstances;
- (b) take into account the relationship between the frequency and pattern of flight duty periods and rest periods and give consideration to the cumulative effects of undertaking long duty hours combined with minimum rest periods;
- (c) allocate duty patterns which avoid practices that cause a serious disruption of an established sleep or work pattern, such as alternating day or night duties;
- (d) provide rest periods of sufficient time to enable crew members to overcome the effects of the previous duties and to be rested by the start of the following flight duty period;
- (e) plan recurrent extended recovery rest periods and notify crew members sufficiently in advance;
- (f) plan flight duties in order to be completed within the allowable flight duty period taking into account the time necessary for pre-flight duties, the sector and turnaround times;
- (g) change a schedule and/or crew arrangements if the actual operation exceeds the maximum flight duty period on more than 33 % of the flight duties in that schedule during a scheduled seasonal period;
- (h) establish, implement and maintain flight time specification schemes that are appropriate for the type of operation performed;
- (i) before being implemented, flight time specification schemes, including any related fatigue risk management where required, shall be approved by the authority;
- (j) collect data concerning the granted deviation or derogation and analyse that data using scientific principles with a view to assessing the effects of the deviation or derogation on aircrew fatigue within 2 years of the implementation of a deviation or derogation;
- (k) provide such analysis in the form of a report to the Authority;
- (l) not require a crew member to operate an aircraft if it is known or suspected that the crew member is fatigued to the extent that the safety of flight may be adversely affected;
- (m) consider the cumulative effects of undertaking long duty hours interspersed with minimum rest, and of avoiding rosters that result in the serious disruption of an established pattern of working and sleeping; and
- (n) plan for flights to be completed within the allowable flight duty period taking into account the time necessary for—
 - (i) pre-flight duties;
 - (ii) the flight and turn-around times;
 - (iii) and the nature of the operation.

Crew members' responsibilities

85(1) A crew member shall—

- (a) not operate an aeroplane when he or she knows that he or she is fatigued or feels unfit to the extent that the safety of flight may be adversely affected;
- (b) make best use of the facilities and opportunities that are provided for rest and for the consumption of meals; and

- (c) plan and use rest periods to ensure that he or she is fully rested.
- (2) It is the responsibility of the flight crew member to report for duty in an adequately rested condition.

Scheduling

- 86(1) When developing a workable roster the air operator shall ensure that—
- (a) there is a fair balance between the commercial needs and the capacity of individual crew members to work effectively;
 - (b) such a roster shall be developed in such a way that they distribute the amount of work evenly among those that are involved;
 - (c) he or she takes into account the time needed for pre-flight duties, taxiing, the flight-and turnaround times.
- (2) The operator's schedules shall allow for flights to be completed within the maximum permitted flight duty period.
- (3) The operator shall consider the following factors when planning duty periods—
- (a) the crew complement; and
 - (b) the allocation of work patterns which avoid undesirable practices such as alternating—
 - (i) day and night duties;
 - (ii) eastward-westward time zone transitions; or
 - (ii) westward- eastward time zone transitions;
 - (c) positioning of crew members so that a serious disruption of established sleep or work patterns may not occur;
 - (d) scheduling sufficient rest periods especially after long flights crossing many time zones; and
 - (e) preparation of duty rosters sufficiently in advance with planning of recurrent extended recovery rest periods and notification of the crew members well in advance to plan adequate pre-duty rest;
 - (f) the extent to which the various tasks to be performed can be divided among the flight crew members;
 - (g) where additional flight crew members are carried, they need to allow them to have recuperative rest—
 - (i) in a comfortable reclining seat; or
 - (ii) in a bunk, separated and screened from the flight deck and passengers, and reasonably free from disturbance,
 - (h) the number and direction of time zones crossed;
 - (i) the time at which a flight duty period is scheduled to begin;
 - (j) the number of planned or actual sectors within the flight duty period;
 - (k) the pattern of working and sleeping relative to the circadian rhythm, or 24-hour physiological cycle of the flight crew;
- (a) the scheduling of days off;
 - (b) the sequence of early reporting times and late releases from duty; and
 - (c) mixing early or late or night duties.

Preparation of rosters

87. The operator shall communicate to all crew members concerned duty rosters 14 days in advance to provide the opportunity for crew members to plan adequate rest.

Operational robustness of rosters

88(1) The operator shall ensure that the performance indicators for operational robustness of rosters should support him or her in the assessment of the stability of its rostering system.

(2) Performance indicators for operational robustness of rosters shall at least measure how often a rostered crew pairing for a duty period is achieved within the planned duration of that duty period.

Home Base

89(1) An operator shall assign a home base to each crew member which is a single airport location assigned with a high degree of permanence.

(2) In the case of a change of home base, the first recurrent extended recovery rest period prior to starting duty at the new home base is increased to 72 hours, including 3 local nights.

Travelling time

90. Crew members should consider making arrangements for temporary accommodation closer to their home base if the travelling time from their residence to their home base usually exceeds 90 minutes.

Records of Home Base, Flight Times, Duty and Rest Periods

91 (1) An operator shall maintain, for a period of 18 months, the following crew records for the purpose of ensuring that the flight crew members are performing at an adequate level of alertness for safe flight operations—

- (a) individual's records for each crew member including—
 - (i) flight times;
 - (ii) start, duration and end of each duty period and flight duty period;
 - (iii) rest periods and days free of all duties; and
 - (iv) assigned home base;
- (b) reports on extended flight duty periods and reduced rest periods.

(2) Upon request, the operator shall provide copies of individual records of flight times, duty periods and rest periods to—

- (a) the crew member concerned; and
- (b) to another operator, in relation to a crew member who is or becomes a crew member of the operator concerned.

(3) For crew members who undertake duties for more than one operator the records referred to in subsection (1) shall be kept for a period of 24 months.

Nutrition

92(1) During the flight duty period there shall be the opportunity for a meal and drink in order to avoid any detriment to a crew member's performance, especially when the flight duty period exceeds 6 hours.

- (2) An operator shall specify in its operations manual—
 - (a) how the crew member's nutrition during flight duty period is ensured; and
 - (b) the minimum duration of the meal opportunity, when a meal opportunity is provided, in particular
 - when the flight duty period encompasses the regular meal windows; and
 - (c) the time frames in which a regular meal should be consumed in order not to alter the human needs for nutrition without affecting the crew member's body rhythms.

Variation from flight duty period requirements

93. (1) An operator may request, a variation where operations planned cannot be managed within the limitations prescribed by the Authority.

- (2) In considering the variation referred to in subsection (1) the operator shall demonstrate to the Authority that—
 - (a) the variation provides an equivalent level of safety; and
 - (b) objections on grounds of safety are taken into account.

Unforeseen circumstances in actual flight operations – pilot-in-command's discretion

94(1) As general guidance when developing a pilot-in-command's discretion policy, the operator shall take into consideration the shared responsibility of management, flight and cabin crew in the case of unforeseen circumstances.

(2) The exercise of pilot-in-command's discretion shall be considered exceptional and shall be avoided at home base and company hubs where standby or reserve crew members should be available.

(3) Operators should assess on a regular basis the series of pairings where pilot-in-command's discretion has been exercised in order to be aware of possible inconsistencies in their rostering.

(4) The operator's policy on pilot-in-command's discretion shall state the safety objectives, especially in the case of an extended flight duty period or reduced rest and shall take due consideration of additional factors that might decrease a crew member's alertness levels such as—

- (a) Window of circadian low encroachment;
- (b) weather conditions;
- (c) complexity of the operation; or

- (d) airport environment;
- (e) aircraft malfunctions or specifications;
- (f) flight with training or supervisory duties;
- (g) increased number of sectors;
- (h) circadian disruption; and
- (i) individual conditions of affected crew members such as time since awake, sleep-related factor or workload.

SUB PART XIII
GENERAL

Airside driving

95. (1) No operator shall permit any person to drive any vehicle or equipment on the airside unless that person is—
- (a) a holder of a relevant national driver's licence; and
 - (b) appropriately trained; and
 - (c) approved by the Authority.
- (2) A person licenced to drive any equipment on the airside shall comply with instructions issued by—
- (a) an aerodrome controller; or
 - (b) an appropriate designated authority when on the apron.
- (3) Subject to subsection (1) (a) the training shall include—
- (a) aerodrome signs, markings and lights;
 - (b) radiotelephone operating procedures;
 - (c) terms and phrases used in aerodrome control including the phonetic spelling alphabet;
 - (d) rules of air traffic services as they relate to ground operations;
 - (e) airport rules and procedures; and
 - (f) specialist functions as required, for example, in rescue and firefighting.
 - (g) the geography of the aerodrome;
- (4) The airside driver shall be able to demonstrate competency, as appropriate, in—
- (a) the operation or use of vehicle transmit and receive equipment;
 - (b) understanding and complying with air traffic control and local procedures;
 - (c) vehicle navigation on the aerodrome; and
 - (d) special skills required for the particular function.
 - (e) operations in low visibility conditions

Substituted copy of lost certificate supersedes original which must be surrendered on recovery

96.(1) If a duplicate of a certificate has been issued in terms of this Part in substitution of an original certificate which has been lost or is believed to have been destroyed, the original certificate if still in existence shall thereon become void.

(2) If the original certificate which had become void as aforesaid comes into the possession or custody of any person who knows that a copy has been issued in substitution therefor, he or she shall forthwith deliver or transmit such certificate to the Authority.

Transitions and Savings

97. Notwithstanding any other provision of this Part, a person who at the commencement of this Part, is carrying out any acts, duties or operations affected by this Part shall, within 6 months from the date of commencement, or within such longer time that the Minister may, by notice in the *Gazette* prescribe, comply with the requirements of this Part or cease to carry out such acts, duties or operations.

Organisational and Management System for Operational Control

98. (1) An air operator shall establish an organizational and management system for the operational control of all flights in accordance with these regulations.

(2) The organizational and management system referred to in subsection (1) shall include:

- (a) the establishment of operational control system including;
 - (i) aircraft tracking and location of an aeroplane in distress; and
 - (ii) risk management (assessment and mitigations) when intending to operate over or near conflict zones;
 - (b) definition of responsibilities;
 - (c) definition of authorities;
 - (d) policies;
 - (e) processes;
 - (f) standards; and
 - (g) procedures.
- (3) The operator must establish the functions and responsibilities of flight crew and flight operations officers/flight dispatchers for the initiation, continuation, diversion; and termination of flights.
- (4) The method of control and supervision of flight operations must be approved for the Authority.

Flight Supervision and Monitoring System

99. (1) An Air Operator Certificate holder shall establish an aircraft tracking and monitoring capability to track aircraft throughout its area of operations approved by the Authority for proper dispatch and monitoring of the progress of the flights.

(2) The operator shall track the position of aircraft through automated reporting at least every 15 minutes under the following conditions—

(a) for the portions of the in-flight operations that is planned outside oceanic area—
(i) the aircraft has a maximum certificated take-off weight of over 5700kg and a seating capacity greater than 19; and

(ii) where an Air Traffic Services unit obtains aircraft position information at greater than 15 minutes intervals

(b) for the portions of the in-flight operations that is planned in an oceanic area—

(i) the aeroplane has a certified take-off weight of more than 27 000kg and a seating capacity greater than 19; and

(ii) where an Air Traffic Services unit obtains aircraft position information at greater than 15 minutes intervals.

(3) The operator shall establish procedures approved by the Authority for the retention of aircraft tracking data to assist Search and Rescue in determining the last known position of the aircraft.

(4) The dispatch and monitoring system shall have enough dispatch centres and flight operations or dispatch officers adequate for the operations to be conducted, located at points necessary to ensure adequate flight preparation, dispatch and in-flight contact with the flight operations.

(5) An Air Operator Certificate holder shall provide enough qualified flight operations officers at each dispatch centre to ensure proper operational control of each flight.

(6) An Air Operator Certificate holder shall follow the flight monitoring system specified under the Twentieth Schedule.

SUB PART XI
Foreign Air Operations

Foreign Operator Certificate

100. (1) In this Part—

“Foreign Operators’ Certificate” means a certificate issued by the Authority to a foreign air operator for purposes of conducting commercial operations in Zimbabwe.

(2) No foreign air operator may operate an aircraft in commercial air transportation operations in Zimbabwe without a Foreign Operators Certificate and associated operations specifications issued by the Authority in terms of these regulations.

(3) No foreign air operator shall perform any operations in Zimbabwe except in accordance with the Foreign Operator Certificate Operations Specifications issued in accordance with these regulations.

(4) A foreign Operator Certificate referred to in subsection (2) shall contain—

- (a) the operator's full name;
- (b) the date of issue and duration of the certificate;
- (c) the operator's principal business address and contact details for operational management;
- (d) the operator's business address and contact details in Zimbabwe;
- (e) a statement authorising the foreign air operator to operate in Zimbabwe; and
- (f) any operational limitations.

(5) In the event of any changes to the conditions and limitations of original foreign certificate, the foreign operator shall notify the Authority of such changes in writing within 30 days.

(6) The certificate referred to in subsection (2) ceases to have effect upon the expiry, suspension or revocation or any similar action of the air operator's certificate issued by a foreign state.

(7) The foreign air operator shall comply with the authorisations, conditions and limitations of its Air Operator Certificate operations specifications referred to in subsection (3) while operating in Zimbabwe.

(8) 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 the applicable standards specified in annex 6 and annex 19.

Foreign Operator Certificate validity

101. A Foreign Operator Certificate shall be valid for a period of two years and as long as the Air Operator Certificate issued by a foreign state remains valid or unless it is suspended or revoked by the Authority.

Lost Foreign Operators Certificate

102. A foreign air operator whose foreign Operator certificate is lost, destroyed or mutilated may, by application to the Authority, and on payment of the fees set out in the Twenty-third Schedule obtain a duplicate validation certificate.

Suspension of Foreign Air Operator Certificate

103. The Authority may suspend a Foreign Operator Certificate where—

- (a) there exists any condition or information that affects Zimbabwe's operations which is subject to verification;
- (b) the Air Operator Certificate is suspended by the Authority in the State of issue; or
- (c) the Authority establishes that the certificate holder has not met, or no longer meets the requirements of these regulations.

Revocation of Foreign Operator Certificate

104. A Foreign Operator Certificate shall be revoked by the Authority where—

- (a) the operator Country's Air Operator Certificate is revoked by the authority in the State of issue;
- (b) the aircraft is destroyed or is permanently withdrawn from use;
- (c) there is termination of a charter, lease or hire purchase agreement resulting in the change of ownership of the air operator;
- (d) the holder of the Foreign Operator Certificate has been convicted of an offence under the Civil Aviation Act [Chapter 13:16];
- (e) the foreign air operator surrenders the foreign operator certificate; or
- (f) the Authority establishes that the certificate holder has not met, or no longer meets the requirements of these regulations.

Surrender of certificate

105. The holder of an expired, suspended or revoked certificate shall surrender the certificate to the Authority within 14 days from its expiry, suspension or revocation.

Foreign Operator certificate exemption

106. (1) The Authority may exempt a foreign air operator engaged in commercial air transport operations under an air operator certificate issued by the State of the Operator from compliance with a provision of this Part in respect of the aircraft where—

- (a) the Authority is satisfied that under the foreign air operator's Air Operator Certificate and operations specifications it is required to comply with, an equivalent provision of no less a standard in respect of the safe operation of the aircraft than the provision of this Part from which an exemption is sought; and
- (b) the operation is not conducted frequently and on non-scheduled basis.

Application for Foreign Air Operator Certificate

107. (1) An application by a foreign air operator for approval to operate in Zimbabwe shall be made in a Form A set out in the Twenty-first Schedule and shall be accompanied by the following—

- (a) the Air Operator Certificate and associated operations specifications issued by the authority of the State of the operator;
- (b) a copy of a certificate of registration issued or validated by the State of Registry for the aircraft types proposed to be operated by the air operator in Zimbabwe;
- (c) a copy of a certificate of airworthiness issued or validated by the State of Registry for the aircraft types proposed to be operated by the air operator in Zimbabwe;
- (d) a copy of the licence or authorisation granted to the air operator by the appropriate authority of the State of the air operator to operate an air transport service in Zimbabwe;
- (e) a copy of the approval page for a minimum equipment list for each aircraft type intended to be operated by the air operator in Zimbabwe;
- (f) a copy of any equivalent Operations Specifications issued by the foreign authority for any specialised flight operations specifications requested by the foreign air operator for operations in Zimbabwe;
- (g) insurance certificate;
- (h) operational procedures and practices of the Operator; and
- (i) any other document the Authority considers necessary to ensure that the intended operations will be conducted safely.

(2) In the case of a wet-leased aircraft, the application shall be accompanied by a copy of the approval of the Authority of the State of the Operator, with identification of the operator that exercises operational control of the aircraft.

(3) An applicant under these regulations shall apply for the initial issue of a Foreign Air Operator Certificate at least thirty days before the date of commencement of intended operation.

Operations specifications

108. No foreign air operator may commence commercial air transport operations in Zimbabwe, until the Operations Specifications have been issued.

Conditions for operations specifications issuance

109. (1) The Authority may issue Foreign Operator Certificate and operations specifications upon the applicant successful Foreign Operator certificate application.

(2) The Authority shall issue a foreign operator certificate and operations specifications after verifying that—

- (a) the foreign operator has a valid Air Operator Certificate specified in subsection (3);
- (b) in the case of an operator providing scheduled international air services, there is an air services agreement, with a safety clause, allowing the foreign air operator to operate in Zimbabwe;
- (c) the foreign operator has had its Aircraft Operator Security Program approved by its Civil Aviation Authority for the operations intended;
- (d) the foreign operator meets the standards contained in applicable Annexes to the Chicago Convention for the operation to be conducted; and
- (e) the foreign operator has sufficient financial resources to conduct safe operations.

(3) 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 the applicable standards specified in Annexes 6 and 19.

Contents of foreign operations specifications

110. (1) Operations specifications issued under this section shall contain details of the following—

- (a) the purpose of issuance;
- (b) application and duration;
- (c) limitations to, or actions required by, the operator;
- (d) general provisions;
- (e) en-route authorisation and limitations;
- (f) aerodrome authorisations and limitations;
- (g) maintenance;
- (h) mass and balance;
- (i) interchange of equipment operations; and
- (j) aircraft leasing operations.

(2) Operations specifications issued shall specify which specific operations are authorised, prohibited, limited, or subject to certain conditions, in the interest of public safety.

Foreign Operator Certificate holder compliance requirements

111. (1) A foreign air operator shall, when conducting operations in Zimbabwe, ensure that it complies at all times with the requirements of—

- (a) its operations specifications;
- (b) its approved Aircraft Operator Security Program; and
- (c) the security requirements for aircraft operators operating in Zimbabwe.

(2) No foreign air operator may operate an aircraft in commercial air transportation operations in Zimbabwe contrary to the requirements of—

- (a) applicable paragraphs of this Part;
- (b) applicable standards contained in the Annexes to the Convention on International Civil Aviation for the operation to be conducted and
- (c) any other requirements that the Authority may specify.

(3) Any person who operates a foreign aircraft contrary to these requirements shall have his or her certificate suspended or revoked by the Authority.

Foreign operator inspections

112.(1) The Authority shall establish a programme with procedures for the surveillance of foreign operations in Zimbabwe by a foreign operator and for taking appropriate action when necessary in accordance with the relevant regulations for aircraft operations to preserve safety.

(2) A foreign air operators shall ensure that any person authorised by the Authority is permitted at any time, without prior notice, to board any foreign aircraft within Zimbabwe operated for commercial air transportation, to—

- (a) inspect the aircraft and crew documents and manuals on board the aircraft;
- (b) conduct an inspection of the aircraft; or
- (c) take appropriate action when necessary to preserve safety when the aircraft being inspected has sustained or it was ascertained that it sustained damage.

(3) A foreign air operator shall—

- (a) allow persons authorised by the Authority access to any documents, manuals and records which are related to flight operations and maintenance; and
- (b) produce such documents, manuals and records, when requested to do so by the Authority within a reasonable period of time.
- (c) meet and maintain the requirements established by the Authority.

(4) Any person who refuses an authorised person to board any aircraft operated for commercial air transportation to Zimbabwe for inspection purposes, may have his or her Foreign Operator Certificate suspended or revoked by the Authority.

Foreign air operator's aircraft technical log

113. A foreign air operator shall use an aircraft technical log system containing the following information for each aircraft—

- (a) information about each flight necessary to ensure continued flight safety; and
- (b) the current aircraft certificate of release to service; and
- (c) the current maintenance statement giving the aircraft maintenance status of what scheduled and out of phase maintenance is next due, unless the Authority agrees to the maintenance statement being kept elsewhere; and
- (d) all information on outstanding deferred defects that affect the operation of the aircraft; and
- (e) any necessary guidance instructions on maintenance support if applicable.

Air operator manuals, documents and flight crew licences to be carried

114. (1) A foreign air operator shall ensure that the following manuals, documents and licences are carried on board aircraft operating in Zimbabwe—

- (a) a certified true copy of the air operator certificate and a copy of the authorisations, conditions and limitations relevant to the aircraft type, issued in conjunction with the certificate, all of which shall be in the English language;
 - (b) a copy of foreign operator certificate and Operations Specifications required under these regulations;
 - (c) the current parts of the Operations Manual relevant to the duties of the crew;
 - (d) those parts of the Operations Manual which are required for the conduct of a flight and are easily accessible to the crew;
 - (e) the current aircraft flight manual or rotorcraft flight manual approved by the State of Registry, or aircraft operating manual approved by the State of Operator;
 - (f) the current certificate of registration, and airworthiness certificate in force in respect of that aircraft;
 - (g) the appropriate licences of the members of the flight crew; and
 - (h) appropriate approval or licence of crew members for aircraft radio operation.
- (2) The aircraft flight manual or rotorcraft flight manual shall be updated by implementing changes received from the State of Design and made mandatory by the State of Registry.

Additional information and forms to be carried

115. A foreign air operator shall ensure that, in addition to the documents and manuals referred to in this Part, the following information and forms, relevant to the type and area of operation, are carried on each flight—

- (a) operational flight plan;
- (b) aircraft technical log;
- (c) appropriate notice to airman or aeronautical information service briefing documentation;
- (d) appropriate meteorological information;
- (e) passenger and cargo manifests as appropriate for the intended flight;
- (f) the mass and balance document for the aircraft certifying that the load carried is properly distributed and safely secured;
- (g) notification of special loads including any dangerous goods; and
- (h) current maps and charts for the area of operation.

Production of documentation, manuals and records

116. (1) A foreign air operator shall for the purpose of foreign operator surveillance inspection—

- (a) give any person authorised by the Authority access to any documents, manuals and records which are related to flight operations and maintenance; and
 - (b) produce all such documents, manuals and records, when requested to do so by the Authority, within a reasonable period of time.
- (2) The pilot in command shall, within a reasonable time of being requested to do so by a person authorised by the Authority, produce to that person the documentation, manuals and records required to be carried on board.

Computation of passenger and baggage weights

117. (1) A foreign air operator shall compute the mass of passengers and checked baggage using the—
- (a) actual weighed mass of each person and the actual weighed mass of baggage; or
 - (b) standard mass values specified by the foreign Authority.
- (2) A foreign air operator conducting operations in Zimbabwe shall, when required by the Authority, produce evidence validating any standard mass values used.

Single-engine aircraft operations at night or in Instrument Meteorological Conditions

118. (1) A foreign air operator may not operate a single-engine, non-turbine aircraft—
- (a) at night; or
 - (b) in Instrument Meteorological Conditions.
- (2) A foreign air operator may operate a single-engine turbine aircraft at night and in Instrument Meteorological Conditions provided the State of the Operator has ensured—
- (a) the reliability of the turbine engine;
 - (b) the operator's maintenance procedures, operating practices, flight dispatch procedures and crew training programs are adequate;
 - (c) the aircraft is appropriately equipped for flight at night and in Instrument Meteorological Conditions;
 - (d) for aircraft issued a certificate of airworthiness before 1st January, 2005, an engine trend monitoring system;
 - (e) for aircraft issued a certificate of airworthiness after 1st January, 2005, an automatic trend monitoring system.

Flight rules within Zimbabwe

119. A foreign air operator shall comply with the flight rules and limitations contained in the applicable Aircraft Operations Regulations when operating within Zimbabwe.

Flight crew member qualifications

120. A Foreign air operator shall ensure that their flight crew have the appropriate licences and ratings for the operations to be conducted in Zimbabwe.

Age limitations

121. (1) A Foreign air operator shall ensure that the required pilot-in-command engaged in single pilot operations on aircraft operating in Zimbabwe shall be less than 60 years of age.
- (2) A Foreign air operator pilot for aircraft requiring more than one pilot as flight crew members may have both crew members age of up to 65 years.

Language proficiency

122. Foreign air operators shall ensure that flight crew operating aircraft in Zimbabwe meet the language proficiency requirement of least the operational level 4 as contained in Annex 1 for the English language and that such proficiency is endorsed on the licence.

Aircraft security

123. (1) A foreign air operator shall—
- (a) ensure that all appropriate personnel are familiar, and comply, with the relevant requirements of the national security programs of the State of the operator;
 - (b) establish, maintain and conduct approved training programs which enable the operator's personnel to take appropriate action to prevent acts of unlawful interference such as sabotage or unlawful seizure of aircraft and to minimize the consequences of such events should they occur;
 - (c) ensure that all aircraft carry a checklist of the procedures to be followed for that type in searching for concealed weapons, explosives, or other dangerous devices; and
 - (d) ensure that, for aircraft above 5 700 kg maximum certificated mass, the flight crew compartment door, if installed, on all aircraft operated for the purpose of carrying passengers shall be capable of being locked from within the compartment in order to prevent unauthorised access.
- (2) The pilot-in-command or, in his or her absence the operator, shall submit, without delay, a report

of an act of unlawful interference on board an aircraft to the Authority and the Authority in the State of the operator.

Unauthorised carriage

124. A foreign air operator shall take measures to ensure that no persons conceal themselves or cargo on board an aircraft.

Offering dangerous goods for transport by air

125. (1) A foreign operator certificate holder, operating an aircraft for commercial purposes, shall comply with the applicable Civil Aviation Dangerous Goods Regulations.

(2) Notwithstanding the requirements of the applicable Civil Aviation Dangerous Goods regulations, no foreign air operator may accept dangerous goods for transport by air in Zimbabwe unless the foreign air operator—

- (a) has been authorised to do so by the foreign Authority; and
- (b) has conducted the required personnel training.

(3) The foreign air operator shall properly classify, document, certify, describe, package, mark, label and put in a fit condition for transport, dangerous goods as required by the operator's dangerous goods program as approved by the foreign Authority.

(4) The foreign air operator shall ensure that his or her Operations Specifications issued by a foreign state has an endorsement indicating whether the operator is authorised to accept dangerous goods or not.

(5) The foreign air operator shall file a copy of its dangerous goods program with the Authority, if the foreign operator has—

- (a) been granted authority to accept dangerous goods; and
- (b) an approved dangerous goods program authorised by the foreign Authority.

(6) Any foreign air operator who transports dangerous goods to and from Zimbabwe without authority shall have his or her foreign operators licence suspended or revoked.

Carriage of weapons of war and munitions of war

126.(1) A foreign air operator conducting commercial air transportation operations to or through Zimbabwe shall—

(a) not transport weapons and munitions of war by air unless an approval to do so has been granted by all States concerned;

(b) ensure that weapons and munitions of war are—

- (i) stowed in the aircraft in a place which is inaccessible to passengers during flight; and
- (ii) in the case of firearms, unloaded, unless, before the commencement of the flight, an approval has been granted by all States concerned that such weapons of war and munitions of war may be carried in circumstances that differ in part or in total from those indicated in this section;

(c) ensure that the pilot in command is notified before the flight begins of the details and location on board the aircraft of any weapons of war and ammunitions of war that are intended to be carried.

(2) Any foreign operator who fails to declare weapons of war and munition to the Authority shall be guilty of an offence and liable to a fine not exceeding level 14 or to imprisonment for a period not exceeding five years or to both such fine and such imprisonment.

Carriage of sporting weapons and ammunition

127. (1) A foreign air operator conducting commercial air transportation operations to Zimbabwe shall take all measures necessary to ensure that any sporting weapons intended to be carried by air are reported to the Authority.

(2) A foreign air operator accepting the carriage of sporting weapons shall ensure that they are—

(a) stowed in a place on the aircraft which is inaccessible to passengers during flight unless the Authority has determined that compliance is impracticable and has approved other procedures; and

(b) in the case of firearms or other weapons that can contain ammunition, unloaded.

(3) A foreign air operator may allow a passenger to carry ammunition for sporting weapons in passenger's checked baggage, as approved by the Authority.

Flight recorder

128. (1) A foreign air operator of an aircraft on which a flight recorder is carried shall preserve the original Flight recorders data recordings for a period of 60 days unless otherwise directed by the Authority of the operator.

(2) A foreign air operator shall ensure that, in the event of his or her aircraft involved in an accident or incident, the preservation of—

- (a) all related flight recorder records; and
- (b) if necessary, the associated flight recorders.

(3) A foreign air operator shall ensure that the flight recorder records and their associated flight recorders referred to in subsection (2) are retained in safe custody pending their disposition as determined in accordance with Annex 13.

(4) No person shall use or permit the use of recordings or transcripts of cockpit voice recorder, cockpit audio recording system, Class A Airborne Image recorder, flight data recorder, air data reference system, class B and class C Airborne Image recorder and Airborne Image recording system and Class A Airborne Image recording system for purposes other than the investigation of an accident or incident as per Annex 13 except where the recordings or transcripts are—

- (a) related to a safety related event identified in the context of a safety management system;
- (b) restricted to the relevant portions of a de-identified transcript of the recording;
- (c) sought for use in criminal proceedings not related to an event involving an accident or an incident investigation;
- (d) used for inspections of flight recorder systems as provided by these regulations;
- (e) used by the operator for airworthiness or maintenance purposes;
- (f) used by the operator in the operation of a flight data analysis program;
- (g) disclosed under secure procedures;
- (h) subject to the protections accorded by Annex 19.

(5) Any person who deliberately fails to preserve the records referred to in subsections (1), (2) and

(3) shall be guilty of an offence and liable to a fine not exceeding level 14 or to imprisonment for a period not exceeding five years or to both such fine and such imprisonment.

Repeal

129. The Civil Aviation (Air Operator Certification and Administration) Regulations, 2004 published in Statutory Instrument 87 of 2018 is repealed.

FIRST SCHEDULE
AIR OPERATOR CERTIFICATE Pre-Application/ Renewal form (Sections 3(3)(a) (1) and 8(1))

CAA Form 175

<p>Civil Aviation Authority of Zimbabwe DIRECTORATE OF FLIGHT SAFETY AND STANDARD</p> <ul style="list-style-type: none"> ○ Private Bag 6002 ○ Harare International Airport ○ level 3, Wing D Tel: +263 (0)4 585073-88 ○ Fax: +263 (0)4 585017 ○ Email: flightoperations@caaz.co.zw 	<p align="center">PRE-APPLICATION FOR AIR OPERATOR CERTIFICATE FORM</p>												
<p>1.AOC ORGANISATION NAME,NUMBER LOCATION AND ADDRESS</p>	<p>2.REASON FOR SUBMISSION</p>												
<p>(a) Official name of operator</p>	<ul style="list-style-type: none"> ○ Original application for certificate ○ Change of Ops specs ○ Change of location or housing and facilities ○ Change in ownership ○ Other(specify) 												
<p>(b) Principal place of business</p>	<p> </p> <p> </p> <p> </p>												
<p>(c) Location where business is conducted</p>	<p>3. CONTRACTED AIR OPERATOR CERTIFICATE SUBCONTRACTORS OTHER STATES APPROVALS</p> <table border="1"> <thead> <tr> <th>NAME OF CAA</th> <th>DATE ISSUED</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td> </td> </tr> <tr> <td>2.</td> <td> </td> </tr> <tr> <td>3.</td> <td> </td> </tr> <tr> <td>4.</td> <td> </td> </tr> <tr> <td>5.</td> <td> </td> </tr> </tbody> </table>	NAME OF CAA	DATE ISSUED	1.		2.		3.		4.		5.	
NAME OF CAA	DATE ISSUED												
1.													
2.													
3.													
4.													
5.													
<p>(d) Official mailing address of the operator (number, street, city and state)</p>	<p> </p> <p> </p>												
<p>(e) Doing business as</p>	<p> </p> <p> </p>												

4. Type of operations
<ul style="list-style-type: none"> ○ Passenger Commercial operations-domestic ○ Passenger Commercial operations –international ○ Cargo Commercial operations-domestic ○ Cargo Commercial operations-International ○ Aerial work ○ Air Ambulance services ○ Crop spraying ○ Sky diving

5. Type and number of aircraft	Make

6. Type of maintenance	

7. List of functions contracted to outside organization

8. APPLICANTS CERTIFICATION			
Name of owner(Include names of individual owner and all partners)			
I hereby certify that I have been authorised by organization identified in 1 above to make this application and that statements attached hereto are true and correct to the best of my knowledge			
DATE	SIGNATURE	NAME	TITLE

For CAAZ Only	Record of action of Air Operator Certificate organization inspection	For CAAZ use only
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9. Remarks		
Recommendations		9. Date of final Inspection
11. CAA Office	Signature(s)	Name(s)

12. Chief Flight operations Inspector		
ACTION TAKEN		Signature
<input type="radio"/> Approved		
<input type="radio"/> Not Approved	Date	Name

Section 1D. To be completed by all applicants		
11. Additional information that provides a better understanding of the proposed operation or business (Attach additional sheets, if necessary)		
12. Proposed Training (Aircraft and/or Simulator)		
13. The statement and information contained on this form denotes an intent to apply for a CAA certificate.		
Type of Organisation:		
Signature	Date (day/month/year)	Name and Title
Section 2. To be completed by the CAAZ Official		
Received by (Name and Office):		Date received (day/month/year)
Date forwarded to Director Of Flight Safety And Standards (day/month/year):	For: <input type="checkbox"/> Action <input type="checkbox"/> Information only	
Remarks:		
Section 3. To be completed by the Office of the Director of Flight Safety and Standard		
Received by:	Pre-application Number:	
Date (day/month/year):	Assigned Certification Number:	
Local office assigned responsibility:	Date forwarded to local office: (day/month/year)	
Remarks:		

THIRD SCHEDULE
AIR OPERATOR CERTIFICATE (Section 5(2) (a))

State of Operator ZIMBABWE		
Issuing Authority CIVIL AVIATION AUTHORITY OF ZIMBABWE		
Expiry Date:	AOC No:	Operator's Contacts Address Tel: Fax: Email:
Operator Main Base of Operation Harare International Airport	Name of Certificate Holder:	
<p>The above holder of this certificate has been authorised to conduct commercial aviation operations in accordance with:</p> <p>*the provisions of the Civil Aviation(Air Operator Certification)Regulations 2017 *the attached Operations Specifications *the approved Operations Manual</p>		
Date Of Issue:	Signature	Name
Issued at: HARARE ZIMBABWE	GENERAL MANAGER	
This certificate was issued without alteration or erasure		

OPERATIONS SPECIFICATIONS ISSUED BY THE CIVIL AVIATION AUTHORITY OF ZIMBABWE			
Authorised Areas of Operation		Authorised Aircraft	
World wide		All Aircraft	
Aircraft Approved for Operations			
Type and Registration of Aircraft	Type of Approach	Basic Minima	
		DH (FT)	RVR (M)
Cessna			
OPERATIONS SPECIFICATIONS APPROVAL			
SIGNATURE	NAME IN BLOCK LETTERS	STAMP	
FLIGHT OPERATIONS INSPECTOR	AIR OPERATOR CERTIFICATE NUMBER:		

FIFTH SCHEDULE**MANAGEMENT PERSONNEL REQUIRED FOR COMMERCIAL AIR TRANSPORT OPERATIONS** (Section 14(4))

- 1.0 Each Air Operator Certificate holder shall make arrangements to ensure continuity of supervision if operations are conducted in the absence of any required management personnel.
- 1.1 Required management personnel shall be contracted to work sufficient hours such that the management functions are fulfilled.
- 1.3 A person serving in a required management position for an Air Operator Certificate holder may not serve in a similar position for any other Air Operator Certificate holder, unless an exemption is issued by the Authority.

Nominated Accountable Manager

- 2.0 The operator must have a nominated Accountable Manager acceptable to the Authority who has corporate authority for ensuring that all operations and maintenance activities can be financed and carried out to the standard required by the Authority and any additional requirements defined by the operator.
- 2.1 The Accountable Manager is an essential part of the Air Operator Certificate holder's management organisation. The term 'Accountable Manager' is intended to mean the Chief Executive / President / Managing Director / General Manager, etc. of the operator's organisation, who by virtue of his position has overall responsibility (including financial) for managing the organisation.
- 2.2 The Accountable Manager will have overall responsibility for the operator's quality and safety system, including the frequency, format and structure of the internal management evaluation activities.

- 2.3 The minimum qualifications for the Accountable Manager are:
- (a) He/She should have worked as a licenced airman;
 - (b) Be a holder of a recognised aviation management qualification;
 - (c) Conversant with the Civil Aviation Act, and International Civil Aviation organisation requirements;
 - (d) Police Clearance Certificate for all criminal offences
 - (e) a background in the management of commercial air transport operations;
 - (f) knowledge of this Part and other Regulations and materials published by the Authority that are applicable to flight operations and aircraft maintenance; and
 - (g) Knowledge of the operations and aircraft maintenance requirements of the Operator.

Nominated Post Holders

- 3.0 The operator must have nominated post holders, acceptable to the Authority, who are responsible for the management and supervision of the following areas:
- a) Quality Assurance;
 - b) Flight Operations;
 - c) Training (Chief Pilot);
 - d) Maintenance and Engineering;
 - e) Ground Handling manager;
 - f) Safety Management System manager
 - g) Others (as required by CAAZ).

- 3.1 Nominated Post Holders should possess the appropriate experience and qualification requirements which are listed in 4 to 15 below. Any deviations from these requirements shall be approved by the Authority.

Nominated Post Holders should have:

- 4.0 Practical experience and expertise in the application of aviation safety standards and safe operating practices;
- 4.1 Comprehensive knowledge of:
- a) Civil Aviation Act [*Chapter 13:16*];
 - b) Current Civil Aviation Regulations and any associated requirements and procedures;
 - c) Management ethics;
 - d) The Air Operator Certificate holder's Operations Specifications;
 - e) The Air Operator Certificate holder's Operations Manual or Maintenance Management Manual where applicable;
- 4.2 Appropriate management qualifications and experience in a comparable organisation;
- 4.3 Five (5) years relevant work experience of which at least two years should be from the aeronautical industry in an appropriate position;

Quality Assurance Manager. The nominated Post Holder should possess the following:

- 5.0 An aviation pilot or aircraft maintenance engineer's licence
- 5.1 5 years experience in a position that requires an airman's licence
- 5.2 Aviation quality and safety management qualification
- 5.3 Knowledge of the operator's Manual of procedures and related documents

Director Flight Operations.

- 6.0 The Nominated Post Holder should hold a valid Flight Crew Licence appropriate to the type of operation conducted under the Air Operator Certificate in accordance with the following:
- 6.1 An ATP Licence, and
- 6.2 3 years experience as Pilot-in-Command in air transport operations –
- a) Of large aircraft if the Air Operator Certificate holder operates large aircraft, or
 - b) Of either large or small aircraft if the Air Operator Certificate holder only operates small aircraft.

Chief Pilot.

- 7.0 The Nominated Post Holder should hold a valid Flight Crew Licence appropriate to the type of operation conducted under the Air Operator Certificate in accordance with the following:
- 7.1 An ATPL licence with the appropriate ratings for at least one of the aircraft used in the Air Operator Certificate holder's operations, and
- 7.2 3 years experience as Pilot-in-Command in commercial air transport operations –
- In large aircraft if the Air Operator Certificate holder operates large aircraft, or
 - In either large or small aircraft if the Air Operator Certificate holder only operates small aircraft.
 - The General may accept a commercial pilot licence with instrument rating in lieu of the ATPL licence if the Pilot-in-Command requirements for the operations conducted require only a commercial certificate.

Director Maintenance. The nominated post holder should possess the following:

- 8.0 Aircraft Maintenance Engineer's Licence
- 8.1 3 years experience in the maintaining the same category and/or class of aircraft used by the Air Operator Certificate holder including 1 year in the capacity of returning aircraft to service; and
- 8.2 1-year supervisory experience maintaining the same category and/or class of aircraft used by the Air Operator Certificate holder
- 8.3 Familiar with the organisation's Maintenance Management Manual.
- 8.4 Knowledge of the relevant type(s) of aircraft operated by the Air Operator Certificate holder.
- 8.5 Quality experience in engineering maintenance of aircraft.

Other Post Holders (as required).

- 9.0 The Nominated Post Holder should have a thorough knowledge and qualifications relevant to their duties and responsibilities.

Combination of Nominated Post Holder's Responsibilities

- 10.0 The acceptability of a single person holding several posts, possibly in combination with being the Accountable Manager as well, will depend upon the nature and scale of the operation. The two main areas of concern are competency and an individual's capacity to meet his responsibilities.
- 10.1 With regards to competency in the different areas of responsibility, there should not be any difference from the requirements applicable to persons holding only one post.
- 10.2 The capacity of an individual to meet his responsibilities will primarily be dependent upon the scale of the operation. However, the complexity of the organisation or of the operation may prevent, or limit, combinations of posts which may be acceptable in other circumstances.
- 10.3 In most circumstances, the responsibilities of a Nominated Post Holder will rest with a single individual. However, in the area of ground operations, it may be acceptable for these responsibilities to be split, provided that the responsibilities of each individual concerned are clearly defined.
- 10.4 The intent of this Part is neither to prescribe any specific organisational hierarchy within the operator's organisation nor to prevent the Authority from requiring a certain hierarchy before it is satisfied that the management organisation is suitable.
- 11.** The Accountable Manager and Post Holders should be Zimbabwean citizens.
12. The nominated Accountable Manager and Post Holders shall provide a Police Clearance Certificate not older than 30 days.

13. A person serving as a nominated Post Holder for an Operator may not serve as a Post Holder for any other Air Operator Certificate unless an exemption is issued by the Authority.
14. Each Air Operator Certificate holder shall make arrangements to ensure the continuity of supervision if operations are conducted in the absence of any required Post Holder.
15. Post Holders shall be employed full-time and be contracted to work sufficient hours such that the management functions are fulfilled.

SIXTH SCHEDULE
QUALITY SYSTEM (*Section 15 (3)*)

1.0 An Air Operator Certificate holder should establish its quality system in accordance with the instruction and information contained in the following paragraphs.

Quality Policy.

2.0 An operator shall establish a formal, written quality policy statement that is a commitment by the accountable manager as to what the quality system is intended to achieve. The quality policy should reflect the achievement and continued compliance with this Part together with any additional standards specified by the operator.

2.1 The accountable manager is an essential part of the operator's management organisation. With regard to the text in section 15(2) the term "accountable manager" is intended to mean the Chief Executive/President/Managing Director/ General Manager, etc. of the operator's organisation, who by virtue of his or her position has overall responsibility (including financial) for managing the organisation.

2.2 The accountable manager will have overall responsibility for the operator's quality system, including the frequency, format and structure of the internal management evaluation activities as prescribed in paragraph 3.9 below.

Purpose of the Quality System.

3.0 The quality system should enable the operator to monitor compliance with this Part, the operator's manual system, and any other standards specified by the operator, or the Authority, to ensure safe operations and airworthy aircraft.

Quality Manager.

4.0 The function of the quality manager is to monitor compliance with, and the adequacy of, procedures required to ensure safe operational practices and airworthy aircraft as required by this Part, may be carried out by more than one person by means of different, but complementary, quality assurance programs.

4.1 The primary role of the quality manager is to verify, by monitoring activity in the fields of flight operations, maintenance, crew training and ground operations, that the standards required by the Authority, and any additional requirements defined by the operator, are being carried out under the supervision of the relevant required management personnel.

4.2 The quality manager should be responsible for ensuring that the quality assurance programme is properly established, implemented and maintained.

4.3 The quality manager should:

- (a) Report to the Accountable Manager;
- (b) Not be one of the required management personnel; and
- (c) Have access to all parts of the operator's, and as necessary, any sub contractor's organisation.

4.4 In the case of small/very small operators, the posts of the Accountable Manager and quality manager may be combined.

Quality System Requirements

5.0 The operator's quality system should ensure compliance with and adequacy of operational and maintenance activities requirements, standards, and operational procedures.

5.1 The operator should specify the basic structure of the quality system applicable to the operation.

5.2 The quality system should be structured according to the size and complexity of the operation to be monitored.

5.3 As a minimum, the quality system should address the following:

- (a) the provisions of this Part;
- (b) the operator's additional standards and operating practices;
- (c) the operator's quality policy;
- (d) the operator's organisational structure;
- (e) responsibility for the development, establishment and management of the quality system;
- (f) documentation, including manuals, reports and records;
- (g) quality procedures;
- (h) quality assurance program;
- (i) the required financial, material and human resources; and
- (j) training requirements.

5.4 The quality system should include a feedback system to the accountable manager to ensure that corrective actions are both identified and promptly addressed. The feedback system should also specify who is required to rectify discrepancies and non-compliance in each particular case, and the procedure to be followed if corrective action is not completed within an appropriate time scale.

Relevant Documentation.

6.0 Relevant documentation includes the relevant part of the operator's manual system.

6.1 In addition, relevant document should include the following —

- (a) Quality policy;
- (b) Terminology;
- (c) Specified operational standards;
- (d) a description of the organisation;
- (e) the allocation of duties and responsibilities;
- (f) operational procedures to ensure regulatory compliance;
- (g) accident prevention and flight safety programme;
- (h) the quality assurance programme, reflecting:
 - (i) schedule of the monitoring process;
 - (ii) audit procedures;
 - (iii) reporting procedures;
 - (iv) follow-up and corrective action procedures;
 - (v) recording system;
 - (vi) the training syllabus; and
 - (vii) document control

Quality assurance programme.

7.0 The quality assurance programme should include all planned and systematic actions necessary to provide confidence that all operations and maintenance are conducted in accordance with all applicable requirements, standards and operational procedures.

7.1 When establishing a quality assurance programme, consideration should be given to at least the following —

- (a) Quality inspection;
- (b) Audit;
- (c) Auditors;
- (d) Auditor's independence
- (e) Audit scope;
- (f) Audit scheduling;
- (g) Monitoring and corrective action; and
- (h) Management evaluation.

Quality Inspection.

8.0 The primary purpose of a quality inspection is to observe a particular event/action/ document, etc. in order to verify whether established operational procedures and requirements are followed during the accomplishment of that event and whether the required standard is achieved.

8.1 Typical subject areas for quality inspections are:

- (a) Flight operations;
- (b) Ground deicing/anti-icing;
- (c) Flight support services;
- (d) Load control;
- (e) Maintenance;
- (f) Technical standards;
- (g) Training standards;
- (e) Ground Handling.; and
- (f) Safety Management System.

8.2 Typical methods for quality inspections for maintenance include —

- (a) Product sampling - the part inspection of a representative sample of the aircraft fleet;
- (b) Defect sampling - the monitoring of defect rectification performance;
- (c) Concession sampling - the monitoring of any concession to not carry out maintenance on time;
- (d) On time maintenance sampling - the monitoring of when (flying hours/ calendar time/flight cycles, etc) aircraft and their components are brought in for maintenance;
- (e) Sample reports of unairworthy conditions and maintenance errors on aircraft and components.

Audit.

9.0 An audit is a systematic, and independent comparison of the way in which an operation is being conducted against the way in which the published operational procedures say it should be conducted.

9.1 Audits should include at least the following quality procedures and processes —

- (a) A statement explaining the scope of the audit;
- (b) Planning and preparation;
- (c) Gathering and recording evidence; and
- (d) Analysis of the evidence.

9.2 Techniques that contribute to an effective audit are:

- (a) Interviews or discussions with personnel;
- (b) A review of published documents;
- (c) The examination of an adequate sample of records;
- (d) The witnessing of the activities that make up the operation; and
- (e) The preservation of documents and the recording of observations.

Auditors.

10.0 An operator should decide, depending upon the complexity of the operations, whether to make use of a dedicated audit team or a single auditor. In any event, the auditor or audit team should have relevant operational and/or maintenance experience.

10.1 The responsibilities of the auditors should be clearly defined in the relevant documentation.

Auditor's Independence.

11.0 Auditors should not have any day-to-day involvement in the area of the operation and/ or maintenance activity that is to be audited. An operator may, in addition to using the services of full-time dedicated personnel belonging to a separate quality department, undertake the monitoring of specific areas or activities by the use of part-time auditors. An operator whose structure and size does not justify the establishment of full-time auditors, may undertake the audit function by the use of part-time personnel from within its own organisation or from an external source under the terms of an agreement acceptable to the Authority. In all cases the operator should develop suitable procedures to ensure that persons directly responsible for the activities to be audited are not selected as part

of the auditing team. Where external auditors are used, it is essential that any external specialist is familiar with the type of operation and/or maintenance conducted by the operator.

11.1 The operator's quality assurance programme should identify the persons within the company who have the experience, responsibility and authority to —

- (a) perform quality inspections and audits as part of ongoing quality assurance;
- (b) identify and record any concerns or findings, and the evidence necessary to substantiate such concerns or findings;
- (c) initiate or recommend solutions to concerns or findings through designated reporting channels;
- (d) verify the implementation of solutions within specific time scales; and (e) report directly to the quality manager.

Audit scope.

12.0 Operators are required to monitor compliance with the operational and maintenance procedures they have designed to ensure safe operations, airworthy aircraft and the serviceability of both operational and safety equipment. In doing so they should as a minimum, and where appropriate, monitor:

- (a) Organisation;
- (b) Plans and company objectives;
- (c) Operational procedures;
- (d) Flight safety;
- (e) Operator certification (Air Operator Certificate /Operations specifications)
- (f) Supervision;
- (g) Aircraft performance;
- (h) All weather operations;
- (i) Communications and navigational equipment and practices;
- (j) Mass, balance and aircraft loading;
- (k) Instruments and safety equipment;
- (l) Manuals, logs, and records;
- (m) Flight and duty time limitations, rest requirements, and scheduling;
- (n) Aircraft maintenance/operations interface;
- (o) Use of the Minimum Equipment List;
- (p) Maintenance programmes and continued airworthiness;
- (q) Airworthiness directives management;
- (r) Maintenance accomplishment;
- (s) Defect deferral;
- (t) Flight crew;
- (u) Cabin crew;
- (v) Dangerous goods;
- (w) Security; and
- (y) Training.

Audit Scheduling.

13.0 A quality assurance program should include a defined audit schedule and a periodic review cycle area by area. The schedule should be flexible, and allow unscheduled audits when trends are identified. Follow-up audits should be scheduled when necessary to verify that corrective action was carried out and that it was effective.

13.1 An operator should establish a schedule of audits to be completed during a specified calendar period. All aspects of the operation should be reviewed within every 12 month period in accordance with the programme unless an extension to the audit period is accepted as explained below. An operator may increase the frequency of audits at its discretion but should not decrease the frequency without the agreement of the Authority. Audit frequency should not be decreased beyond a 6 month period interval.

13.2 When an operator defines the audit schedule, significant changes to the management, organisation, operation, or technologies should be considered as well as changes to the regulatory requirements.

Monitoring and Corrective Action.

14.0 The aim of monitoring within the quality system is primarily to investigate and judge its effectiveness and thereby to ensure that defined policy, operational, and maintenance standards are continuously complied with. Monitoring activity is based upon quality inspections, audits, corrective action and follow-up. The operator should establish and publish a quality procedure to monitor

regulatory compliance on a continuing basis. This monitoring activity should be aimed at eliminating the causes of unsatisfactory performance.

14.1. Any non-compliance identified as a result of monitoring should be communicated to the manager responsible for taking corrective action or, if appropriate, the accountable manager. Such non-compliance should be recorded, for the purpose of further investigation, in order to determine the cause and to enable the recommendation of appropriate corrective action.

14.2. The quality assurance programme should include procedures to ensure that corrective actions are taken in response to findings. These quality procedures should monitor such actions to verify their effectiveness and that they have been completed. Organisational responsibility and accountability for the implementation of corrective action resides with the department cited in the report identifying the finding. The accountable manager will have the ultimate responsibility for resourcing the corrective active action and ensuring, through the quality manager, that the corrective action has re-established compliance with the standard required by the Authority, and any additional requirements defined by the operator.

14.3. Corrective action. Subsequent to the quality inspection/audit, the operator should establish —

- (a) the seriousness of any findings and any need for immediate corrective action;
- (b) the origin of the finding;
- (c) what corrective actions are required to ensure that the non-compliance does not recur;
- (d) a schedule for corrective action;
- (e) the identification of individuals or departments responsible for implementing corrective action; and
- (f) allocation of resources by the accountable manager, where appropriate.

14.4. The quality manager should —

- (a) verify that corrective action is taken by the manager responsible in response to any finding of non-compliance;
- (b) verify the corrective action includes the elements outlined in paragraph 3.8.4 above;
- (c) monitor the implementation and completion of corrective action;
- (d) provide management with an independent assessment of corrective action; implementation and completion; and
- (e) evaluate the effectiveness of corrective action through follow-up process.

Management Evaluation.

15.0. A management evaluation is a comprehensive, systematic, documented review by the management of the quality system, operational policies and procedures, and should consider —

- (a) the results of quality inspections, audits and any other indicators; and
- (b) the overall effectiveness of the management organisation in achieving stated objectives.

15.1. A management should identify and correct trends, and prevent, where possible, future non-conformities. Conclusions and recommendations made as a result of an evaluation should be submitted in writing to the responsible manager for action. The responsible manager should be an individual who has the authority to resolve issues and take action.

15.2. The accountable manager should decide upon the frequency, format and structure of internal management evaluation activities.

Recording.

16.0. Accurate, complete and readily accessible records documenting the results of the quality assurance programme should be maintained by the operator. Records are essential data to enable an operator to analyse and determine the root causes of non-conformity, so that areas of non-compliance can be identified and addressed.

16.1. The following records should be retained for a period of 5 years —

- (a) audit schedules;
- (b) quality inspection and audit reports;
- (c) responses to findings;
- (d) corrective action reports;
- (e) follow-up and closure reports; and
- (f) management evaluation reports.

Quality Assurance Responsibility for Sub-Contractors.

17.0 Operators may decide to sub-contract out certain activities to external agencies for the provision of services related to areas such as:

- (a) Ground deicing/anti-icing;
- (b) Maintenance;
- (c) Ground handling;
- (d) Flight support (including performance calculations, flight planning, navigation database and dispatch);
- (e) Training; and
- (f) Manual preparation.

17.1 The ultimate responsibility for the product or service provided by the sub-contractor always remains with the operator. A written agreement should exist between the operator and the sub-contractor clearly defining the safety related services and quality to be provided. The sub-contractor's safety related activities relevant to the agreement should be included in the operator's quality assurance programme.

17.2 The operator should ensure that the sub-contractor has the necessary authorisation/ approval when required and commands the resources and competence to undertake the task.

Quality System Training.

18.0 An operator should establish effective, well planned and resourced quality related briefing for all personnel.

18.1 Those responsible for managing the quality system should receive training covering

- (a) an introduction to the concept of the quality system;
- (b) quality management;
- (c) the concept of quality assurance;
- (d) quality manuals;
- (e) audit techniques;
- (f) reporting and recording; and
- (g) The way in which the quality system will function in the company.

18.2 Time should be provided to train every individual involved in quality management and for briefing the remainder of the employees. The allocation of time and resources should be governed by the size and complexity of the operation concerned.

Sources of Training.

19.0 Quality management courses are available from the various National or International Standards Institutions, and an operator should consider whether to offer such courses to those likely to be involved in the management of quality systems. Operators with sufficient appropriately qualified staff should consider whether to carry out in-house training.

Organisations with 20 or Less Full-Time Employees.

20.0 The requirement to establish and document a quality system, and to employ a quality manager applies to all operators. References to large and small operators elsewhere in this Part are governed by aircraft capacity (i.e. more or less than 20 seats) and by mass (i.e. greater or less than 10 tonnes maximum take-off mass). Such terminology is not relevant when considering the scale of an operation and the quality system required. In the context of quality systems therefore, operators should be categorised according to the number of full time staff employees.

Scale of Operation.

21.0 Operators who employ 5 or less full time staff are considered to be "very small" while those employing between 6 and 20 full time employees are regarded as "small" operators as far as quality systems are concerned. Full-time in this context means employed for not less than 35 hours per week excluding vacation periods.

21.2 Complex quality systems could be inappropriate for small or very small operators and the clerical effort required to draw up manuals and quality procedures for a complex system may stretch their resources. It is therefore accepted that such operators should tailor their quality systems to suit the size and complexity of their operation and allocate resources accordingly.

Quality System for Small/Very Small Operators.

22.0 For small and very small operators it may be appropriate to develop a quality assurance programme that employs a checklist. The checklist should have a supporting schedule that requires completion of all checklist items within a specified timescale, together with a statement acknowledging completion of a periodic review by top management. An occasional independent overview of the checklist content and achievement of the quality assurance should be undertaken.

22.1 The “small” operator may decide to use internal or external auditors or a combination of the two. In these circumstances it would be acceptable for external specialists and or qualified organisations to perform the quality audits on behalf of the quality manager.

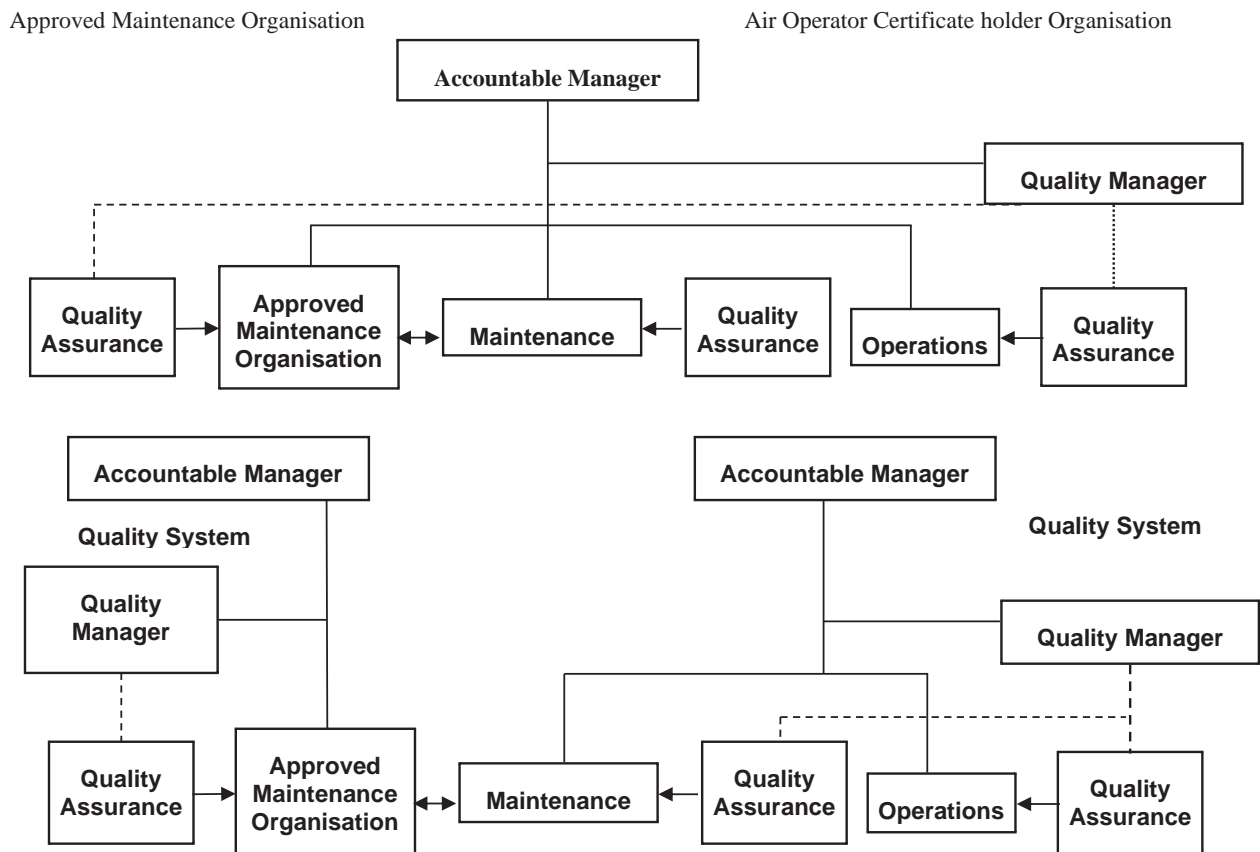
22.2 If the independent quality audit function is being conducted by external auditors, the audit schedule should be shown in the relevant documentation.

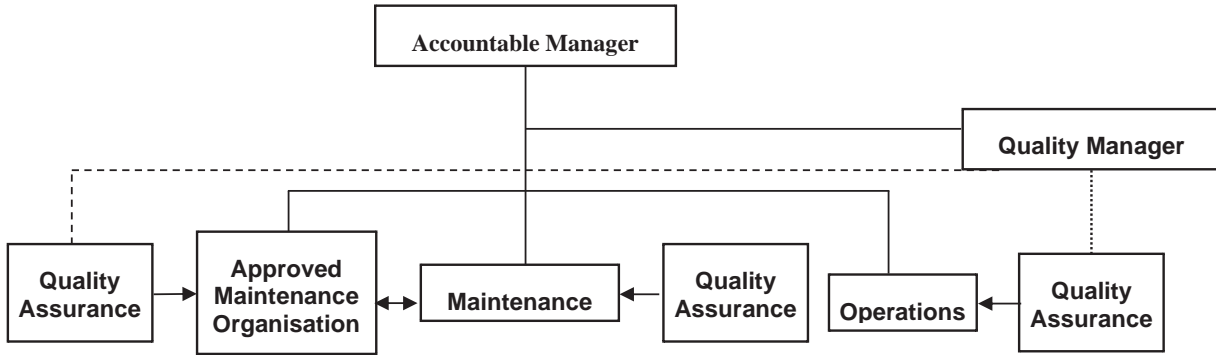
22.3 Whatever arrangements are made, the operator retains the ultimate responsibility for the quality system and especially the completion and follow-up of corrective actions.

Quality System — Organisation Examples

23.0 The following diagrams illustrate two typical examples of Quality organizations.

- (a) Quality System within the Air Operator Certificate holder’s organization when the Operator also holds an approval for maintenance.
- (b) Quality Systems related to an Air Operator Certificate holder’s organisation where aircraft maintenance is contracted out to an approved organisation which is not integrated with the Air Operator Certificate holder.
- (c) Quality System and Quality Audit Programme of the Air Operator Certificate holder should assure that the maintenance carried out by the approved organisation is in accordance with requirements specified by the Air Operator Certificate holder.





SEVENTH SCHEDULE

VALIDITY PERIODS FOR RETENTION OF RECORDS (Sections 17(4), 70(3)(c), 71(5))

An operator shall ensure that the following information or documentation is retained for the periods shown in the table below.

Table of Record Retention

Flight Crew Records		
1	Flight, duty and rest time	2 years
2	Licence and medical certificate	Until 12 months after the flight crew member has left the employ of the operator
3	Ground and flight training (all types)	Until 12 months after the flight crew member has left the employ of the operator
4	Route and aerodrome/heliport qualification training	Until 12 months after the flight crew member has left the employ of the operator
5	Dangerous good training	Until 12 months after the flight crew member has left the employ of the operator
6	Security training	Until 12 months after the flight crew member has left the employ of the operator
7	Proficiency and qualification checks (all types)	Until 12 months after the flight crew member has left the employ of the operator
Cabin Crew Records		
8	Flight, duty and rest time	2 years
9	Licence, if applicable	Until 12 months after the cabin crew member has left the employ of the operator
10	Ground and flight training (all types) and qualification checks	Until 12 months after the cabin crew member has left the employ of the operator

11	Dangerous good training	Until 12 months after the cabin crew member has left the employ of the operator
12	Security training	Until 12 months after the cabin crew member has left the employ of the operator
13	Competency checks	Until 12 months after the cabin crew member has left the employ of the operator

Records for other AOC Personnel		
14	Training/qualification of other personnel for whom an approved training program is required in this Part	Until 12 months after the employee has left the employ of the operator
15	Licence, if required, and medical certificate if required	Until 12 months after the employee has left the employ of the operator
16	Proficiency or competency checks, if required	Until 12 months after the employee has left the employ of the operator
Flight Preparation Forms		
17	Completed load manifest	3 months after the completion of the flight
18	Mass and balance reports	3 months after the completion of the flight
19	Dispatch releases	3 months after the completion of the flight
20	Flight plans	3 months after the completion of the flight
21	Passenger manifests	3 months after the completion of the flight
22	Weather reports	3 months after the completion of the flight
Flight Recorder Records		
23	Cockpit voice recordings	Preserved after an accident or incident for 60 days or longer if requested by the Authority.
24	Flight data recordings	Preserved after an accident or incident for 60 days or longer if requested by the Authority.
Aircraft Technical Logbook		
25	Journey records section	2 years
26	Maintenance records section	2 years
Maintenance Records of the Aircraft		
27	Total time in service (hours, calendar time and cycles, as appropriate) of the aircraft and all life-limited components	3 months after the unit to which they refer has been permanently withdrawn from service

28	Current status of compliance with all mandatory continuing airworthiness information	3 months after the unit to which they refer has been permanently withdrawn from service
29	Appropriate details of modifications and repairs to the aircraft and its components	3 months after the unit to which they refer has been permanently withdrawn from service
30	Total time in service (hours, calendar time and cycles, as appropriate) since the last overhaul of the aircraft or its components subject to a mandatory overhaul life	3 months after the unit to which they refer has been permanently withdrawn from service
31	The detailed maintenance records to show all requirements for a maintenance release have been met	1 year after signing of the maintenance release
Other Records		
32	Operational flight plan	3 months after the completion of the flight
33	Quality system records	5 years
34	Dangerous goods transport document	6 months after the completion of the flight
35	Dangerous goods acceptance checklist	6 months after the completion of the flight
36	Records on cosmic and solar radiation dosage, if AOC holder operates aircraft that fly above 15 000 m (49 000 ft)	Until 12 months after the crew member has left the employ of the AOC holder

EIGHTH SCHEDULE

FLIGHT SAFETY DOCUMENTS SYSTEM *(Section 21)*

Organisation

1.0 The following outline addresses the major elements of an operator's flight safety documents system development process, with the aim of ensuring compliance with this Part.

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

1.2 Information contained in a flight safety documents system shall be grouped according to the importance and use of the information, as follows -

- (a) Time critical information, e.g., information that can jeopardize the safety of the operation if not immediately available;
- (b) Time sensitive information, e.g., information that can affect the level of safety or delay the operation if not available in a short time period;
- (c) Frequently used information;
- (d) Reference information, e.g., information that is required for the operation but does not fall under b) or c) above; and
- (e) Information that can be grouped based on the phase of operation in which it is used.

1.3 Time critical information shall be placed early and prominently in the flight safety documents system.

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

Validation.

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

Design

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

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

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

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

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

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

Deployment.

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

Amendment.

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

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

5.2 Operators shall develop an information gathering, review and distribution system to process information resulting from changes that originate within the operator, including —

- (a) Changes resulting from the installation of new equipment;
- (b) Changes in response to operating experience;
- (c) Changes in an operator's policies and procedures;
- (d) Changes in an operator certificate; and
- (e) Changes for purposes of maintaining cross fleet standardization.

5.3 Operators shall ensure that crew coordination philosophy, policies and procedures are specific to their operation.

5.4 A flight safety documents system shall be reviewed —

- (a) On a regular basis (at least once a year);
- (b) After major events (mergers, acquisitions, rapid growth, downsizing, etc.);
- (c) After technology changes (introduction of new equipment); and
- (d) After changes in safety regulations.

5.5 Operators shall develop methods of communicating new information. The specific methods shall be responsive to the degree of communication urgency.

5.6 As frequent changes diminish the importance of new or modified procedures, it is desirable to minimize changes to the flight safety documents system.

5.7 New information shall be reviewed and validated considering its effects on the entire flight safety documents system.

5.8 The method of communicating new information shall be complemented by a tracking system to ensure currency by operational personnel. The tracking system shall include a procedure to verify that operational personnel have the most recent updates.

NINTH SCHEDULE

FRAMEWORK FOR SAFETY MANAGEMENT SYSTEMS (SMS) (*Section 22(5)*)

1.0 This Schedule specifies the framework for the implementation and maintenance of a safety management system (SMS) by an operator or an approved maintenance organization. An SMS is a management system for the management of safety by an organization. The framework includes four components and twelve elements representing the minimum requirements for SMS implementation. The implementation of the framework shall be commensurate with the size of the organization and the complexity of the services provided. This Schedule also includes a brief description of each element of the framework.

2.0 Safety policy and objectives

2.1 Management commitment and responsibility

2.1.1 The operator/approved maintenance organization shall define the organization's safety policy which shall be in accordance with international and national requirements, and which shall be signed by the accountable executive of the organization. The safety policy shall reflect organizational commitments regarding safety; shall include a clear statement about the provision of the necessary resources for the implementation of the safety policy; and shall be communicated, with visible endorsement, throughout the organization. The safety policy shall include the safety reporting procedures; shall clearly indicate which types of operational behaviours are unacceptable; and shall include the conditions under which disciplinary action would not apply. The safety policy shall be periodically reviewed to ensure it remains relevant and appropriate to the organization.

2.2 Safety accountabilities

2.2.1 The operator/approved maintenance organization shall identify the accountable executive who, irrespective of other functions, shall have ultimate responsibility and accountability, on behalf of the operator/approved maintenance organization, for the implementation and maintenance of the SMS. The operator/approved maintenance organization shall also identify the accountabilities of all members of management, irrespective of other functions, as well as of employees, with respect to the safety performance of the SMS. Safety responsibilities, accountabilities and authorities shall be documented and communicated throughout the organization, and shall include a definition of the levels of management with authority to make decisions regarding safety risk tolerability.

2.3 Appointment of key safety personnel

2.3.1 The operator/approved maintenance organization shall identify a safety manager to be the responsible individual and focal point for the implementation and maintenance of an effective Safety Management System.

2.4 Coordination of emergency response planning

2.4.1 The operator/approved maintenance organization shall ensure that an emergency response plan that provides for the orderly and efficient transition from normal to emergency operations and the return to normal operations is properly coordinated with the emergency response plans of those organizations it must interface with during the provision of its services.

2.5 SMS documentation

2.5.1 The operator/approved maintenance organization shall develop a Safety Management System implementation plan, endorsed by senior management of the organization that defines the organization's approach to the management of safety in a manner that meets the organization's safety objectives. The organization shall develop and maintain Safety Management System documentation describing the safety policy and objectives, the Safety Management System requirements, the Safety Management System processes

and procedures, the accountabilities, responsibilities and authorities for processes and procedures, and the Safety Management System outputs. Also as part of the Safety Management System documentation, the operator/approved maintenance organization shall develop and maintain safety management systems manual (SMSM), to communicate its approach to the management of safety throughout the organization.

3.0 Safety risk management

3.1 Hazard identification

3.1.1 The operator or approved maintenance organization shall develop and maintain a formal process that ensures that hazards in operations are identified. Hazard identification shall be based on a combination of reactive, proactive and predictive methods of safety data collection.

3.2 Safety risk assessment and mitigation

3.2.1 The operator/approved maintenance organization shall develop and maintain a formal process that ensures analysis, assessment and control of the safety risks in flight/maintenance operations.

3.2.2 Hazard identification

3.2.3 Safety risk assessment and mitigation

4.0 Safety assurance

4.1 Safety performance monitoring and measurement

4.1.1 The operator or approved maintenance organization shall develop and maintain the means to verify the safety performance of the organization and to validate the effectiveness of safety risk controls. The safety performance of the organization shall be verified in reference to the safety performance indicators and safety performance targets of the Safety Management System.

4.2 The management of change

4.2.1 The operator or approved maintenance organization shall develop and maintain a formal process to identify changes within the organization which may affect established processes and services; to describe the arrangements to ensure safety performance before implementing changes; and to eliminate or modify safety risk controls that are no longer needed or effective due to changes in the operational environment.

4.3 Continuous improvement of the Safety Management System

4.3.1 The operator or approved maintenance organization shall develop and maintain a formal process to identify the causes of Sub-standard performances of the Safety Management System, determine the implications of substandard performance of the Safety Management System in operations, and eliminate or mitigate such causes.

5.0 Safety promotion

5.1 Training and education

5.1.1 The operator or approved maintenance organization shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform the Safety Management System duties. The scope of the safety training shall be appropriate to each individual's involvement in the Safety Management System.

5.2 Safety communication

5.2.1 The operator or approved maintenance organization shall develop and maintain formal means for safety communication that ensures that all personnel are fully aware of the Safety Management System, conveys safety-critical information, and explains why particular safety actions are taken and why safety procedures are introduced or changed.

TENTH SCHEDULE

Minimum acceptable aerodrome category for rescue and firefighting (sections 23(3))

1	Aerodromes (Required to be specified in the operational flight plan)	Minimum acceptable aerodrome RFFS category (Based on published aerodrome RFFS category)
2	Departure and destination aerodrome	Rescue and Fire Fighting Services category for each aerodrome should be equal to or better than the aeroplane Rescue and Fire Fighting Services category. One category below the aeroplane Rescue and Fire Fighting Services category may be accepted where provided as a remission in accordance with Annex 14, Volume I, 9.2, but not lower than Category 4 for aeroplanes with maximum certificated take-off mass of over 27 000 kg and not lower than Category 1 for other aeroplanes.
3	Departure and destination aerodrome in case of temporary downgrade and Take-off alternate, destination alternate and en-route alternate aerodromes	Two categories below the aeroplane RFFS category, but not lower than Category 4 for aeroplanes with maximum certificated take-off mass of over 27 000 kg and not lower than Category 1 for other aeroplanes.
4.	EDTO en-route alternate aerodrome	Rescue and Fire Fighting Services Category 4 for aeroplanes with maximum certificated take-off mass of over 27 000 kg or not lower than Category 1 for all other aeroplanes, under the condition that at least 30 minutes' notice will be given to the aerodrome operator prior to the arrival of the aeroplane.

ELEVENTH SCHEDULE

DEMONSTRATION FLIGHTS (Section 29 (4))

1.0 Each Air Operator Certificate holder shall conduct demonstration flights for each type of aircraft, including those aircraft materially altered in design, and for each kind of operation the Air Operator Certificate holder intends to conduct.

- 2.0 Each Air Operator Certificate holder shall conduct demonstration flights which contain at least -
- (a) one hundred total hours of flight time, unless the Authority determines that a satisfactory level of proficiency has been demonstrated in fewer hours;
 - (b) five hours of night time, if night flights are to be authorised;
 - (c) five instrument approach procedures under simulated or actual instrument weather conditions, if IFR flights are to be authorised; and
 - (d) entry into a representative number of en route airports, as determined by the Authority

3.0 No person may carry passengers in an aircraft during demonstration flights, except for those needed to make the demonstration flight and those designated by the Authority.

4.0 For those Air Operator Certificate holders of aircraft of less than 5700 kg, the necessity and extent of demonstration shall be at the option of the Authority.

TWELFTH SCHEDULE

OPERATIONS MANUAL (*Section 32 (8)*)

- 1.0 Each Air Operator Certificate holder shall ensure that the contents and structure of the operations manual are in accordance with rules and regulations of the Authority, and are relevant to the area(s) and type(s) of operation.
- 2.0 An operations manual, which may be issued in separate user manuals corresponding to specific aspects of operations shall be organized and developed in four parts in accordance with the requirements in section 36
- 3.0 An Air Operator Certificate holder may design a manual to be more restrictive than the Authority's requirements.
- 4.0 Each Air Operator Certificate holder shall ensure that the manual, in all of its parts together, shall contain all information required by each group of personnel addressed in that part, including —
- (a) general policies;
 - (b) duties and responsibilities of each crew member, appropriate members of the ground organisation, and management personnel; and
 - (c) reference to the appropriate Civil Aviation Regulations.
- 5.0 Flight dispatching and operational control, including procedures for co-coordinated dispatch or flight control or flight following procedures and maintenance control procedures, as applicable.
- 6.0 En route flight, navigation, and communication procedures, including procedures for the dispatch or release or continuance of flight if any item of equipment required for the particular type of operation becomes inoperative or unserviceable en route.
- 7.0 Appropriate information extracted from the operations specifications, such as areas of operation, each approved route, the aircraft model authorised, the type of operation such as VFR, IFR, day, night, etc., authorised aerodromes, instrument approach procedures authorised and any other pertinent information.
- 8.0 Procedures for familiarising passengers with the use of emergency equipment, during flight.
- 9.0 Emergency equipment and procedures.
- 10.0 The method of designating succession of command of flight crew members.
- 11.0 Procedures for determining the usability of landing and take-off areas, and for disseminating pertinent information thereon to operations personnel.
- 12.0 Procedures for operating in periods of ice, hail, thunderstorms, turbulence, or any potentially hazardous meteorological condition.
- 13.0 Airman training programs, including appropriate ground, flight, and emergency phases.
- 14.0 Procedures for refuelling aircraft, eliminating fuel contamination, protection from fire (including electrostatic protection), and supervising and protecting passengers during refuelling.
- 15.0 Methods and procedures for maintaining the aircraft mass and centre of gravity within approved limits.
- 16.0 Where applicable, pilot and dispatcher route and aerodrome qualification procedures.
- 17.0 Accident notification procedures.
- 18.0 Procedures and information to assist personnel to identify packages marked or labelled as containing hazardous materials and, if these materials are to be carried, stored, or handled, procedures and instructions relating to the carriage, storage, or handling of hazardous materials, including the following:

19.0 Procedures for determining the proper shipper certification and proper packaging, marking, labelling, shipping documents, compatibility of materials, and instructions on the loading, storage, and handling.

20.0 Notification procedures for reporting hazardous material incidents.

21.0 Instructions and procedures for the notification of the pilot in command when there are hazardous materials aboard.

22.0 Other information or instructions relating to safety.

23.0 The general section (Part A: General) of the operations manual may be based upon the following outline —

23.1 Administration and Control of Operations Manual

23.1.1 Introduction

- (a) A statement that the manual complies with all applicable Authority regulations and requirements and with the terms and conditions of the applicable Air Operator Certificate.
- (b) A statement that the manual contains operational instructions that are to be complied with by the relevant personnel in the performance of their duties.
- (c) A list and brief description of the various operations manual parts, their contents, applicability and use.
- (d) Explanations and definitions of terms and words used in the manual.

23.1.2 System of Amendment and Revision

- (a) An operations manual shall describe who is responsible for the issuance and insertion of amendments and revisions.
- (b) A record of amendments and revisions with insertion dates and effective dates is required.
- (c) A statement that hand-written amendments and revisions are not permitted except in situations requiring immediate amendment or revision in the interest of safety.
- (d) A description of the system for the annotation of pages and their effective dates.
- (e) A list of effective pages and their effective dates.
- (f) Annotation of changes (on text pages and as practicable, on charts and diagrams).
- (g) A system for recording temporary revisions.
- (h) A description of the distribution system for the manuals, amendments and revisions.
- (i) A statement of who is responsible for notifying the Authority of proposed changes and working with the Authority on changes requiring Authority approval.

23.2 Organisation and Responsibilities

23.2.1 Organisational Structure

23.2.1.1 A description of the organisational structure including the general company organisation and operations department organisation. The relationship between the operations department and the other departments of the company. In particular, the subordination and reporting lines of all divisions, departments etc., which pertain to the safety of flight operations, shall be shown.

23.2.2 Responsible Manager

23.2.2.1 The name of each manager responsible for flight operations, the maintenance system, crew training and ground operations shall be listed. A description of their function and responsibilities shall be included.

23.2.3 Responsibilities and Duties of Operations Management Personnel

23.2.3.1 A description of the duties, responsibilities and authority of operations management personnel pertaining to the safety of flight operations and with compliance with applicable regulations shall be listed.

23.3 Authority, Duties and Responsibilities of a Pilot In Command

23.3.1 A statement defining the authority, duties and responsibilities of the Pilot in Command shall be listed.

23.4 Duties and Responsibilities of Crew Members Other Than the Pilot In Command

23.4.1 A statement defining the authority, duties, and responsibilities of all required aircraft crew members shall be listed.

23.5 Duties and responsibilities of ground handling personnel

23.5.1 A statement defining the authority, duties, and responsibilities of all required ground handling personnel shall be listed.

24.0 Operational Control and Supervision

24.1 Supervision of the Operation by the Air Operator Certificate Holder

24.1.1 A description of the system for supervision of the operation by the Air Operator Certificate holder shall be listed. This description shall show how the safety of flight operations and the qualifications of personnel involved in all such operations are supervised and monitored. In particular, the procedures related to the following items shall be described -

- (a) Specifications for the operational flight plan
- (b) Competence of operations personnel; and
- (c) Control, analysis and storage of records, flight documents, additional information, and safety related data.

24.2 System of Promulgation of Additional Operational Instructions and Information

24.2.1 A description of any system for promulgating information which may be of an operational nature but is supplementary to that in the operations manual. The applicability of this information and the responsibilities for its promulgation shall be included

24.2.2 Accident Prevention and Flight Safety Programme

24.2.3 A description of the main aspects of the flight safety programme including —

- (a) Programmes to achieve and maintain risk awareness by all persons involved in flight operations; and
- (b) Evaluation of accidents and incidents and the promulgation of related information.

24.2.4 A description of the objectives, procedures and responsibilities necessary to exercise operational control with respect to flight safety.

25.0 Quality System

25.1 A description of the quality system adopted.

26.0 Crew Composition

26.1 An explanation of the method for determining crew compositions taking into account of the following —

- (a) Experience (total and on type), recency and qualification of the crew members; and
- (b) The designation of the Pilot in Command and, if required by the duration of the flight, the procedures for the relief of the Pilot in Command or other members of the flight crew.

27.0 Designation of the Pilot in Command

27.1 The rules applicable to the designation of a Pilot in Command.

28.0 Flight Crew Incapacitation

28.1 Instructions on the succession of command in the event of flight crew incapacitation.

29.0 Qualification Requirements

29.1. A description of the required license rating(s), qualification/competency (e.g. for routes and aerodromes) experience, training, checking and recency of experience for operations personnel to conduct their duties. Consideration shall be given to the aircraft type, kind of operation, and composition of the crew.

30.0 Flight Crew

30.1 Operation on more than one type or variant.

31.0 Cabin Crew

- (a) Senior cabin crew member.
- (b) Cabin crew member.
 - (i) Required cabin crew member.
 - (ii) Additional cabin crew member, and
 - (iii) Cabin crew member during familiarisation flights.
- (c) Operation on more than one type or variant.

32.0 Other Operations Personnel

32.1 Crew Health

32.1.1 Crew Health Precautions

32.1.1.1 The relevant regulations and guidance for crew members concerning health including —

- (a) Alcohol and other intoxicating liquor;
 - (b) Narcotics;
 - (c) Drugs;
 - (d) Sleeping tablets;
 - (e) Pharmaceutical preparations;
 - (f) Immunisation;
 - (g) SCUBA diving;
 - (h) Blood donation;
 - (i) Meal precautions prior to and during flight;
 - (j) Sleep and rest; and
 - (k) Surgical operations.
- (l) Operating Procedures
- (m) Flight Preparation Instructions

32.2 Criteria for Determining the Usability of Aerodromes

32.3 En route Operating Minima for VFR Flights

32.3.1 A description of en route operating minima for VFR flights or VFR portions of a flight and, where single-engine aircraft are used, instructions for route selection with respect to the availability of surfaces which permit a safe forced landing.

32.4 Presentation and Application of Aerodrome and En-route Operating Minima

32.5 Interpretation of Meteorological Information.

32.5.1 Explanatory material on the decoding of MET forecasts and MET reports relevant to the area of operations, including the interpretation of conditional expressions.

32.6 Determination of the Quantities of Fuel, Oil and Water Methanol Carried.

32.6.1 The methods by which the quantities of fuel, oil and water methanol to be carried are determined and monitored in flight. This section shall also include instructions on the measurement and distribution of the fluid carried on board. Such instructions shall take account of all circumstances likely to be encountered on the flight, including the possibility of in-flight replanning and of failure of one or more of the aircraft's power plants. The system for maintaining fuel and oil records shall also be described.

33.0 Mass and Centre of Gravity.

33.1 The general principles of mass and centre of gravity including —

- (a) The policy for using either standard and/or actual masses;
- (b) The method for determining the applicable passenger, baggage and cargo mass;
- (c) The applicable passenger and baggage masses for various types of operations and aircraft type;
- (d) General instruction and information necessary for verification of the various types of mass and balance documentation in use;
- (e) Last minute changes procedures; and
- (f) Seating policy/procedures.

33.2 List of Documents, Forms And Additional Information To Be Carried During A Flight.

34.0 Ground Handling Instructions

34.1 Fuelling Procedures.

34.1.1 A description of fuelling procedures, including -

- (a) Safety precautions during refuelling and defueling including when an APU is in operation or when a turbine engine is running and, if applicable, the propeller brakes are on;
- (b) Refuelling and de-fuelling when passengers are embarking, on board or disembarking ;
- (c) Precautions to be taken to avoid mixing fuels.
- (d) Method to ensure the required amount of fuel is loaded.

34.1.2 Aircraft, passengers and cargo handling procedures related to safety. A description of the handling procedures to be used when allocating seats, embarking or disembarking passengers and when loading or unloading the aircraft. Further procedures, aimed at achieving safety whilst the aircraft is on the ramp, shall also be given. Handling procedures shall include -

- (a) Sick passengers and persons with reduced mobility;
- (b) Permissible size and weight of hand baggage;
- (c) Loading and securing of items in the aircraft;
- (d) Special loads and classification of load compartments (i.e., dangerous goods, live animals, etc.);
- (e) Positioning of ground equipment;
- (f) Operation of aircraft doors;
- (g) Safety on the ramp, including fire prevention, blast and suction areas;
- (h) Start-up, ramp departure and arrival procedures;
- (i) Servicing of aircraft;
- (j) Documents and forms;
- (k) Multiple occupancy of aircraft seats.

35.0 Procedures for the Refusal of Embarkation.

35.1 Procedures to ensure that persons who appear to be intoxicated or who demonstrate by manner or physical indications that they are under the influence of alcohol or drugs, except medical patients under proper care, are refused embarkation.

36.0 Deicing and Anti-Icing on the Ground.

36.1 A description of the deicing and anti-icing policy and procedures for aircraft on the ground. These shall include descriptions of the types and effects of icing and other contaminants on aircraft while stationary, during ground movements and during take-off. In addition, a description of the fluid types used shall be given including —

- (a) Proprietary or commercial names;
- (b) Characteristics;
- (c) Effects on aircraft performance-.
- (d) Precautions during usage.

37.0 Flight Procedures

37.1 A description of flight procedures, including:

- (a) Standard operating procedures (SOP) for each phase of flight.
- (b) Instructions on the use of normal checklists and the timing of their use.
- (c) Departure contingency procedures.
- (d) Instructions on the maintenance of altitude awareness and the use of automated or flight crew altitude call-outs.
- (e) Instructions on the use of autopilots and auto-throttles in Instrument Meteorological Conditions.
- (f) Instructions on the clarification and acceptance of Air Traffic Control clearances, particularly where terrain clearance is involved.
- (g) Departure and Approach Briefings
- (h) Procedures for familiarization with areas, routes
- (i) Stabilized approach procedure.
- (j) Limitation on high rates of descent near the surface.
- (k) Conditions required to commence or to continue an instrument approach.
- (l) Instructions for the conduct of precision and non-precision instrument approach procedures.
- (m) Allocation of flight crew duties and procedures for the management of crew workload during night and IMC instrument approach and landing operations.

38.0 Navigation Procedures

38.1 A description of all navigation procedures relevant to the type(s) and area(s) of operation. Consideration shall be given to —

- (a) Standard navigational procedures including policy for carrying out independent cross-checks of keyboard

- entries where these affect the flight path to be followed by the aircraft, In-flight re-planning; and
- (b) Procedures in the event of system degradation.
- (c) Where relevant to the operations, the long range navigation procedures,
- (d) engine failure procedure for ETOPS and the nomination and utilisation of diversion aerodromes.
- (e) Instructions and training requirements for the avoidance of controlled flight into terrain and policy for the use of the ground proximity warning system (GPWS).
- (f) Policy, instructions, procedures and training requirements for the avoidance of collisions and the use of the airborne collision avoidance system (ACAS).
- (g) Information and instructions relating to the interception of civil aircraft including:
 - (i) Procedures, as prescribed in Civil Aviation (Rules of the Air) Regulations, for pilots-in-command of intercepted aircraft; and
 - (ii) Visual signals for use by intercepting and intercepted aircraft, as contained in International Civil Aviation Organisation Civil Aviation (Rules of the Air) Regulations.

39.0 Policy and Procedures for In-flight Fuel Management

39.1 Adverse and Potentially Hazardous Atmospheric Conditions.

39.1.1 Procedures for operating in, and/or avoiding, potentially hazardous atmospheric conditions including —

- (a) Thunderstorms;
- (b) Icing conditions;
- (c) Turbulence,
- (d) Wind shear;
- (e) Jet stream;
- (f) Volcanic ash clouds;
- (g) Heavy precipitation;
- (h) Sand storms;
- (i) Mountain waves; and
- (j) Significant Temperature inversions.

40.0 Operating Restrictions

- (a) Cold weather operations
- (b) Take-off and landing in turbulence
- (c) Low-level wind shear operations
- (d) Cross-wind operations (including tail wind components)
- (e) High temperature operations
- (f) High altitude operations

41.0 Incapacitation of Crew Members.

41.1 Procedures to be followed in the event of incapacitation of crew members in flight. Examples of the types of incapacitation and the means for recognising them shall be included.

42.0 Cabin Safety Requirements.

42.1 Procedures covering—

- (a) Cabin preparation for flight, in-flight requirements and preparation for landing including procedures for securing cabin and galleys.
- (b) Procedures to ensure that passengers are seated where, in the event that an emergency evacuation is required, they may best assist and not hinder evacuation from the aircraft;
- (c) Procedures to be followed during passenger embarkation and disembarkation; and
- (d) Procedures for fuelling with passengers on board, embarking, or disembarking.
- (e) Smoking on board.
- (f) Use of portable electronic equipment and cellular phones Passenger Briefing Procedures.

43.0 The contents, means and timing of passenger briefing.

43.1 Procedures for Use of Cosmic or Solar Radiation Detection Equipment – Aeroplanes intended to be operated above 15,000m (49,000 feet).

43.2 Procedures for the use of cosmic or solar radiation detection equipment and for recording its readings including actions to be taken in the event that limit values specified in the operations manual are exceeded. In addition, the procedures, including ATC procedures, to be followed in the event that a decision to descend or re-route is taken.

44.0 All Weather Operations

45.0 Use of the Minimum Equipment and Configuration Deviation List(s)

46.0 Non Revenue Flights

46.1 Procedures and limitations for —

- (a) Training flights;
- (b) Test flights;
- (c) Delivery flights,
- (d) Ferry flights;
- (e) Demonstration flights; and
- (f) Positioning flights, including the kind of persons who may be carried on such flights.

47.0 Oxygen Requirements

47.1 An explanation of the conditions under which oxygen shall be provided and used.

48.0 Transport of Dangerous Goods and Weapons

48.1 Information, instructions and general guidance on the transport of dangerous goods including —

- (a) Air Operator Certificate holder's policy on the transport of dangerous goods;
- (b) Guidance on the requirements for acceptance, labelling, handling, stowage and segregation of dangerous goods;
- (c) Procedures for responding to emergency situations involving dangerous goods;
- (d) Duties of all personnel involved; and
- (e) Instructions on the carriage of the Air Operator Certificate holder's employees

49.0 Transport of Weapons

49.1 The conditions under which weapons, munitions of war and sporting weapons may be carried.

50.0 Security

50.1 Security Policies and Procedures

50.1.1 A description of security policies and procedures for handling and reporting crime on board such as unlawful interference, sabotage, hijacking and bomb threats, including the search procedure checklist to be carried on board the aircraft.

51.0 Security Instructions and Guidance

51.1 Security instructions and guidance of a non-confidential nature which shall include the authority and responsibilities of operations personnel

52.0 Preventative Security Measures and Training

52.1 A description of preventative security measures and training. (Note: Parts of the security instructions and guidance may be kept confidential.)

53.0 Handling of Accidents and Occurrences

53.1 Procedures for the handling, notifying and reporting of accidents and occurrences. This section shall include -

- (a) Definitions of accidents and occurrences and the relevant responsibilities of all persons involved;
- (b) The descriptions of which company departments, Authorities or other institutions have to be notified by which means and in which sequence in case of an accident;
- (c) Special notification requirements in the event of an accident or occurrence when dangerous goods are being carried;
- (d) A description of the requirements to report specific occurrences and accidents;
- (e) The forms used for reporting and the procedure for submitting them to the Authority shall also be included; and
- (f) If the Air Operator Certificate holder develops additional safety related reporting procedures for its own internal

use, a description of the applicability and related forms to be used.

54.0 Rules of the Air

54.1 Rules of the Air including:

- (a) Territorial application of the Rules of the Air;
- (b) The circumstances during which a radio listening watch shall be maintained;
- (c) ATC clearances, adherence to flight plan and position reports;
- (d) The ground/air visual codes for use by survivors, description and use of signal aids; and
- (e) Distress and urgency signals.

THIRTEENTH SCHEDULE

TRAINING PROGRAMME (*Section 35(8)*)

1.0 The training segment of the operations manual (Part D: Training) may be based on the following outline —

1.1 Training Syllabi and Checking Programmes

1.2 General Requirements.

1.2.1 Training syllabi and checking programmes for all operations personnel assigned to operational duties in connection with the preparation and conduct of a flight (which includes the initiation, continuation, deviation and termination of a flight) shall be developed to meet the respective requirements of the Authority. An Air Operator Certificate holder may not use, nor may any person serve in a required crew member capacity or operational capacity unless that person meets the training and currency requirements established by the Authority for that respective position.

1.3 Flight Crew.

1.3.1 The training syllabi and checking programmes for flight crew members shall include —

- (a) A written training programme acceptable to the Authority that provides for initial, transition, difference, and recurrent training, as appropriate, for flight deck crew members for each type of aircraft flown by that crew member. This written training programme shall include both normal and emergency procedures training applicable for each type of aircraft flown by the crew member.
- (b) Adequate ground and flight training facilities and properly qualified instructors required to meet training objectives and needs.
- (c) A current list of approved training materials, equipment, training devices, simulators, and other required training items needed to meet the training needs for each type and variation of aircraft flown by the Air Operator Certificate holder.
- (d) Adequate number of ground check personnel and flight check pilots to ensure adequate training and checking of flight crew members.
- (e) A record system acceptable to the Authority to show compliance with appropriate training and currency requirements.

1.4 Cabin Crew.

1.4.1 The training syllabi and checking programmes for cabin crew members shall include -

- (a) Basic initial ground training covering duties and responsibilities.
- (b) Appropriate Authority rules and regulations.
- (c) Appropriate portions of the Air Operator Certificate holder's operating manual.
- (d) Appropriate emergency training as required by the Authority and the Air Operator Certificate holder's operating manual.
- (e) Appropriate flight training.
- (f) Appropriate recurrent, upgrade, or difference training, as required, to maintain currency in any type and variance of aircraft the crew member may be required to work in.
- (g) Maintain a training record system acceptable to the Authority to show compliance with all required training.

1.5 All Crew Members.

1.5.1 A written training programme shall be developed for all crew members in the emergency procedures appropriate to each make and model of aircraft flown in by the crew member. Areas shall include —

- (a) Instruction in emergency procedures, assignments, and crew co-ordination.
- (b) Individual instruction in the use of on board emergency equipment such as fire extinguishers, emergency breathing equipment, first aid equipment and its proper use, emergency exits and evacuation slides, and the

aircraft's oxygen system including the use of portable emergency oxygen bottles. Flight crew members shall also practice using their emergency equipment designed to protect them in case of a cockpit fire or smoke.

- (c) Training shall also include instruction in potential emergencies such as rapid decompression, ditching, fire fighting, aircraft evacuation, medical emergencies, hijacking, and disruptive passengers.
- (d) Scheduled recurrent training to meet Authority requirements.

1.6 All Operations Personnel.

1.6.1 The training syllabi and checking programmes for all operations personnel shall include—

- (a) Training in the safe transportation and recognition of all dangerous goods permitted by the Authority to be shipped by air. Training shall include the proper packaging, marking, labelling, and documentation of dangerous articles and magnetised materials.
- (b) All appropriate security training required by the Authority.
- (c) A method of providing any required notification of an accident or incident involving dangerous good.

1.7 Operations Personnel Other Than Crew Members

1.7.1 For operations personnel other than crew members (e.g., flight operations officer, handling personnel etc.), a written training programme shall be developed that pertains to their respective duties. The training programme shall provide for initial, recurrent, and any required upgrade training.

2.0 Procedures for Training and Checking

2.1 Proficiency Checking Procedures

2.2 Procedures to be applied in the event that personnel do not achieve or maintain the required standards.

2.3 Procedures Involving the Simulation of Abnormal or Emergency Situations.

2.3.1 Procedures to ensure that abnormal or emergency situations requiring the application of part or all of abnormal or emergency procedures, and simulation of Instrument Meteorological Conditions by artificial means, are not simulated during commercial air transportation flights.

3.0 Document Retention

3.1 Documentation to be stored and storage periods

3.1.1 An Air Operator Certificate holder shall retain all documentation required by the appropriate Authority, or the Authority of another State in which the Air Operator Certificate holder is operating for the time specified by the respective Authority, or for the time period needed to show compliance with appropriate regulations or this operations manual, whichever is longer.

FOURTEENTH SCHEDULE

AIRCRAFT OPERATING MANUAL (Section 37(10))

1.0 Each Air Operator Certificate applicant and Air Operator Certificate holder shall submit and maintain an aircraft operating manual. This segment usually Part B (Aircraft Operating Information) of the operations manual may be based on the following outline

- (a) General Information and Units of Measurement (e.g. aircraft dimensions), including a description of the units of measurement used for the operation of the aircraft type concerned and conversion tables.
- (b) Limitations- a description of the certified limitations and the applicable operational limitations including—
 - (i) Certification status;
 - (ii) Passenger seating configuration for each aircraft type including a pictorial presentation;
 - (iii) Types of operation that are approved (e.g. IFR/VFR, CAT II/III, flights in known icing conditions etc.);
 - (iv) Crew composition;
 - (v) Operating within mass and centre of gravity limitations;
 - (vi) Speed limitations;
 - (vii) Flight envelopes;
 - (viii) Wind limits including operations on contaminated runways;
 - (ix) Performance limitations for applicable configurations;

- (x) Runway slope;
 - (xi) Limitations on wet or contaminated runways;
 - (xii) Airframe contamination; and
 - (xiii) Post landing
- (c) Normal Procedures- The normal procedures and duties assigned to the crew, the appropriate checklists, the system for use of the checklists and a statement covering the necessary co-ordination procedures between flight and cabin crew. The following normal procedures and duties shall be included —
- (i) Pre-flight;
 - (ii) Pre-departure and loading;
 - (iii) Altimeter setting and checking;
 - (iv) Taxi, Take-off and Climb;
 - (v) Noise abatement;
 - (vi) Cruise and descent;
 - (vii) Approach, landing preparation and briefing;
 - (viii) VFR approach;
 - (ix) Instrument approach;
 - (x) Visual approach and circling;
 - (xi) Missed approach;
 - (xii) Normal landing;
 - (xiii) Post landing; and
 - (xiv) Operation on wet and contaminated runways.
- (d) Specific Flight Deck Procedures
- (i) Determining airworthiness of aircraft
 - (ii) Obtaining flight release
 - (iii) Initial cockpit preparation
 - (iv) Standard operating procedures
 - (v) Cockpit discipline
 - (vi) Standard call-outs
 - (vii) Communication;
 - (viii) Flight safety
 - (ix) Push-back and towing procedures
 - (x) Taxi guidelines and ramp signals
 - (xi) Take-off and climb out procedures
 - (xii) Choice of runway
 - (xiii) Take-off in limited visibility
 - (xiv) Take-off in adverse weather
 - (xv) Use and limitations of weather radar
 - (xvi) Use of landing lights
 - (xvii) Monitoring of flight instruments
 - (xviii) Power settings for take-off
 - (xix) Malfunctions during take-off
 - (xx) Rejected take-off decision
 - (xxi) Climb, best angle, best rate
 - (xxii) Sterile cockpit procedures
 - (xxiii) En route and holding procedures
 - (xxiv) Cruise control
 - (xxv) Navigation log book
 - (xxvi) Descent, approach and landing procedures
 - (xxvii) Reporting maintenance problems
 - (xxviii) (bb) How to obtain maintenance and service en route
- (e) Abnormal And Emergency Procedures- The manual shall contain a listing of abnormal and emergency procedures assigned to crew members with appropriate check-lists that include a system for use of the check-lists and a statement covering the

necessary co-ordination procedures between flight and cabin crew. The following abnormal and emergency procedures and duties shall be included —

- (i) Crew incapacitation;
- (ii) Fire and smoke drills;
- (iii) Unpressurised and partially pressurised flight; as applicable
- (iv) Exceeding structural limits such as overweight landing;
- (v) Exceeding cosmic radiation limits; as applicable
- (vi) Lightning strikes
- (vii) Distress communications and alerting ATC to emergencies;
- (viii) Engine failure;
- (ix) System failures;
- (x) Guidance for diversion in case of serious technical failure;
- (xi) Ground proximity warning;
- (xii) Aircraft Collision Avoidance System warning;
- (xiii) Windshear; and
- (xiv) Emergency landing/ditching.
- (xv) Aircraft evacuation
- (xvi) Fuel Jettisoning (as applicable) and Overweight Landing:
 - A. General considerations and policy
 - B. Fuel jettisoning procedures and precautions
- (xvii) Emergency Procedures:
 - (A) Emergency descent
 - (B) Low fuel
 - (C) Dangerous goods incident or accident
- (xviii) Interception procedures
- (xix) Emergency signal for cabin crew members
- (xx) Communication Procedures
- (xxi) Radio listening watch
- (f) Performance Data- Performance data shall be provided in a form in which it can be used without difficulty. Performance material which provides the necessary data to allow the flight crew to comply with the approved aircraft flight manual performance requirements shall be included to allow the determination of —
 - (i) Take-off climb limits - Mass, Altitude, Temperature;
 - (ii) Take-off field length limits (dry, wet, contaminated);
 - (iii) Net flight path data for obstacle clearance calculation or, where applicable, take-off flight path;
 - (iv) The gradient losses for banked climb outs;
 - (v) En route climb limits;
 - (vi) Approach climb limits;
 - (vii) Landing climb limits;
 - (viii) Landing field length limits (dry, wet, contaminated) including the effects of an in-flight failure of a system or device, if it affects the landing distance;
 - (ix) Brake energy limits; and
 - (x) Speeds applicable for the various flight stages (also considering wet or contaminated runways).
- (g) Supplementary Performance Data- Supplementary data covering Flights in icing conditions. The maximum crosswind and tailwind components for each aeroplane type operated and the reductions to be applied to these values having regard to gusts, low visibility, runway surface conditions, crew experience, use of autopilot, abnormal or emergency circumstances, or any other relevant operational factors. Any certified performance related to an allowable configuration, or configuration deviation, such as anti-skid inoperative, shall be included.
- (h) Other Acceptable Performance Data- If performance data, as required for the appropriate performance class, is not available in the approved AFM, then other data acceptable to the Authority shall be included. Alternatively, the operations manual may contain cross-reference to the approved data contained in the AFM where such data is not likely to be used often or in an emergency.
- (i) Additional Performance Data- Additional performance data where applicable including —
 - (i) All engine climb gradients;
 - (ii) Drift-down data;
 - (iii) Effect of de-icing/anti-icing fluids;
 - (iv) Flight with landing gear down;

- (v) For aircraft with 3 or more engines, one engine inoperative ferry flights; and
 - (vi) Flights conducted under the provisions of a configuration deviation list (CDL).
- (j) Flight Planning- Data and instructions necessary for pre-flight and in-flight planning including factors such as speed schedules and power settings. Where applicable, procedures for engines out operations, ETOPS and flights to isolated airports shall be included.
- (k) Fuel Calculations- The method for calculating fuel needed for the various stages of flight.
- (l) Mass and Balance- Instructions and data for the calculation of mass and balance including —
- (i) Calculation system (e.g. Index system);
 - (ii) Information and instructions for completion of mass and balance documentation, including manual and computer generated types;
 - (iii) Limiting mass and centre of gravity of the various versions;
 - (iv) Dry operating mass and corresponding centre of gravity or index.
- (m) Loading- Procedures and provisions for loading and securing the load in the aircraft.
- (n) Loading Dangerous Goods- The operations manual shall contain a method to notify the Pilot in Command when dangerous goods is loaded in the aircraft.
- (o) Survival and Emergency Equipment Including Oxygen- List of Survival Equipment to be carried and a checklist of the survival equipment to be carried for the routes to be flown and the procedures for checking the serviceability of this equipment prior to take-off. Instructions regarding the location, accessibility and use of survival and emergency equipment and its associated check list shall be included. In addition, Instructions illustrating the ground-air visual signal code for use by survivors shall also be included.
- (p) Oxygen Usage- The procedure for determining the amount of oxygen required and the quantity that it available. The flight profile, number of occupants and possible cabin decompression shall be considered. The information provided shall be in a form in which it can be used without difficulty.
- (q) Emergency Equipment Usage- A description of the proper use of the following emergency equipment, if applicable—
- (i) Life jackets
 - (ii) Life rafts
 - (iii) Medical kits/first aid kits
 - (iv) Survival kits
 - (v) Emergency locator transmitter (ELT)
 - (vi) Visual signalling devices
 - (vii) Evacuation slides
 - (viii) Emergency lighting
- (r) Emergency Evacuation Procedures- Instructions for Emergency Evacuation including Instructions for preparation for emergency evacuation including crew co-ordination and emergency station assignment.
- (s) Emergency Evacuation Procedures- A description of the duties of all members of the crew for the rapid evacuation of an aircraft and the handling of the passengers in the event of a forced landing, ditching or other emergency.
- (t) Aircraft Systems- A description of the aircraft systems, related controls and indications and operating instructions.

FIFTEENTH SCHEDULE

MASS AND BALANCE DATA CONTROL SYSTEM (*Section 46(6)*)

1.0 An Air Operator Certificate holder may determine the mass of the traffic load in accordance with the following mass values and tables for passengers and baggage as applicable to the passenger seating configuration of the airplane.

2.0 Each Air Operator Certificate holder shall compute the mass of passengers and checked baggage using either the actual weighed mass of each person and the actual weighed mass of baggage or the standard mass values specified in Tables 1 to 3 below except

where the number of passenger seats available is less than 10. In such cases passenger mass may be established by use of a verbal statement by or on behalf of each passenger and adding to it a predetermined constant to account for hand baggage and clothing.

3.0 The procedure specifying when to select actual or standard masses and the procedure to be followed when using verbal statements must be included in the Operations Manual.

4.0 If determining the actual mass by weighing, an Air Operator Certificate holder must ensure that passengers' personal belongings and hand baggage are included. Such weighing must be conducted immediately prior to boarding and at an adjacent location.

5.0 If determining the mass of passengers using standard mass values, the standard mass values in Tables 1 and 2 below must be used. The standard masses include hand baggage and the mass of any infant below 2 years of age carried by an adult on one passenger seat. Infants occupying separate passenger seats must be considered as children for the purpose of this sub-paragraph.

6.0 Mass values for passengers – 20 passenger seats or more

6.1 Where the total number of passenger seats available on an aeroplane is 20 or more, the standard masses of male and female in Table 1 are applicable. As an alternative, in cases where the total number of passenger seats available is 30 or more, the 'All Adult' mass values in Table 1 are applicable.

6.2 For the purpose of Table 1, holiday charter means a charter flight solely intended as an element of a holiday travel package. The holiday charter mass values apply provided that not more than 5% of passenger seats installed in the aeroplane are used for the non-revenue carriage of certain categories of passengers.

Table 1

Passenger seats	20 and more		30 and more
	Female	Male	All Adult
All flight except holiday charters	70	88	84
Holiday charters	69	83	76
Children	35	83	35

7.0 Mass values for passengers – 19 passenger seats or less.

7.1 Where the total number of passenger seats available on an aeroplane is 19 or less, the standard masses in Table 2 are applicable.

7.2 On flights where no hand baggage is carried in the cabin or where hand baggage is accounted for separately, 6 kg may be deducted from the above male and female masses. Articles such as an overcoat, an umbrella, a small handbag or purse, reading material or a small camera are not considered as hand baggage for the purpose of this sub-paragraph.

Table 2

Passenger seats	1-5	6-9	10-19
Male	104kg	96kg	92kg
Female	86kg	78kg	74kg
Children	35kg	35kg	35kg

8.0 Mass values for baggage

8.1 Where the total number of passenger seats available on the aeroplane is 20 or more than standard mass values given in Table 3 are applicable for each piece of checked baggage.

8.2 For aeroplanes with 19 passenger seats or less, the actual mass of checked baggage, determined by weighing, must be used.

8.3 For the purpose of Table 3:

- (i) Domestic flight means a flight with origin and destination within the borders of one State;
- (ii) Flights within the European region means flights, other than Domestic flights, whose origin and destination are within the area of Europe; and
- (iii) Intercontinental flight, other than flights within the European region, means a flight with origin and destination in different continents.

Table 3

20 or more passenger seats

Type of flight	Baggage standard mass
Domestic	11
Within the European	13
Intercontinental	15
All Other	13

9.0 If an Air Operator Certificate holder wishes to use standard mass values other than those contained in Tables 1 to 3 above, the operator must advise the Authority of the reasons and gain its approval in advance. The certificate holder must also submit to the Authority for approval a detailed weighing survey plan and apply the statistical analysis method.

10.0. After verification and approval by the Authority of the results of the weighing survey, the revised standard mass values are only applicable to that Air Operator Certificate holder. The revised standard mass values can only be used in circumstances consistent with those under which the survey was conducted. Where revised standard masses exceed those in Tables 1–3, then such higher values must be used.

11.0 On any flight identified as carrying a significant number of passengers whose masses, including hand baggage, are expected to exceed the standard passenger mass, an Air Operator Certificate holder must determine the actual mass of such passengers by weighing or by adding an adequate mass increment.

12.0 If standard mass values for checked baggage are used and a significant number of passengers check in baggage that is expected to exceed the standard baggage mass, an Air Operator Certificate holder must determine the actual mass of such baggage by weighing or by adding an adequate mass increment.

13.0 An Air Operator Certificate holder shall ensure that a pilot-in-command is advised when a non-standard method has been used for determining the mass of the load and that this method is stated in the mass and balance documentation.

SIXTEENTH SCHEDULE

PASSENGER BRIEFING CARDS (*Section 49 (1) (c)*)

1.0 Each Air Operator Certificate holder shall, at each exit seat, provide passenger information cards that include the following information in the primary language in which emergency commands are given by the crew —

- (a) Functions required of a passenger in the event of an emergency in which a crew member is not available to assist, including how to —
- (i) locate the emergency exit;
 - (ii) recognise the emergency exit opening mechanism;
 - (iii) comprehend the instructions for operating the emergency exit;
 - (iv) operate the emergency exit;
 - (v) assess whether opening the emergency exit will increase the hazards to which passengers may be exposed;
 - (vi) follow oral directions and hand signals given by a crew member;
 - (vii) stow or secure the emergency exit door so that it will not impede use of the exit;
 - (viii) assess the condition of an escape slide, activate the slide, and stabilise the slide after deployment to assist others in getting off the slide;
 - (ix) pass expeditiously through the emergency exit; and

- (x) assess, select, and follow a safe path away from the emergency exit.
- (b) A request that a passenger identify himself or herself to allow reseating if he or she —
 - (i) cannot perform the emergency functions stated in the information card;
 - (ii) has a non-discernible condition that will prevent him or her from performing the functions;
 - (iii) may suffer bodily harm as the result of performing one or more of those functions;
 - (iv) does not wish to perform those functions; or
 - (v) lacks the ability to read, speak, or understand the language or the graphic form in which instructions are provided by the Air Operator Certificate holder.

SEVENTEENTH SCHEDULE (section 35(3))

AERONAUTICAL DATA CONTROL SYSTEM

1.0 Each Air Operator Certificate holder shall provide aeronautical data for each airport used by the Air Operator Certificate holder which includes —

- (a) Aerodromes or heliports;
- (b) Facilities;
- (c) Public protection;
- (d) Navigational and communications aids;
- (e) Construction affecting take-off, landing, or ground operations;
- (f) Air traffic facilities;
- (g) Runways, clearways, and stop-ways;
- (h) Dimensions;
- (i) Surface;
- (j) Marking and lighting systems;
- (k) Elevation and gradient;
- (l) Displaced thresholds;
- (m) Location;
- (n) Dimensions;
- (o) Take-off or landing or both;
- (p) Obstacles —
 - (i) those affecting take-off and landing performance computations;
 - (ii) Controlling obstacles;
- (q) Instrument flight procedures;
- (r) Departure procedure;
- (s) Approach procedure;
- (t) Missed approach procedure.
- (u) Special information relating to —
 - (i) Runway visual range measurement equipment;
 - (ii) Prevailing winds under low visibility conditions.

EIGHTEENTH SCHEDULE (section 52(3))

WEATHER REPORTING SOURCES

1.0 The Authority approves and considers the following sources of weather reports satisfactory for flight planning or controlling flight movement —

- (a) Department of Meteorological Services.
- (b) Zimbabwe government-operated automated surface observation stations.
- (c) Zimbabwe government-operated supplemental aviation weather reporting stations.
- (d) Observations taken by airport traffic control towers.
- (e) Zimbabwe government-contracted weather observatories.
- (f) Any active meteorological office operated by a foreign state which subscribes to the standards and practices of the International Civil Aviation organisation conventions.
- (g) Any military weather reporting sources approved by the Authority.

- (h) Note: Use of military sources is limited to control of those flight operations which use military airports as departure, destination, alternate, or diversionary airports.
- (i) Near real time reports such as pilot reports, radar reports, radar summary charts, and satellite imagery reports made by commercial weather sources or other sources specifically approved by the Authority.
- (j) An Air Operator Certificate holder operated and maintained weather reporting system approved by the Authority.

2.0 No operator shall use automated systems which do not report all required items for a complete surface aviation weather report.

3.0 Meteorological offices are normally listed in the MET tables located in International Civil Aviation organisation Regional Air Navigation Plans.

NINETEENTH SCHEDULE (Section 53(2))

DE-ICING AND ANTI-ICING PROGRAMME

1.0 Contents of the Air Operator Certificate holder's ground de-icing and anti-icing programme shall include a detailed description of —

- (a) how the Air Operator Certificate holder determines that conditions are such that frost, ice, or snow may reasonably be expected to adhere to the aircraft and that ground de-icing and anti-icing operational procedures shall be in effect;
- (b) who is responsible for deciding that ground de-icing and anti-icing operational procedures shall be in effect;
- (c) the procedures for implementing ground de-icing and anti-icing operational procedures; and
- (d) the specific duties and responsibilities of each operational position or group responsible for getting the aircraft safely airborne while ground de-icing and anti-icing operational procedures are in effect.

2.0 Initial and annual recurrent ground training for flight crew and all other affected personnel (e.g. dispatchers/flight operations officers, ground crews, contract personnel) concerning the specific requirements of the approved programme and each person's responsibilities and duties under the approved programme specifically covering the following areas —

- (a) the use of holdover times;
- (b) aircraft de-icing/anti-icing procedures including inspection and check procedures and responsibilities;
- (c) communication procedures;
- (d) aircraft surface contamination (i.e. adherence of frost, ice or snow) and critical area identification, and how contamination adversely affects aircraft performance and flight characteristics;
- (e) types and characteristics of de-icing/anti-icing fluids;
- (f) cold weather pre-flight inspection procedures; and
- (g) techniques for recognising contamination on the aircraft.

3.0 The Air Operator Certificate holder's programme shall include procedures for flight crew members to increase or decrease the determined holdover time in changing conditions. The holdover time shall be supported by data acceptable to the Authority. If the maximum holdover time is exceeded, take-off is prohibited unless at least one of the following conditions exists —

- (a) a pre-take-off contamination check is conducted outside the aircraft (within five minutes prior to beginning take-off) to determine that the wings, control surfaces, and other critical surfaces, as defined in the Air Operator Certificate holder's programme, are free of frost, ice, or snow;
- (b) it is otherwise determined by an alternate procedure, approved by the Authority and in accordance with the Air Operator Certificate holder's approved programme, that the wings, control surfaces, and other critical surfaces are free of frost, ice, or snow; or
- (c) the wings, control surfaces, and other critical surfaces are de-iced again and a new holdover time is determined.

TWENTIETH SCHEDULE (section 54(6))

FLIGHT MONITORING SYSTEM

1.0 Each Air Operator Certificate holder shall have an approved flight following system established and adequate for the proper monitoring of each flight, considering the operations to be conducted.

2.0 For Air Operator Certificate holders having flight following centres, these centres shall be located at those points necessary to ensure —

- (a) the proper monitoring of the progress of each flight with respect to its departure at the point of origin and arrival at its destination, including intermediate stops and diversions; and
- (b) that the Pilot in Command is provided with all information necessary for the safety of the flight.

3.0 An Air Operator Certificate holder conducting charter operations may arrange to have flight following facilities provided by persons other than its employees, but in such a case the Air Operator Certificate holder continues to be primarily responsible for operational control of each flight.

4.0 Each Air Operator Certificate holder conducting charter operations using a flight following system shall show that the system has adequate facilities and personnel to provide the information necessary for the initiation and safe conduct of each flight to —

- (a) the flight crew of each aircraft; and
- (b) the persons designated by the certificate holder to perform the function of operational control of the aircraft.

5.0 Each Air Operator Certificate holder conducting charter operations shall show that the personnel required to perform the function of operational control are able to perform their duties.

air transport agreement.

TWENTY-FIRST SCHEDULE (Sections 117(2),125(1)(a),125(2),
125(3),126(2)(a),128(1),128(2),129(1)(a),129(4),129(4),129(7)(a),129(7)(c),130(4)(c),134(4)(d),132(8),134(5)(a))

Maximum duty hours for flight crew members

Table A—Maximum Flight Time Limits for Un-augmented Operations

Table A		
Flight Duty Period Start Time (Acclimated)		Permitted Flight Time
0:00	4:59	8:00
5:00	19:59	9:00
20:00	23:59	8:00

Table B—Flight Duty Period: Un-augmented Operations

Tables B								
Scheduled Flight Duty Period Start Time (Acclimated)		2-Pilot Flight Crew						
		Number of Operational Flight Segments						
		1	2	3	4	5	6	7
0:00	3:59	9:00	9:00	9:00	9:00	9:00	9:00	9:00
4:00	4:59	10:00	10:00	10:00	10:00	9:00	9:00	9:00
5:00	5:59	12:00	12:00	12:00	12:00	11:30	11:00	10:30
6:00	6:59	13:00	13:00	12:00	12:00	11:30	11:00	10:30
7:00	11:59	14:00	14:00	13:00	13:00	12:30	12:00	11:30
12:00	12:59	13:00	13:00	13:00	13:00	12:30	12:00	11:30
13:00	16:59	12:00	12:00	12:00	12:00	11:30	11:00	10:30
17:00	19:59	12:00	12:00	11:00	11:00	10:00	9:00	9:00
20:00	21:59	12:00	12:00	11:00	11:00	10:00	9:00	9:00
22:00	22:59	11:00	11:00	10:00	10:00	9:00	9:00	9:00
23:00	23:59	10:00	10:00	10:00	9:00	9:00	9:00	9:00

Table C to Part 117—Flight Duty Period: Augmented Operations

Tables C							
Flight Duty Period Start Time (Acclimated)		3-Pilot Flight Crew *			4-Pilot Flight Crew *		
		On board Rest Facility			On board Rest Facility		
		1	2	3	1	2	3
0:00	5:59	15:00	14:00	13:00	17:00	15:30	13:30
6:00	6:59	16:00	15:00	14:00	18:30	16:30	14:30
7:00	12:59	17:00	16:30	15:00	19:00	18:00	15:30
13:00	16:59	16:00	15:00	14:00	18:30	16:30	14:30

**Twenty Second Schedule (section 40)
Special Situation Passengers**

Infants

1.0 An air service operator shall ensure that an infant is—

- (a) only carried when properly secured in the arms or on the lap of an adult passenger, or with a child restraint device or in a sky cot provided the sky cot is –
- (b) restrained so as to prevent it from moving under the maximum accelerations to be expected in flight; and
- (c) fitted with a restraining device so as to ensure that the infant will not be thrown from such sky cot under the maximum accelerations to be expected in flight.

1.1 The operator shall ensure that precautions are taken to ensure that, at the times seat belts are required to be worn in flight, the infant carried in the sky cot will not be thrown from such sky cot under the maximum accelerations to be expected in flight.

1.2 No passenger may be responsible for the safety of more than one infant on board an aircraft.

- 1.3 Infants shall not be carried behind a bulkhead unless a child restraint device is used during critical phases of flight and during turbulence.
- 1.4 Sky cots may not be used during critical phases of flight.
- 1.5 Sky cots shall be positioned in such a way that they do not prevent or hinder the movement of adjacent passengers or block exits.
- 1.6 When an infant is carried in the arms or on the lap of a passenger, the seat belt, when required to be worn, shall be fastened around the passenger carrying or nursing the infant, but not around the infant.
- 1.7 When an infant is carried in the arms or on the lap of a passenger, the name of the infant shall be bracketed on the passenger list with the name of the person carrying or nursing the infant.
- 1.8 An infant may be seated in a car-type infant seat, approved for use in an aeroplane, provided —
- (a) the infant's seat is secured to the aircraft seat in accordance with the instructions provided with the child seat;
 - (b) the infant's seat is designed to be secured to a passenger seat by means of a single lap strap and face the same direction as the passenger seat;
 - (c) the lower part of the shell does not unreasonably extend beyond the forward position of the passenger seat cushion on which it rests;
 - (d) the infant's seat is secured to the passenger seat at all times during flight, even when it is unoccupied by the child;
 - (e) only the infant shall be removed from the aircraft in an emergency evacuation, not the infant's seat;
 - (f) the infant's seat is positioned in such a way that it does not prevent or hinder the movement of adjacent passengers or block exits;
 - (g) the infant's seat is not placed in an aisle seat, depending on cabin configuration;
 - (h) the infant's seat is used in accordance with infant weight limitations specified for such device; and
 - (i) the infant's seat is fitted with a single release harness, which secures the infant's lap, torso and shoulders, but designed that the child can easily be secured in or removed from it.
- 1.9 An infant or a car-type infant seat referred to in paragraph (i) shall not be located in—
- (a) the same row or row directly forward or aft of an overwing emergency exit; or
 - (b) in the same row as any other exit unless such exit and row are separated by a bulkhead.

Persons with disability

2.0 For carriage of persons with disabilities, an operator shall establish procedures, including identification, seating positions and handling in the event of an emergency, for the carriage of passengers with disabilities.

2.1 The operator shall ensure that—

- (a) a passenger with disability is not seated in the same row or a row directly forward or after of an emergency exit;
- (b) individual briefings on emergency procedures are given to a passenger with disability and his or her assistant, appropriate to the needs of such passenger; and
- (c) the person giving the briefing shall enquire as to the most appropriate manner of assisting the person with disability so as to prevent pain or injury to that person.

Carriage of a patient on a stretcher

3.0 In the case of the carriage of a patient on a stretcher an aircraft—

- (a) the stretcher shall be secured in such aircraft so as to prevent it from moving under the maximum accelerations likely to be experienced in flight and in an emergency alighting such as a ditching;
- (b) the patient shall be secured by an approved harness to the stretcher or aeroplane structure; and
- (c) an assistant shall accompany each stretcher patient.

3.1 A passenger with a splinted or artificial limb may travel unaccompanied provided—

- (a) he or she is able to assist himself or herself;
- (b) the affected limb or supporting aids shall not obstruct an aisle or any emergency exit or equipment.

3.2 If a passenger with a splinted or artificial limb cannot assist himself or herself then he or she shall be accompanied by an assistant approved by the pilot-in-command.

Persons with mental disability

4.0 For a person with a mental disability—

- (a) No operator shall allow the carriage of a person with mental disability in an aircraft unless -
 - (i) he or she is accompanied by an able-bodied assistant; and
 - (ii) a medical certificate has been issued by a medical practitioner certifying that the person with the mental disability is suitable for carriage by air and confirming that there is no risk of violence from such person.

4.1 The operator shall undertake the carriage of a person with a mental disability who, according to his medical history, may become violent, only after special permission has been obtained from the Authority.

4.2 Unless otherwise authorised by the Authority, the maximum number of passengers with disabilities, unaccompanied minors, or a combination of such passengers and minors, which may be carried by an air operator, is limited to one per unit of 20 passenger capacity or part thereof to a maximum of 10 such passengers or minors.

4.3 At least one assistant shall be carried for every group of five passengers with a disability or unaccompanied minors, or a part or combination thereof, and such assistant shall be assigned with the responsibility for the safety of such passengers or minors provided that the passengers with a disability can assist themselves.

4.4 In addition to the provisions of paragraph 4, for each one passenger with a disability who cannot assist himself or herself, an able-bodied assistant shall be assigned to solely assist such passenger.

4.5 The operator may establish procedures in lieu of the provisions of paragraph (4) and (5) for the carriage of children and passengers with disabilities provided that such procedures—

- (a) do not jeopardise aviation safety; and
- (b) prior written approval is obtained from the Authority.

Persons without documentation, deportees or persons in custody

5.0 For carriage of persons without documentation, deportees or persons in custody—

- (a) an air operator shall establish procedures for the carriage of persons without documentation, deportees or persons in custody to ensure the safety of the aeroplane and its occupants;
- (b) the Pilot In Command of the aircraft shall be notified by the operator prior to departure, of the intended carriage and the reason for carriage, of such persons.

PART III
CIVIL AVIATION (OPERATION OF AIRCRAFT – COMMERCIAL AIR TRANSPORT (AEROPLANES))

ARRANGEMENT OF SECTIONS

SUB PART I
PRELIMINARY PROVISIONS

Section

1. Title.
2. Application.

SUB PART II
GENERAL

3. Compliance with laws, regulations and procedures
4. Compliance by a foreign operator with laws, regulations and procedures of a State
5. Safety management
6. Use of psychoactive substances
7. Aircraft tracking

SUB PART III
FLIGHT OPERATIONS

8. Operating Considerations and Facilities
9. Operational Certification and Supervision
10. Surveillance of Operations by a foreign operator
11. Operations Manual
12. Operating Instructions-General
13. Inflight simulation of emergency situations
14. Checklists
15. Minimum Flight altitudes
16. Aerodrome Operating Minima
17. Threshold crossing height for 3D Instrument Approach Operations
18. Fuel and Oil Records
19. Crew- Pilot In Command
20. Passengers
21. Flight Preparation
22. Operational flight planning
23. Take-off alternate aerodrome
24. En-route alternate aerodromes
25. Destination alternate aerodromes
26. Meteorological conditions- VFR flights
27. Meteorological conditions-IFR flights
28. Visibility or cloud base
29. Icing conditions
30. Fuel requirements
31. Inflight fuel management
32. Refuelling with passengers on board
33. Oxygen supply
34. Time capability of cargo compartment fire suppression system
35. Inflight procedures-aerodrome operating minima
36. Meteorological observations
37. Hazardous flight conditions
38. Flight crew members at duty stations
39. Use of oxygen

40. Safeguarding of cabin crew and passengers in pressurised aeroplanes in the event of loss of pressurisation.
41. Inflight operational instructions
42. Instrument flight procedures
43. Aeroplane operating procedures for noise abatement
44. Aeroplane operating procedures for rates of climb, descent and landing performance
45. Duties of Pilot-In-Command
46. Duties of flight dispatcher
47. Additional requirements for operatives by aeroplanes with turbine engines beyond 60 Minutes to an enroute alternate aerodrome including extended diversion time operations (EDTO)_
48. Requirements for extended diversion time operations (EDTO)
49. Carry-on baggage
50. Additional requirements for single pilot operations under the instrument flight rules (IFR) or at night
51. Fatigue Management

SUB PART IV

AEROPLANE PERFORMANCE OPERATING LIMITATIONS

52. General.
53. Applicable to aeroplanes certificated in accordance with Parts IIIA and IIIB of Annex 8
54. Mass limitations
55. Obstacle data
56. Additional requirements for operations of single-engine turbine-powered aeroplanes at night or in Instrument Meteorological Conditions (IMC).

SUB PART V

AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

57. Instruments, equipment and flight documents to be installed or carried in aeroplanes
58. Aeroplane operated under Article 83 bis agreement
59. Aeroplanes on all flights
60. Marking of break-in points
61. Flight recorders
62. Flight data recorders (FDR), and aircraft data recording systems
63. FDR Recording technology
64. FDR Duration
65. Cockpit voice recorders and cockpit audio recording systems – application
66. CVR and CARS Recording technology
67. CVR and CARS duration
68. CVR - alternate power source
69. Data link recorders
70. Data link recorders – duration
71. Correlation of data link recorders
72. Flight crew-machine interface recordings-application
73. Flight crew-machine interface recordings-Duration
74. Correlation of flight crew machine interface recordings to recorded cockpit audios

SUB PART VI

FLIGHT RECORDERS — GENERAL

75. Flight Recorders General-Construction and installation
76. Operation
77. Continued serviceability
78. Flight recorder electronic documentation
79. Combination recorders

80. Flight recorder data recovery
81. All aeroplanes operated as VFR flights
82. All aeroplanes on flights over water
83. Landplanes
84. All aeroplanes on long-range over-water flights
85. All Aeroplanes on flights over designated land areas
86. All aeroplanes on high altitude flights
87. All aeroplanes in icing conditions
88. All aeroplanes operated in accordance with instrument flight rules
89. All aeroplanes over 5 700 kg — emergency power supply for electrically operated attitude indicating instruments
90. All aeroplanes when operated at night
91. Pressurised aeroplanes when carrying passengers — weather radar
92. All aeroplanes operated above 15 000 m (49 000 ft) — radiation indicator
93. All aeroplanes complying with noise certification
94. Mach number indicator
95. Aeroplanes required to be equipped with ground proximity warning systems (GPWS)
96. Aeroplanes carrying passengers — cabin crew seats
97. Emergency locator transmitter (ELT)
98. Location of aeroplane in distress
99. Aeroplanes required to be equipped with airborne collision avoidance system (ACAS II)
100. Requirements for pressure-altitude reporting transponders
101. Microphones
102. Turbo-jet aeroplanes — forward-looking wind shear warning system
103. All aeroplanes operated by a single pilot under IFR or at night
104. Aeroplanes 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)
105. Electronic flight bags- equipment
106. EFB Functions
107. EFB specific approval
108. Turbine Aeroplane - Runway Overrun Awareness and Alerting System (ROAAS)

SUB PART VII

AEROPLANE COMMUNICATION, NAVIGATION AND SURVEILLANCE EQUIPMENT

109. Communication equipment
110. Navigation equipment
111. Surveillance equipment
112. Installation
113. Electronic navigation data management

SUB PART VII

AEROPLANE CONTINUING AIRWORTHINESS

114. Operator's Continuing Airworthiness Responsibilities
115. Operator's maintenance control manual
116. Maintenance programme
117. Continuing airworthiness records
118. Continuing airworthiness information
119. Modifications and repairs
120. Approved maintenance organisation
121. Maintenance release

SUB PART VIII
AEROPLANE CONTINUING AIRWORTHINESS
SUB PART IX
AEROPLANE FLIGHT CREW

122. Composition of flight crew
123. Radio operator
124. Flight engineer
125. Flight navigator
126. Flight Crew member emergency duties
127. Flight crew member training programmes
128. Duties during critical phases of flight
129. Manipulation of the controls
130. Power to inspect
131. Qualifications recent experience- Pilot In Command and Co-Pilot
132. Pilot operating limitations and pairing requirements
133. Recent experience-cruise relief pilot
134. Pilot-in-Command area, route and aerodrome qualification
135. Pilot proficiency checks
136. Single pilot operations under the Instrument Flight Rules (IFR) or at night
137. Flight crew equipment
138. Pilot authorisation in lieu of a type rating
139. Licenses required
140. Pilot qualifications
141. Fitness of crew members
142. Special authorisation required for CAT II and III operations
143. Recording of flight time
144. Completion of technical logbook
145. Reporting mechanical irregularities
146. Reporting of facility and navigation aid inadequacies
147. Pilot privilege and limitations
148. Crew resource management (CRM) Training
149. Human Factors (HF) Training
150. Initial emergency equipment drills
151. Initial aircraft ground training flight crew
152. Initial flight training- flight crew member
153. Initial specialized operations training
154. Aircraft differences training
155. Use of synthetic flight trainers
156. Aircraft and instrument proficiency checks
157. Introduction of new equipment or procedures
158. Flight engineer proficiency checks
159. Supervised line flying pilots
160. Supervised line flying flight engineers
161. Route and area checks: pilot qualification
162. Low minimum authorization-PIC
163. Designated special aerodromes pilot in command qualification
164. Designated special airport qualifications aerodrome limitations
165. Recurrent training and checking-flight crew members
166. Check pilot training
167. Authorized instructor or synthetic flight trainer and authorized instructor training
168. Authorized instructor qualifications

- 169. Check pilot and authorized flight engineer qualifications
- 170. Check pilot designation, authorizations and limitations
- 171. Synthetic flight trainer approval
- 172. Line qualification- check pilot and instructor
- 173. Termination of a proficiency, competence or line checks
- 174. Recording of crew member qualifications
- 175. Monitoring of training and checking activities
- 176. Eligibility period

SUB PART X
FLIGHT DISPATCHER

- 177. Initial training- Flight Dispatcher
- 178. Competence checks- Flight Dispatcher
- 179. Flight dispatcher persons qualified in flight release
- 180. Line observations -Flight Dispatcher
- 181. Company procedure indoctrination
- 182. Recurrent training -Flight Dispatcher
- 183. Flight Dispatcher

SUB PART XI
MANUALS, LOGS AND RECORDS

- 184. Flight manual.
- 185. Operator's maintenance control manual
- 186. Maintenance Programme.
- 187. Journey log book
- 188. Records of emergency and survival equipment carried
- 189. Portable electronic devices
- 190. Flight recorder records

SUB PART XII
CABIN CREW

- 191. Initial aircraft ground training -Cabin crew members
- 192. Competency checks- Cabin crew members
- 193. Arming of automatic emergency exits
- 194. Accessibility of emergency exits and equipment
- 195. Stops where passengers remain on board
- 196. Assignment of emergency duties
- 197. Cabin crew at emergency evacuations stations
- 198. Protection of cabin crew during flight
- 199. Training

SUB PART XIII
SECURITY

- 200. Security of the flight crew compartment
- 201. Aeroplane search procedure checklist.
- 202. Training Programme
- 203. Reporting acts of unlawful interference
- 204. Stowage of weapons removed from passengers

SUB PART XIV
DANGEROUS GOODS

- 205. Operators with no specific approval for the transport of dangerous goods as cargo
- 206. Operators with a specific approval for the transport of dangerous goods as cargo
- 207. Provision of information

SUB PART XV
CARGO COMPARTMENT SAFETY

- 208. Transport of items in the cargo compartment
- 209. Fire protection
- 210. Repeal

SCHEDULES

- First Schedule; Lights to Be Displayed by Aeroplanes
- Second Schedule Organisation and contents of an operations manual
- Third Schedule Additional requirements for approved operations by single-engine turbine-powered aeroplanes at night and/or in instrument meteorological conditions (IMC)
- Fourth Schedule Altimetry System Performance Requirements for operations in RVSM Airspace
- Fifth Schedule Safety oversight of air operators
- Sixth Schedule Air operator certificate (AOC)
- Seventh Schedule Fatigue risk management system requirements
- Eighth Schedule Flight recorders
- Ninth Schedule Location of an aeroplane in distress
- Tenth Schedule Article 83 bis agreement summary
- Eleventh Schedule Marking of break-in points

Title

1. This Part may be cited as Operation of Aircraft-Commercial Air Transport (Aeroplanes) Regulations 2023.

Application

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

SUB PART II
GENERAL REQUIREMENTS

Compliance with laws, regulations and procedures

3(1) An operator shall ensure that all employees when abroad know that they must comply with the laws, regulations and procedures of those States in which operations are conducted.

(2) An 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 aerodromes to be used and the air navigation facilities relating thereto.

(3) An operator shall ensure that other members of the flight crew are familiar with these laws, regulations and procedures as are pertinent to the performance of their respective duties in the operation of the aeroplane.

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

(5) The operator shall delegate responsibility for operational control only to—

- (a) the pilot-in-command; or
- (b) flight dispatcher if operator's approved method of control and supervision of flight operations requires the use of a flight dispatcher.

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

(7) Where an emergency situation which endangers the safety of the aeroplane or persons necessitates the taking of action which involves a violation of local regulations or procedures, the pilot in command shall notify the appropriate local authority without delay.

(8) Where 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 Authority, and the reports shall be submitted as soon as possible and normally within ten days.

(9) An operator shall ensure that the pilot in command has available on board the aeroplane all the essential information concerning the search and rescue services in the area over which the aeroplane will be flown.

(10) An operator shall ensure that flight crew members demonstrate the ability to speak and understand the English language used for radiotelephony communications as specified in Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019.

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

4(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 Zimbabwe, 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 operator.

(2) Where the State of operator and the State of registry are different, the notification under subsection (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 subsections (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.

Safety management

5(1) An operator of an aeroplane of a certificated take-off mass in excess of 20 000 kg shall establish and maintain a flight data analysis programme as part of the 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(s) of the data in accordance with Third Schedule to Civil Aviation (Safety Management) Regulations.

(4) 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 (Aircraft Accident and Incident Investigation) Regulations, 2018 published in Statutory Instrument 78 of 2018, except where the recordings or transcripts are—

- (a) related to a safety-related event identified in the context of a safety management system;
- (b) restricted to the relevant portions of a de-identified transcript of the recording;
- (c) are subject to the protection accorded in Civil Aviation (Safety Management) Regulations;
- (d) 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 Civil Aviation (Safety Management) Regulations;
- (e) used for inspections of flight recorder systems as provided in the Eighth 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 Class C AIR and AIRS for purposes other than the investigation of an accident or incident in accordance with the Civil Aviation (Aircraft Accident and Incident Investigation) Regulations 2018 published in Statutory Instrument 78 of 2018, except where the recordings or transcripts are subject to the protections accorded by Civil Aviation(Safety Management) Regulations 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 required in this Part;
- (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.

(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.

Use of psychoactive substances

6(1) No member of a flight crew shall perform any function specified in the privileges applicable to his or her license where he or she is under the influence of any psychoactive substance which may render him or her unable to perform such functions in a safe and proper manner.

(2) No person whose function is critical to the safety of aviation (safety-sensitive personnel) shall undertake that function while under the influence of any psychoactive substance, by reason of which human performance is impaired.

(3) The person referred to in subsections (1) and (2) shall not engage in any kind of problematic use of substances as specified in accordance with the provisions in the Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018.

Aircraft tracking

7(1) An operator shall establish an aircraft tracking capability to track aeroplanes throughout its area of operations.

(2) An operator shall track the position of an aeroplane through automated reporting at least every 15 minutes for the portion or portions of the in-flight operations under the following conditions—

(a) the aeroplane has a maximum certificated take-off mass of over 5 700 kg and a seating capacity greater than 19; and

(b) where an ATS unit obtains aeroplane position information at greater than 15-minute intervals.

(3) An operator shall track the position of an aeroplane through automated reporting at least every 15 minutes for the portion or portions of the in-flight operations that is planned in an oceanic area or areas under the following conditions—

(a) the aeroplane has a maximum certificated take-off mass of over 27 000 kg and a seating capacity greater than 19; and

(b) where an ATS unit obtains aeroplane position information at greater than 15-minute intervals.

(4) Notwithstanding the provisions in subsection (2), the Authority may, based on the results of an approved risk assessment process implemented by the operator, allow for variations to automated reporting intervals.

(5) The risk assessment process referred to in subsection (4) shall demonstrate how risks to the operation resulting from such variations can be managed and shall include at least the following—

(a) capability of the operator's operational control systems and processes, including those for contacting ATS units;

(b) overall capability of the aeroplane and its systems;

(c) available means to determine the position of, and communicate with, the aeroplane;

(d) frequency and duration of gaps in automated reporting;

(e) human factors consequences resulting from changes to flight crew procedures; and

(f) specific mitigation measures and contingency procedures.

(6) An operator shall establish procedures, approved by the Authority, for the retention of aircraft tracking data to assist search and rescue (SAR) in determining the last known position of the aircraft.

SUB PART III
FLIGHT OPERATIONS

Operating considerations and facilities

8(1) An operator shall ensure that a flight does not commence unless it has been ascertained by every reasonable means available that the ground or water facilities available and directly required on such flight, for the safe operation of the aeroplane 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) An operator shall ensure that a flight does not commence or continue as planned unless it has been ascertained by every reasonable means available that the airspace containing the intended route from aerodrome of departure to aerodrome of arrival, including the intended take-off, destination and *en-route* alternate aerodromes, can be safely used for the planned operation.

(3) Where the operator intends to operate over or near conflict zones, a risk assessment shall be conducted and appropriate risk mitigation measures taken to ensure a safe flight.

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

(5) Subject to their published conditions of use, aerodromes and their facilities shall be kept continuously available for flight operations during their published hours of operations, irrespective of weather conditions.

(6) An operator shall, as part of its safety management system, assess the level of rescue and firefighting service or RFFS protection available at any aerodrome intended to be specified in the operational flight plan in order to ensure that an acceptable level of protection is available for the aeroplane intended to be used.

(7) Information related to the level of RFFS protection that is deemed acceptable by the operator shall be contained in the operations manual.

(8) An operator shall conduct a risk assessment and take appropriate risk mitigation measures to ensure a safe flight when intending to operate over or near conflict zones.

Operational Certification and Supervision

9(1) An operator shall not 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 authorise 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) An operator shall ensure that policies, procedures and facilities for subcontracted third parties referred to in subsection (4) are approved by the Authority.

(6) 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.

(7) The air operator certificate shall be in the form laid out in the Sixth Schedule and shall contain at least the following information—

(a) the state of the Operator and the issuing authority;

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

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

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

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

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

(a) Each aircraft model in the operator's fleet, identified by aircraft make, model and series including the list of authorisations, conditions and limitations;

(b) issuing authority contact details;

(c) operator name and AOC number;

(d) date of issue and signature of the authority representative;

(e) types and area of operations; and

(f) special limitations and authorisations.

(9) Air operator certificates and their associated operations specifications first issued from 20 November 2008 shall follow the layouts in the Sixth and Seventh Schedule.

(10) The Authority shall establish a system for both certification and the continued surveillance of the operator in accordance with the Fifth Schedule to this Part and the provisions of Civil Aviation (Safety Management) Regulations to ensure the required standards of operations established in this Part are maintained.

Surveillance of operations by a foreign operator

10(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 I and Annex 19.

(2) The Authority shall establish a programme with procedures for the surveillance of operations in the country by foreign operators to verify that they comply on a continuing basis with international standards, AOCs and corresponding operations specifications and take appropriate action when necessary to preserve safety.

(3) A foreign operator conducting aircraft operations in Zimbabwe shall comply with the requirements of this Part and any other applicable law to meet and maintain the requirements established by the Authority when operating in Zimbabwe.

Operations manual

11 (1) An operator shall provide, for the use and guidance of operations personnel concerned, an approved operation manual as described in the Second Schedule.

(2) The operator shall ensure that the operations manual is amended or revised as is necessary to ensure that the information contained therein is kept up to date and amendments or revisions shall be issued to all personnel that are required to use the manual.

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

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

Operating instructions — General

12(1) The 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) No person shall taxi an aeroplane on the movement area of an aerodrome unless the person —

(a) has been duly authorised by the operator or a designated agent;

(b) is fully competent to taxi the aeroplane;

(c) is qualified to use the radiotelephone; and

(d) has received instruction from a competent person in respect of aerodrome layout, routes, signs, markings, lights, air traffic control (ATC) signals and instructions, phraseology and procedures, and is able to conform to the operational standards required for safe aeroplane movement at the aerodrome.

(3) The operator shall issue operating instructions and provide information on aeroplane climb performance with all engines operating to enable the pilot-in-command to determine the climb gradient that can be achieved during the departure phase for the existing take-off conditions and intended take-off technique and this information shall be included in the operations manual.

In-flight simulation of emergency situations

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

Checklists

14(1) The 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 an emergency, to ensure compliance with the operating procedures contained in the aircraft operating manual and the aeroplane flight manual or other documents associated with the certificate of airworthiness and otherwise in the operations manual.

(2) The operator shall observe human factors principles in the design and utilisation of the checklists specified in subsection (1).

Minimum Flight altitudes

15(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 the State flown over or the responsible State.

(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 subsection (2) shall not be—

- (a) when over high terrain or in mountainous areas, lower than a level which is at least 600 m (2 000 ft), above the highest obstacle located within 8 km of the estimated position of the aircraft;
 - (b) elsewhere than as specified in paragraph (a), lower than a level which is at least 300 m (1 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft.
- (4) When determining the estimated position of the aircraft the operator shall take account of the navigational accuracy which can be achieved on the relevant route segment, having regard to the navigational facilities available on the ground and in the aircraft.
- (5) The method for establishing the minimum flight altitudes shall be approved by the Authority.
- (6) The Authority shall approve minimum flight altitudes method after consideration of the probable effects of the following factors on the safety of the operation—
- (a) the accuracy and reliability with which the position of the aeroplane can be determined;
 - (b) the inaccuracies in the indications of the altimeters used;
 - (c) the characteristics of the terrain, including sudden changes in the elevation;
 - (d) the probability of encountering unfavourable meteorological conditions, including severe turbulence and descending air currents;
 - (e) possible inaccuracies in aeronautical charts; and
 - (f) airspace restrictions.

Aerodrome operating minima

- 16(1) The Authority shall require that the operator establish aerodrome operating minima for each aerodrome to be used in operations and shall approve the method of determination of such minima.
- (2) The minima specified in subsection (1) shall not be lower than any that may be established for such aerodromes by the State of the aerodrome, except when specifically approved by that State.
- (3) The Authority shall authorise operational credit or credits for operations with advanced aircraft.
- (4) Where the operational credit relates to low visibility operations, the Authority shall issue a specific approval.
- (5) The authorisations specified in subsection (3) shall not affect the classification of the instrument approach procedure.
- (6) For the purpose of this regulation “Operational credit” includes—
- (a) for the purposes of an approach ban, a minima below the aerodrome operating minima;
 - (b) reducing or satisfying the visibility requirements; or
 - (c) requiring fewer ground facilities as compensated for by airborne capabilities.
- (7) When issuing a specific approval for the operational credit, the Authority shall ensure that the—
- (a) aeroplane 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 is more than one;
 - (c) operator has carried out a safety risk assessment of the operations supported by the equipment;
 - (d) operator has established and documented normal and abnormal procedures and MEL;
 - (e) operator has established a training programme for the flight crew members and relevant personnel involved in the flight preparation;
 - (f) operator 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 has instituted appropriate procedures in respect of continuing airworthiness (maintenance and repair) practices and programmes.
- (8) For operations with operational credit with minima above those related to low visibility operations, the State of the Operator shall establish criteria for the safe operation of the aeroplane.
- (9) The Authority shall require that in establishing the aerodrome operating minima which applies to any particular operation, the operator take full account of the following—
- (a) the type, performance and handling characteristics of the aeroplane and any conditions or limitations stated in the flight manual;
 - (b) the composition of the flight crew, their competence and experience;
 - (c) the dimensions and characteristics of the runways which may be selected for use;

- (d) the adequacy and performance of the available visual and non-visual ground aids;
- (e) the equipment available on the aeroplane for the purpose of navigation, acquisition of visual references and control of the flight path during the approach, landing and the missed approach;
- (f) the obstacles in the approach and missed approach areas and the obstacle clearance altitude or height for the instrument approach procedures;
- (g) the means used to determine and report meteorological conditions;
- (h) the obstacles in the climb-out areas and necessary clearance margins;
- (i) the conditions prescribed in the operations specifications; and
- (f) any minima that may be promulgated by the State of the Aerodrome.

(10) 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—

- (a) type A- a minimum descent height or decision height at or above 75 m (250 ft); and
- (b) type B- a decision height below 75 m (250 ft) which are categorised as follows
 - (i) 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;
 - (ii) 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
 - (iii) 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.

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

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

(13) For instrument approach operations, aerodrome operating minima below 800 m visibility shall not be authorised unless RVR information is provided.

(14) An 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.

(15) An operator shall establish operational procedures designed to ensure that an 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 (RVR.)

Threshold crossing height for 3D instrument approach operations

17. An operator shall establish operational procedures designed to ensure that an aeroplane being used to conduct 3D instrument approach operations crosses the threshold by a safe margin, with the aeroplane in the landing configuration and attitude.

Fuel and oil records

18(1) An operator shall maintain fuel records to enable the Authority to ascertain that, for each flight, the requirements of sections 30 and 31 have been complied with.

(2) An operator shall maintain oil records to enable the Authority to ascertain that trends for oil consumption are such that an aeroplane has sufficient oil to complete each flight.

(3) Fuel and oil records shall be retained by the operator for a period of 3 months.

Crew- Pilot In Command

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

(2) For each flight of an aeroplane above 15 000 m (49 000 ft), the operator shall maintain records so that the total cosmic radiation dose received by each crew member over a period of 12 consecutive months can be determined.

Passengers

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

- (a) seat belts;
- (b) emergency exits;

- (c) life jackets, where the carriage of life jackets is prescribed
- (d) oxygen dispensing equipment, where the provision of oxygen for the use of passengers is prescribed; and
- (e) other emergency equipment provided for individual use, including passenger emergency briefing cards.

(2) An operator shall inform the passengers 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 an aeroplane shall be secured in their seats by means of the seat belts or harnesses provided.

Flight Preparation

21 (1) No operator shall commence a flight until flight preparation forms have been completed certifying that the pilot-in-command is satisfied that—

- (a) the aeroplane is airworthy and the appropriate certificates of airworthiness and certificate of registration are on board the aeroplane;
- (b) the instruments and equipment prescribed in sub part V for the particular type of operation to be undertaken, are installed and are sufficient for the flight;
- (c) a maintenance release as prescribed in Civil Aviation (Air Operator Certification and Administration) Regulations, published in statutory instrument 87 of 2018 has been issued in respect of the aeroplane;
- (d) the mass of the aeroplane and centre of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;
- (e) any load carried is properly distributed and safely secured;
- (f) a check has been completed indicating that the operating limitations of this Part can be complied with for the flight to be undertaken; and
- (g) the requirements in section 22 have been complied with.

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

Operational flight planning

22(1) An operator shall complete an operational flight plan for every intended flight.

(2) The operational flight plan shall be approved and signed by the pilot-in-command and where applicable, signed by the flight dispatcher and a copy shall be filed with the operator or a designated agent, or, if these procedures are not possible, it shall be left with the aerodrome authority or on record in a suitable place at the point of departure.

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

Take-off alternate aerodrome

23(1) A take-off alternate aerodrome shall be selected and specified in the operational flight plan where either the meteorological conditions at the aerodrome of departure are below the operator's established aerodrome landing minima for that operation or if it would not be possible to return to the aerodrome of departure for other reasons.

(2) The take-off alternate aerodrome shall be located within the following flight time from the aerodrome of departure—

- (a) for aeroplanes with two engines, one hour of flight time at a one-engine-inoperative cruising speed, determined from the aircraft operating manual, calculated in International Standard Atmosphere (ISA) and still-air conditions using the actual take-off mass; or
- (b) for aeroplanes with three or more engines, two hours of flight time at an all engines operating cruising speed, determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass; or
- (c) for aeroplanes engaged in extended diversion time operations (EDTO) where an alternate aerodrome meeting the distance criteria under paragraphs (a) or (b) is not available, the first available alternate aerodrome located within the distance of the operator's specified maximum diversion time considering the actual take-off mass.

(3) For an aerodrome to be selected as a take-off alternate, the available information shall indicate that, at the estimated time of use, the conditions will be at or above the operator's established aerodrome operating minima for that operation.

En-route alternate aerodromes

24. En-route alternate aerodromes, required under section 47 for extended diversion time operations (EDTO) by aeroplanes with two turbine engines shall be selected and specified in the operational and air traffic services (ATS) flight plans.

Destination alternate aerodromes

25 (1) For a flight to be conducted in accordance with the instrument flight rules, at least one destination alternate aerodrome shall be selected and specified in the operational and ATS flight plans, unless—

(a) the duration of the flight from the departure aerodrome or from the point of in-flight re-planning, to the destination aerodrome is such that, taking into account all meteorological conditions and operational information relevant to the flight, at the estimated time of use, a reasonable certainty exists that—

(i) the approach and landing may be made under visual meteorological conditions; and

(ii) separate runways are usable at the estimated time of use of the destination aerodrome with at least one runway having an operational instrument approach procedure;

and

(b) the aerodrome is isolated and operations into isolated aerodromes do not require the selection of a destination alternate aerodrome or aerodromes and shall be planned in accordance with section 30 (3)—

(i) for each flight into an isolated aerodrome, a point of no return shall be determined; and

(ii) a flight to be conducted to an isolated aerodrome shall not be continued past the point of no return unless a current assessment of meteorological conditions, traffic and other operational conditions indicate that a safe landing can be made at the estimated time of use.

(2) Two destination alternate aerodromes shall be selected and specified in the operational and ATS flight plans when, for the destination aerodrome—

(a) meteorological conditions at the estimated time of use will be below the operator's established aerodrome operating minima for that operation; or

(b) meteorological information is not available.

(3) Notwithstanding the provisions of sections 23, 24 and subsections (1) and (2) of this section, the Authority may, based on the results of a specific safety risk assessment conducted by the operator which demonstrates how an equivalent level of safety shall be maintained, approve operational variations to alternate aerodrome selection criteria, and the specific safety risk assessment shall, include—

(a) capabilities of the operator;

(b) overall capability of the aeroplane and its systems;

(c) available aerodrome technologies, capabilities and infrastructure;

(d) quality and reliability of meteorological information;

(e) identified hazards and safety risks associated with each alternate aerodrome variation;

(f) specific mitigation measures.

Meteorological conditions - VFR Flights

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

Meteorological conditions- IFR Flights

27. A flight to be conducted in accordance with the instrument flight rules shall not—

(a) take off from the departure aerodrome unless the meteorological conditions, at the time of use, are at or above the operator's established aerodrome operating minima for that operation; and

(b) take off or continue beyond the point of in-flight re-planning unless at the aerodrome of intended landing or at each alternate aerodrome to be selected in compliance with sections 23, 24 and 25, current meteorological reports

or a combination of current reports and forecasts indicate that the meteorological conditions will be, at the estimated time of use, at or above the operator's established aerodrome operating minima for that operation.

Visibility or cloud base

28 (1) An 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 aerodrome operating minima to ensure that an adequate margin of safety is observed in determining whether or not an approach and landing can be safely carried out at each alternate aerodrome.

(2) The Authority shall approve a margin of time established by the operator for the estimated time of use of an aerodrome.

Icing conditions

29 (1) A flight to be operated in known or expected icing conditions shall not be commenced unless the aeroplane 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 take off unless the aeroplane has been inspected for icing and, where necessary, has been given appropriate de-icing or anti-icing treatment.

(3) An operator shall remove accumulation of ice or other naturally occurring contaminants so that the aeroplane is kept in an airworthy condition prior to take-off.

Fuel requirements

30(1) An operator shall ensure that an aeroplane carries sufficient amount of usable fuel to complete the planned flight safely and to allow for deviations from the planned operation.

(2) The amount of usable fuel to be carried shall, at a minimum, be based on—

(a) the following data—

(i) current aeroplane-specific data derived from a fuel consumption monitoring system, where available; or

(ii) where current aeroplane-specific data are not available, data provided by the aeroplane manufacturer; and

(b) the operating conditions for the planned flight including—

(i) anticipated aeroplane mass;

(ii) current meteorological reports or a combination of current reports and forecasts;

(iii) air traffic services procedures, restrictions and anticipated delays; and

(iv) the effects of deferred maintenance items and configuration deviations.

(3) The pre-flight calculation of usable fuel required shall include—

(a) taxi fuel, which shall be the amount of fuel expected to be consumed before take-off, taking into account local conditions at the departure aerodrome and auxiliary power unit (APU) fuel consumption;

(b) trip fuel, which shall be the amount of fuel required to enable the aeroplane to fly from take-off, or the point of inflight re-planning, until landing at the destination aerodrome taking into account the operating conditions of subsection (2);

(c) contingency fuel, which shall be the amount of fuel required to compensate for unforeseen factors and it shall be five *per centum* of the planned trip fuel or of the fuel required from the point of in-flight re-planning based on the consumption rate used to plan the trip fuel but, in any case, shall not be lower than the amount required to fly for five minutes at holding speed at 450 m (1 500 ft) above the destination aerodrome in standard conditions;

(d) destination alternate fuel, shall be—

(i) where a destination alternate aerodrome is required, the amount of fuel required to enable the aeroplane to—

A. perform a missed approach at the destination aerodrome;

B. climb to the expected cruising altitude;

C. fly the expected routing;

D. descend to the point where the expected approach is initiated; and

- E. conduct the approach and landing at the destination alternate aerodrome; or
 - (ii) where two destination alternate aerodromes are required, the amount of fuel, as calculated in paragraph (i), required to enable the aeroplane to proceed to the destination alternate aerodrome which requires the greater amount of alternate fuel; or
 - (iii) where a flight is operated without a destination alternate aerodrome, the amount of fuel required to enable the aeroplane to fly for 15 minutes at holding speed at 450 m (1 500 ft) above destination aerodrome elevation in standard conditions; or
 - (iii) where the aerodrome of intended landing is an isolated aerodrome—
 - A. for a reciprocating engine aeroplane, the amount of fuel required to fly for 45 minutes plus 15 *per centum* of the flight time planned to be spent at cruising level, including final reserve fuel, or 2 hours, whichever is less; or
 - B. for a turbine-engine aeroplane, the amount of fuel required to fly for two hours at normal cruise consumption above the destination aerodrome, including final reserve fuel.
 - (e) final reserve fuel, which shall be the amount of fuel calculated using the estimated mass on arrival at the destination alternate aerodrome, or the destination aerodrome when no destination alternate aerodrome is required—
 - (i) for a reciprocating engine aeroplane, the amount of fuel required to fly for 45 minutes, under speed and altitude conditions specified by the Authority; or
 - (ii) for a turbine-engine aeroplane, the amount of fuel required to fly for 30 minutes at holding speed at 450 m or 1 500 ft above aerodrome elevation in standard conditions;
 - (f) additional fuel, which shall be the supplementary amount of fuel required if the minimum fuel calculated in accordance with paragraph (b), (c), (d) and (e) is not sufficient to—
 - (i) allow the aeroplane to descend as necessary and proceed to an alternate aerodrome in the event of engine failure or loss of pressurisation, whichever requires the greater amount of fuel based on the assumption that such a failure occurs at the most critical point along the route—
 - A. fly for 15 minutes at holding speed at 450 m or 1 500 ft above aerodrome elevation in standard conditions; and
 - B. make an approach and landing;
 - (ii) allow an aeroplane engaged in EDTO to comply with the EDTO critical fuel scenario as established by the Authority;
 - (iii) meet additional requirements not covered above;
 - (g) Discretionary fuel - which shall be the extra amount of fuel to be carried at the discretion of the pilot-in-command.
- (4) An operator shall determine one final reserve fuel value for each aeroplane type and variant in their fleet rounded up to an easily recalled figure.
- (5) A pilot in command shall not commence a flight unless the usable fuel on board meets all the requirements in subsection (3) if required and shall not continue from the point of in-flight re-planning unless the usable fuel on board meets the requirements in subsection (3) (b), (c), (d), (e) and (f) if required.
- (6) Notwithstanding the provisions in subsection (3) (a), (b), (c), (d) and (f), the Authority may, based on the results of a specific safety risk assessment conducted by the operator which demonstrates how an equivalent level of safety will be maintained, approve variations to the pre-flight fuel calculation of taxi fuel, trip fuel, contingency fuel, destination alternate fuel, and additional fuel.
- (7) The specific safety risk assessment shall include —
- (a) flight fuel calculations;
 - (b) capabilities of the operator to include—
 - (i) a data-driven method that includes a fuel consumption monitoring programme; and
 - (ii) the advanced use of alternate aerodromes;
- and
- (c) specific mitigation measures.
- (8) 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.

In-flight fuel management

31(1) An operator shall establish policies and procedures, approved by the Authority, to ensure that inflight fuel checks and fuel management are performed.

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

(3) The pilot-in-command shall request delay information from ATC when unanticipated circumstances result in landing at the destination aerodrome with less than the final reserve fuel plus any fuel required to proceed to an alternate aerodrome or the fuel required to operate to an isolated aerodrome.

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

(5) The pilot-in-command shall declare a situation of fuel emergency by broadcasting “MAYDAY MAYDAY MAYDAY FUEL”, when the calculated usable fuel predicted to be available upon landing at the nearest aerodrome where a safe landing can be made is less than the planned final reserve fuel.

Refuelling with passengers on board

32(1) No person shall refuel an aeroplane when passengers are embarking, on board or disembarking unless the aeroplane is properly attended to by qualified personnel ready to initiate and direct an evacuation of the aeroplane by the most practical and expeditious means available.

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

(3) Every person shall observe additional precautions required when refuelling with fuels other than aviation kerosene or when refuelling results in a mixture of aviation kerosene with other aviation turbine fuels, or when an open line is used.

Oxygen supply

33(1) The approximate altitudes in the Standard Atmosphere corresponding to the values of absolute pressure used in this Part are as follows—

Absolute pressure	Metres	Feet
700 hPa	3000	10 000
620 hPa	4000	13 000
376 hPa	7600	25 000

(2) A flight to be operated at flight altitudes at which the atmospheric pressure in personnel compartments is 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; and
- (b) the crew and passengers for any period that the atmospheric pressure in compartments occupied by them will be less than 620 hPa.

(3) A flight to be operated with a pressurised aeroplane shall not be commenced unless a sufficient quantity of stored breathing oxygen is carried to supply all the crew members and passengers, as is appropriate to the circumstances of the flight being undertaken, in the event of loss of pressurisation, for any period that the atmospheric pressure in any compartment occupied by them would be less than 700 hPa.

(4) Where an aeroplane is operated at flight altitudes at which the atmospheric pressure is less than 376 hPa, or which, when 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.

Time capability of cargo compartment fire suppression system

34(1) An Operator shall ensure that, all flights are planned so that the diversion time to an aerodrome where a safe landing can be made does not exceed time for the cargo compartment fire suppression capability of the aeroplane, when the cargo compartment fire suppression capability time is identified in the relevant aeroplane documentation, reduced by an operational safety margin specified by the Authority.

(2) An operator shall ensure that the aircraft cargo compartment fire suppression time capabilities are clearly identified in the relevant aeroplane documentation when they are to be considered for the operation.

In-flight procedures -Aerodrome operating minima

35 (1) The Pilot in command shall not continue a flight towards the aerodrome of intended landing, unless the latest available information indicates that at the expected time of arrival, a landing can be effected at that aerodrome or at least one destination alternate aerodrome, in accordance with section 16.

(2) The pilot in command—

- (a) shall not continue an instrument approach below 300 m or 1 000 ft above the aerodrome elevation or into the final approach segment unless the reported visibility or controlling RVR is at or above the aerodrome operating minima;
- (b) after entering the final approach segment or after descending below 300 m or 1 000 ft above the aerodrome elevation, the reported visibility or controlling RVR falls below the specified minimum, he or she may continue the approach to DA/H or MDA/H;
- (c) shall not continue the approach-to-land at any aerodrome beyond a point at which the limits of the operating minima specified for that aerodrome would be infringed.

Meteorological observations

36. (1) Every operator shall ensure that flight crew record and report –

- (a) routine meteorological observations during enroute and climb out phases of the flight
- (b) special and non routine observations during any phase of the flight; and
- (c) volcanic activity

(2) The pilot-in-command shall report the runway braking action special air-report (AIREP) when the runway braking action encountered is not as good as was reported.

Hazardous flight conditions

37. 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.

Flight crew members at duty stations

38. (1) During take-off and landing all flight crew members are 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 aeroplane or for physiological needs.

(3) All flight crew members shall keep their seat belts fastened when at their stations except where it is necessary for the performance of their duties in connection of the aeroplane or for physiological needs.

(4) Any flight crew member occupying a pilot's seat shall keep the safety harness fastened during the take-off and landing phases whilst all other flight crew members shall keep their safety harnesses 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.

Use of oxygen

39. (1) All flight crew members, when engaged in performing duties essential to the safe operation of an aeroplane inflight, shall use breathing oxygen continuously whenever the circumstances prevail for which its supply has been required in section 33.

(2) All flight crew members of pressurised aeroplanes operating above an altitude where the atmospheric pressure is less than 376 hPa shall have available at the flight duty station a quick-donning type of oxygen mask which will readily supply oxygen upon demand.

Safeguarding of cabin crew and passengers in pressurized aeroplanes in the event of loss of pressurisation

40(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.

In-flight operational instructions

41. Operational instructions involving a change in the ATS flight plan shall, when practicable, be coordinated with the appropriate ATS unit before transmission to the aeroplane.

Instrument flight procedures.

42.(1) An operator shall comply with instrument approach procedures designed to support instrument approach operations approved and published by the Authority in the aeronautical information publication (AIP) to serve each instrument runway or aerodrome utilized for instrument flight operations for aerodromes located in Zimbabwe.

(2) An operator shall ensure that an aeroplane when operated in accordance with instrument flight rules shall comply with the instrument flight procedures approved by the State in which the aerodrome is located.

Aeroplane operating procedures for noise abatement.

43(1) An operator shall ensure that aeroplane operating procedures for noise abatement comply with the provisions contained in the technical guidance material.

(2) Noise abatement procedures referred to in subsection (1) by the operator for any one aeroplane type shall be the same for all aerodromes except where the same procedure may not satisfy the requirements at some aerodrome.

Aeroplane operating procedures for rates of climb, descent and Landing Performance

44 (1) Unless otherwise specified in an air traffic control instruction, to avoid unnecessary airborne collision avoidance system (ACAS II) resolution advisories in aircraft at or approaching adjacent altitudes or flight levels, operators shall specify procedures by which an aeroplane climbing or descending to an assigned altitude or flight level, especially with an autopilot engaged, shall do so at a rate less than 8 m/sec (1 500 ft/min), depending on the instrumentation available throughout the last 300 m (1 000 ft) of climb or descent to the assigned level when the pilot is made aware of another aircraft at or approaching an adjacent altitude or flight level.

(2) The pilot in command must ensure that an approach to land shall not be continued below 300 m (1 000 ft) above aerodrome elevation unless the pilot-in-command is satisfied that, with the runway surface condition information available, the aeroplane performance information indicates that a safe landing can be made.

Duties of Pilot-In-Command

45. (1) A pilot-in-command shall—

- (a) be responsible for the safety of all crew members, passengers and cargo on board when the doors are closed;
- (b) be responsible for the operation and safety of the aeroplane from the moment the aeroplane is ready to move for the purpose of taking off until the moment it finally comes to rest at the end of the flight and the engine or engines used as primary propulsion units are shut down;
- (c) ensure that the checklists specified in section 14 are complied with in detail;
- (d) be responsible for notifying the nearest appropriate authority by the quickest available means of any accident involving the aeroplane, resulting in serious injury or death of any person or substantial damage to the aeroplane or property;
- (e) be responsible for reporting all known or suspected defects in the aeroplane, to the operator, at the termination of the flight;

- (f) submit a report to the Authority of any accident which occurred while that pilot in command was responsible for the flight;
- (g) be responsible for the journey log book or the general declaration containing the information listed in Part VII Civil Aviation (Air Operator Certification and Administration) Regulations, published in statutory instrument 87 of 2018.

Duties of flight Dispatcher

46(1) Subject to section 9, a flight dispatcher shall—

- (a) assist the pilot-in-command in flight preparation and provide the relevant information;
 - (b) assist the pilot-in-command in preparing the operational and ATS flight plans, sign when applicable and file the ATS flight plan with the appropriate ATS unit;
 - (c) furnish the pilot-in-command while in flight, by appropriate means, with information which may be necessary for the safe conduct of the flight; and
 - (d) notify the appropriate ATS unit when the position of the aeroplane cannot be determined by an aircraft tracking capability, and attempts to establish communication are unsuccessful.
- (2) In the event of an emergency, a flight dispatcher shall—
- (a) initiate such procedures as outlined in the operations manual while avoiding taking any action that would conflict with ATC procedures; and
 - (b) convey safety-related information to the pilot-in-command that may be necessary for the safe conduct of the flight, including information related to any amendment to the flight plan that become necessary in the course of the flight.

Additional requirements for operations by aeroplanes with turbine engines beyond 60 minutes to an en-route alternate aerodrome including extended diversion time operations (EDTO)

47(1) Every operator conducting operations beyond 60 minutes from a point on a route to an en-route alternate aerodrome shall ensure that—

- (a) for all aeroplanes—
 - (i) en-route alternate aerodromes are identified; and
 - (ii) the most up-to-date information is provided to the flight crew on identified en-route alternate aerodromes, including operational status and meteorological conditions;
- (b) for aeroplanes with two turbine engines, the most up-to-date information provided to the flight crew indicates that conditions at identified en-route alternate aerodromes will be at or above the operator's established aerodrome operating minima for the operation at the estimated time of use.

(2) In addition to the requirements in subsection (1) all operators shall ensure that the following are taken into account and provide the overall level of safety intended by the provisions of this Part—

- (a) operational control and flight dispatch procedures;
- (b) operating procedures; and
- (c) training programs.

Requirements for extended diversion time operations (EDTO)

48.(1) Unless the Authority has issued a specific approval for EDTO, an aeroplane with two or more turbine engines shall not be operated on a route where the diversion time to an en-route alternate aerodrome from any point on the route, calculated in ISA and still-air conditions at the one-engine-inoperative cruise speed for aeroplanes with two turbine engines and at the all engines operating cruise speed for aeroplanes with more than two turbine engines, exceeds a threshold time established for such operations by the Authority.

(2) The specific approval referred to in subsection (1) shall identify the applicable threshold time established for each particular aeroplane and engine combination.

(3) On issuing the specific approval for extended diversion time operations, the Authority shall specify the maximum diversion time granted to the operator for each particular aeroplane and engine combination.

(4) When specifying the appropriate maximum diversion time for the operator of a particular aeroplane type engaged in extended diversion time operations, the Authority shall ensure that—

(a) for all aeroplanes—the most limiting EDTO significant system time limitation, if any, indicated in the aeroplane flight manual (directly or by reference) and relevant to that particular operation is not exceeded; and

(b) for aeroplanes with two turbine engines— the aeroplane is EDTO certified.

(5) Notwithstanding the provisions of subsection (4)(a), the Authority may, based on the results of a specific safety risk assessment conducted by the operator which demonstrates how an equivalent level of safety will be maintained, approve operations beyond the time limits of the most time-limited system.

(6) The specific safety risk assessment as provided in subsection (5) shall include—

(a) capabilities of the operator;

(b) overall reliability of the aeroplane;

(c) reliability of each time-limited system;

(d) relevant information from the aeroplane manufacturer; and

(e) specific mitigation measures.

(7) For aeroplanes engaged in EDTO, the additional fuel required under section 30 (3)(f)(ii) shall include the fuel necessary to comply with the EDTO critical fuel scenario as established by the Authority.

(8) An operator shall ensure that a flight does not proceed beyond the threshold time in accordance with subsection (1) unless the identified *en-route* alternate aerodromes have been re-evaluated for availability and the most up-to-date information indicates that, during the estimated time of use, conditions at those aerodromes will be at or above the operator's established aerodrome operating minima for the operation.

(9) An operator shall determine an alternative course of action where any conditions are identified that would preclude a safe approach and landing at that aerodrome during the estimated time of use.

(10) The Authority shall, when specifying maximum diversion times for aeroplanes with two turbine engines, ensure that the following are taken into account in providing the overall level of safety intended by the provisions of the Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018. —

(a) reliability of the propulsion system;

(b) airworthiness certification for EDTO of the aeroplane type; and

(c) maintenance programme.

Carry-on baggage

49. An operator shall ensure that all baggage carried onto an aeroplane and taken into the passenger cabin is adequately and securely stowed.

Additional requirements for single pilot operations under the instrument flight rules (IFR) or at night

50 (1) No operator shall allow operations under IFR or at night by a single pilot unless—

(a) approved by the Authority;

(b) the flight manual does not require a flight crew of more than one;

(c) the aeroplane is propeller-driven;

(d) the maximum approved passenger seating configuration is not more than nine;

(e) the maximum certificated take-off mass does not exceed 5 700 kg;

(f) the aeroplane is equipped as described in this Part; and

(g) the pilot-in-command has satisfied the requirements of experience, training, checking and recency described in section 136.

Fatigue management

51 (1) The Authority has established prescriptive flight time, flight duty period and duty period limitations and rest period requirements as outlined in the Civil Aviation (Air Operator Certification and Administration) Regulations, published in statutory instrument 87 of 2018..

(2) The prescriptive limits referred to in subsection (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) An operator, 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 limits established in the Civil Aviation (Air Operator Certification and Administration) Regulations, published in statutory instrument 87 of 2018.

(4) An 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.

(5) In approving an operator's flight time, flight duty period and duty period limitations and rest period requirements, the Authority—

- (c) shall require that the operator familiarize those personnel involved in managing fatigue with their responsibilities and the principles of fatigue management;
- (d) may approve, in exceptional circumstances, variations to this Part 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 limitations.
- (6) No operator shall implement non prescriptive fatigue management methods.

SUB-PART IV AEROPLANE PERFORMANCE OPERATING LIMITATIONS

General

52(1) An operator shall ensure that an aeroplane operates in accordance with requirements of Civil Aviation (Air Operator Certification and Administration) Regulations, published in statutory instrument 87 of 2018. (2) Except as provided for in section 56, an operator shall ensure that single-engine aeroplanes shall only be operated in conditions of weather and light, and over such routes and diversions therefrom, that permit a safe forced landing to be executed in the event of engine failure.

(3) An operator of an aeroplane for which Parts IIIA and IIIB of Annex 8 are not applicable because of the exemption provided for in Article 41 of the Convention, shall ensure that the level of performance specified in section 53 is met as far as practicable.

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

53(1) The provisions contained in this section are applicable to the large aeroplanes to which Parts IIIA and IIIB of Annex 8 are applicable.

(2) The level of performance defined by the appropriate provisions of the Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018 referred to in section 52(1) for large aeroplanes shall be at least substantially equivalent to the overall level embodied in this Part.

(3) An operator shall ensure that an aeroplane shall be 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 take such precautions as are reasonably possible to ensure that the general level of safety contemplated by these provisions is maintained under all expected operating conditions, including those not covered specifically by the provisions of this Part.

(5) An operator shall ensure that a flight is not be commenced unless the performance information provided in the flight manual, supplemented as necessary with other data acceptable to the Authority, indicates that the provisions of subsection (6) to subsection (12) can be complied with for the flight to be undertaken.

(6) In applying the provisions of this Part, an operator shall take into account all factors that significantly affect the performance of the aeroplane, including but not limited to—

- (a) the mass of the aeroplane;
- (b) the operating procedures;
- (c) the pressure-altitude appropriate to the elevation of the aerodrome,
- (d) the runway slope;
- (e) the ambient temperature;
- (f) the wind;
- (g) surface conditions of the runway at the expected time of use that may include—
 - (i) presence of snow;
 - (ii) slush;
 - (iii) water; or

- (iv) ice for landplanes;
- (v) water surface condition for seaplanes.

(7) The factors referred to in subsection (6) shall be taken into account directly as operational parameters or indirectly by means of allowances or margins, which shall be provided in the scheduling of performance data or in the comprehensive and detailed code of performance in accordance with which the aeroplane is being operated.

Mass limitations

54(1) The mass of the aeroplane at the start of take-off shall—

- (a) not exceed the mass at which subsection (2) is complied with, or the mass at subsections (5), (6) and (7) are complied with, allowing for expected reductions in mass as the flight proceeds, and for such fuel jettisoning as is envisaged in applying subsections (6) and (7) and, in respect of alternate aerodromes, subsections (1) (c) and (7);
- (b) not exceed the maximum take-off mass specified in the flight manual for the pressure-altitude appropriate to the elevation of the aerodrome, and, where used as a parameter to determine the maximum take-off mass, any other local atmospheric condition;
- (c) not exceed the estimated mass for the expected time of landing at the aerodrome of intended landing and at any destination alternate aerodrome, exceed the maximum landing mass specified in the flight manual for the pressure-altitude appropriate to the elevation of those aerodromes, and where used as a parameter to determine the maximum landing mass, any other local atmospheric condition; or
- (d) at the expected time of landing at the aerodrome of intended landing or at any destination alternate aerodrome, not exceed the relevant maximum masses at which compliance has been demonstrated with the applicable noise certification, unless otherwise authorised in exceptional circumstances for a certain aerodrome or a runway where there is no noise disturbance problem, by the competent authority of the State in which the aerodrome is situated.

(2) *Take off*: An operator shall ensure that an aeroplane in the event of a critical engine failing, or for other safety reasons, at any point in the take-off, is capable of, either discontinuing the take-off and stop within the accelerate-stop distance available, or continuing the take-off and clear all obstacles along the flight path by an adequate vertical or horizontal distance until the aeroplane is in a position to comply with subsection (6) and when determining the resulting take-off obstacle accountability area, the operator shall take into account the operating conditions, such as the crosswind component and navigation accuracy.

(3) In determining the length of the runway available, the operator shall take into account the loss, if any, of runway length due to alignment of the aeroplane prior to take-off.

(4) *En route* — one engine inoperative: An operator shall ensure that an aeroplane is able, in the event of the critical engine becoming inoperative at any point along the route or planned diversions therefrom, to continue the flight to an aerodrome at which provisions of subsection (6) can be met, without flying below the minimum flight altitude at any point.

(5) *En route* — two engines inoperative: In the case of aeroplanes having three or more engines, on any part of a route where the location of *en-route* alternate aerodromes and the total duration of the flight are such that the probability of a second engine becoming inoperative shall be allowed for if the general level of safety implied by this Part is to be maintained, an operator shall ensure that the aeroplane shall, in the event of any two engines becoming inoperative, be able to continue the flight to an *en-route* alternate aerodrome and land.

(6) *Landing*: An operator shall ensure that, at the aerodrome of intended landing and at any alternate aerodrome, after clearing all obstacles in the approach path by a safe margin—

- (a) an aeroplane is capable to land, with assurance that it can come to a stop;
- (b) a seaplane is capable of being reduced to a satisfactorily low speed; within the landing distance available.

(7) Allowance shall be made for expected variations in the approach and landing techniques, if such allowance has not been made in the scheduling of performance data.

Obstacle Data

55 (1) The Authority shall ensure that obstacle data is provided to enable the operator to develop procedures to comply with section 54 (4)

(2) An operator shall use the obstacle data referred to in subsection (1) to develop procedures to comply with section 54 (4).

(3) An operator shall take into account of charting accuracy when assessing compliance with section 54 (2).

Additional requirements for operations of single-engine turbine-powered aeroplanes at night or in instrument meteorological conditions (IMC)

56(1) No operator shall operate a single-engine piston powered aeroplane under instrument meteorological conditions (IMC) or at night.

(2) No operator shall operate a single engine turbine powered aeroplane under instrument meteorological conditions (IMC) or at night unless an approval for such operations is issued by the Authority.

(3) In approving operations by single-engine turbine-powered aeroplanes referred to in subsection (2), the Authority shall ensure that the airworthiness certification of the aeroplane is appropriate and that the overall level of safety intended by the provisions of the Third Schedule to this Part and to Civil Aviation (Air Operator Certification and Administration) Regulations, published in statutory instrument 87 of 2018. is provided by—

(a) the reliability of the turbine engine;

(b) the operator's maintenance procedures, operating practices, flight dispatch procedures and crew training programs; and

(c) equipment and other requirements provided in accordance with the Third Schedule.

(4) All single-engine turbine-powered aeroplanes operated at night or in IMC shall have an engine trend monitoring system and those aeroplanes for which the individual certificate of airworthiness is first issued on or after 1 January 2005 shall have an automatic trend monitoring system.

SUB PART V
AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

GENERAL

Instruments, equipment and flight documents to be installed or carried in aeroplanes

57(1) In addition to the minimum equipment necessary for the issuance of a certificate of airworthiness, the instruments, equipment and flight documents prescribed in subsections (3) to (5) shall be installed or carried, as appropriate, in aeroplanes according to the aeroplane used and to the circumstances under which the flight is to be conducted.

(2) The prescribed instruments and equipment, including their installation, shall be approved or accepted by the State of Registry.

(3) An aeroplane shall carry a certified true copy of the air operator certificate, and a copy of the operations specifications relevant to the aeroplane, issued in conjunction with the certificate:

Provided that where the certificate and the associated operations specifications are issued by the State of Operator in a language other than English, an English translation shall be included.

(4) An operator shall include in the operations manual a minimum equipment list (MEL), approved by the Authority in accordance with the Master Minimum Equipment List (MMEL) as outlined in the Twelveth Schedule, 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:

Provided that where Zimbabwe is not the State of Registry, the Authority shall ensure that the MEL does not affect the aeroplane's compliance with the airworthiness requirements applicable in the State of Registry.

(5) An operator shall provide operations staff and flight crew with an aircraft operating manual, which shall—

(a) include details of the aircraft systems and of the checklists to be used for each aircraft type operated;

(b) contain the normal, abnormal and emergency procedures relating to the operation of the aircraft; and

(c) be designed in a manner that observes Human Factors principles.

(6) The Aircraft Operating Manual referred to in subsection 5 shall be as specified in the Second Schedule.

Aeroplane operated under Article 83 bis agreement

58 (1) An operator when operating an aeroplane under an Article 83 *bis* agreement entered into between the State of Registry and the State of the Operator, shall carry on board the aeroplane a certified true copy of the agreement summary, in either an electronic or hard copy format:

Provided that where the summary is issued in a language other than English, an English translation shall be included.

- (2) An operator shall ensure that the agreement summary referred to in subsection (1) is —
- (a) accessible to a civil aviation safety inspector to determine which functions and duties are transferred under the agreement by the State of Registry to the State of the Operator when conducting surveillance activities, such as ramp checks; and
 - (b) transmitted to ICAO for registration with the ICAO Council.
- (3) The agreement summary shall contain the information and follow the layout specified in the Tenth Schedule.

Aeroplanes on all flights

59(1) An operator shall establish a procedure for the crew to evaluate a traveller with a suspected communicable disease, based on the presence of a fever and certain other signs or symptoms.

(2) The procedure referred to in subsection (1) shall include the transmission, as required, of a General Declaration form to the State authorities.

(3) An air operator shall establish procedures in the air operator's operations manual for the pilot-in-command to report promptly to air traffic control (ATC) a suspected communicable disease, with transmission of the following information:

- (a) Aircraft identification;
 - (b) Departure aerodrome;
 - (c) Destination aerodrome;
 - (d) Estimated time of arrival;
 - (e) Number of persons on board;
 - (f) Number of suspected cases on board; and
 - (g) Nature of the public health risk, if known.
- (4) An operator shall ensure that an aeroplane is equipped with instruments which will enable the flight crew to —
- (a) control the flight path of the aeroplane;
 - (b) carry out any required procedural manoeuvres; and
 - (c) observe the operating limitations of the aeroplane in the expected operating conditions.
- (5) An operator shall ensure that an aeroplane is equipped with—
- (a) accessible and adequate medical supplies which shall comprise of the following—
 - (i) one or more first-aid kits for the use of cabin crew in managing incidents of ill health;
 - (ii) for aeroplanes required to carry cabin crew as part of the operating crew, one universal precaution kit (two for aeroplanes authorised to carry more than 250 passengers) for the use of cabin crew members 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; and
 - (iii) for aeroplanes authorised to carry more than 100 passengers on a sector length of more than two hours, a medical kit for the use of medical doctors or other qualified persons in treating in-flight medical emergencies.
 - (b) portable fire extinguishers of a type which, when discharged, will not cause dangerous contamination of the air within the aeroplane, and at least one shall be located in—
 - (i) the pilot's compartment; and
 - (ii) 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 above;
 - (d) a seat belt for each seat and restraining belts for each berth;

- (e) a safety harness for each flight crew seat, with the safety harness for each pilot seat incorporating a device—
 - (i) which will automatically restrain the occupants torso in the event of rapid deceleration;
 - (ii) to prevent a suddenly incapacitated pilot from interfering with flight controls.
 - (f) means of ensuring that the following information and instructions are conveyed to passengers—
 - (i) when seat belts are to be fastened;
 - (ii) when and how oxygen equipment is to be used if the carriage of oxygen is required;
 - (iii) restrictions on smoking;
 - (iv) location and use of life jackets or equivalent individual flotation devices where their carriage is required;
 - (v) location and method of opening emergency exits; and
 - (g) 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 an aeroplane for which the individual certificate of airworthiness is first issued on or after 31 December 2011 and any extinguishing agent used in a portable fire extinguisher in an aeroplane 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 Layer, Annex A, Group II.
- (4) An operator shall ensure that an aeroplane carries—
- (a) an operations manual prescribed in this Part, or parts of it that pertain to flight operations;
 - (b) a flight manual for the aeroplane, or other documents containing performance data and any other information necessary for the operation of the aeroplane 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.

Marking of break-in points

- 60 (1) If areas of the fuselage suitable for break-in by rescue crews in an emergency are marked on an aeroplane, the operator shall ensure that such areas shall be marked as shown in the Eleventh Schedule.
- (2) The colour of the markings 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.

Flight recorders

- 61 (1) Crash-protected flight recorders comprise of one or more of the following—
- (a) a flight data recorder (FDR);
 - (b) a cockpit voice recorder (CVR);
 - (c) an airborne image recorder (AIR); or
 - (d) a data link recorder (DLR).
- (2) As per the Eighth Schedule of this Part, image and data link information may be recorded on either the CVR or the FDR.
- (3) Lightweight flight recorders comprise of one or more of the following—
- (a) an aircraft data recording system (ADRS);
 - (b) a cockpit audio recording system (CARS);
 - (c) an airborne image recording system (AIRS); or
 - (d) a data link recording system (DLRS).
- (4) As per the Eighth Schedule, image and data link information may be recorded on either the (CARS) or (ADRS).

Flight data recorders (FDR), and aircraft data recording systems

62 (1) An operator shall ensure that a turbine-engined aeroplane of a maximum certificated take-off mass of 5 700 kg or less for which the individual certificate of airworthiness is first issued on or after 1 January 2016 shall be equipped—

- (a) an FDR which shall record at least the first 16 parameters listed in table A8-1 in the Eighth Schedule of this Part; or
- (b) a class C (AIR) or (AIRS) which shall record at least the flight path and speed parameters displayed to the pilot or pilots; as defined in the Eighth Schedule of this Part; or
- (c) an ADRS which shall record at least the first 7 parameters listed in table A8-3 in the Eighth Schedule of this Part.

(2) An operator shall ensure that an aeroplane of a maximum certificated take-off mass of over 27 000 kg 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 32 parameters listed in table A8-1 of the Eighth Schedule of this Part.

(3) An operator shall ensure that an aeroplane of a maximum certificated take-off mass of over 5 700 kg, up to and including 27 000 kg, 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 16 parameters listed in table A8-1 of the Eighth Schedule of this Part.

(4) An operator shall ensure that a multi-engined turbine aeroplane of a maximum certificated take-off mass of 5 700 kg or less for which the individual certificate of airworthiness was first issued on or after 1 January 1990 shall be equipped with an FDR which shall record at least the first 16 parameters listed in table A8-1 of the Eighth Schedule of this Part.

(5) An operator shall ensure that a turbine-engined aeroplane, for which the individual certificate of airworthiness was first issued before 1 January 1989, with a maximum certificated take-off mass of over 5 700 kg, except those in subsection (7), shall be equipped with an FDR which shall record at least the first 5 parameters listed in table A8-1 to The Eighth Schedule of this Part.

(6) An operator shall ensure that a turbine-engined aeroplane, for which the individual certificate of airworthiness was first issued before 1 January 1987 but before 1 January 1989, with a maximum certificated take-off mass of over 5 700 kg, except those in subsection (7), shall be equipped with an FDR which shall record at least the first 9 parameters listed in table A8-1 of the Eighth Schedule of this Part.

(7) An operator shall ensure that a turbine-engined aeroplane, for which the individual certificate of airworthiness was first issued before 1 January 1987, with a maximum certificated take-off mass of over 27 000 kg that are of types of which the prototype was certificated by the appropriate national authority after 30 September 1969 shall be equipped with an FDR which shall record, in addition to the first 5 parameters listed in the table A8-1 of the Eighth Schedule of this Part, such additional parameters as are necessary to meet the objectives of determining—

- (a) the attitude of the aeroplane in achieving its flight path; and
- (b) the basic forces acting upon the aeroplane resulting in the achieved flight path and the origin of such basic forces.

(8) An operator shall ensure that an aeroplane of a maximum certificated take-off mass of over 5 700 kg for which the individual certificate of airworthiness was first issued after 1 January 2005 shall be equipped with an FDR which shall record at least the first 78 parameters listed in table A8-1 of the Eighth Schedule of this Part.

(9) An operator shall ensure that an aeroplane of a maximum certificated take-off mass of over 5 700 kg for which individual certificate of airworthiness is first issued to a Contracting State on or after 1 January 2023 shall be equipped with an FDR capable of recording at least the 82 parameters listed in table A8-1 of the Eighth Schedule to of this Part.

FDR -Recording technology

63. An operator shall ensure that FDRs or ADRS do not use engraving metal foil, frequency modulation, photographic film or magnetic tape.

FDR Duration

64 (1) An operator shall ensure that an FDR shall retain the information recorded during at least the last 25 hours of their operation, with exception of those installed on aeroplanes referred in section 62 (4) for which the FDR shall retain the information recorded during at least the last 30 minutes of its operation, and in addition sufficient information from the preceding take-off for calibration purpose.

Cockpit voice recorders and cockpit audio recording systems - application

65 (1) An operator shall ensure that turbine-engined aeroplanes of a maximum certificated take-off mass of 5 700 kg or less for which the individual certificate of airworthiness are first issued on or after 1 January 2016 and required to be operated by more than one pilot is equipped with either a CVR or a CARS.

(2) An operator shall ensure that all aeroplanes of a maximum certificated take-off mass of over 5 700 kg for which the individual certificate of airworthiness is first issued on or after 1 January 1987 are equipped with a CVR.

(3) An operator shall ensure that all turbine-engined aeroplanes, for which the individual certificate of airworthiness was first issued before 1 January 1987, with a maximum certificated take-off mass of over 5 700 kg that are of types of which the prototype was certificated by the appropriate national after 30 September 1969 are equipped with a CVRS.

CVR and CARS Recording technology

66. An operator shall ensure that CVRS and CARS do not use magnetic tape or wire.

CVR and CARS duration

67(1) An operator shall ensure that a CVR shall retain the information recorded during at least the last 2 hours of its operation.

(2) An operator shall ensure that an aeroplane of a maximum certificated take-off mass of over 27 000 kg for which the individual certificate of airworthiness was first issued on or after 1 January 2022 is equipped with a CVR which shall retain the information recorded during at least the last 25 hours of its operation.

(3) An operator shall ensure that an aeroplane that is required to be equipped with CARS for which the individual certificate of airworthiness is issued on or after 1 January 2025 is equipped with a CARS which shall retain the information recorded during at least the last 2 hours of the operation.

CVR - alternate power source

68 (1) An operator shall ensure that an aeroplane is installed with a CVR that has an alternate power source that shall automatically engage and provide 10 minutes, plus or minus one minute, of operation whenever aeroplane power to the recorder ceases, either by normal shutdown or by any other loss of power and the alternate power source shall power the CVR and its associated cockpit area microphone components.

(2) The CVR referred to in subsection (1) shall be located as close as practicable to the alternate power source.

(3) An operator shall ensure that all aeroplanes of a maximum certificated take-off mass of over 27 000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2018 is provided with an alternate power source, as specified in subsection (1).

Data link recorders

69 (1) An operator shall ensure that an aeroplane for which the individual certificate of airworthiness is first issued on or after 1 January 2016, which uses any of the data link communications applications referred to in the Eighth Schedule and is required to carry a CVR, shall record the data link communications messages on a crash-protected flight recorder.

(2) An operator shall ensure that an aeroplane for which the individual certificate of airworthiness was first issued before 1 January 2016, that is required to carry a CVR and is modified on or after 1 January 2016 to use any of the data link communications applications referred to in the Eighth Schedule, shall record the data link communications messages on a crash-protected flight recorder.

Data link recorders - duration

70. An operator shall ensure that the minimum recording duration shall be equal to the duration of the CVR.

Correlation of data link recorders

71. An operator shall ensure that data link recording shall be capable of being correlated with the recorded cockpit audio.

flight crew-machine interface recordings-Application

72. An operator shall ensure that an aeroplane of a maximum take-off mass of over 5 700 kg for which the application for type certification is submitted to a Contracting State on or after 1 January 2023, is equipped with a crash-protected flight recorder which shall record the information displayed to the flight crew from electronic displays, as well as the operation of switches and selectors by the flight crew, as defined in the Eighth Schedule of this Part.

flight crew-machine interface recordings- Duration

73. An operator shall ensure that the minimum flight crew-machine interface recording duration shall be at least for the last 2 hours of operation.

Correlation of flight crew machine interface recordings to recorded cockpit audios

74. An operator shall ensure that flight crew-machine interface recordings shall be able to be correlated to the recorded cockpit audio.

Flight Recorders General-Construction and installation

75 (1) An operator shall ensure that flight recorders—

- (a) are constructed, located and installed so as to provide maximum practical protection for the recordings so that the recorded information may be preserved, recovered and transcribed;
- (b) meet the prescribed crashworthiness and fire protection specifications.

Operation

76 (1) No person shall switch off flight recorders during flight time.

(2) To preserve flight recorder records, an operator shall ensure that flight recorders are deactivated upon completion of flight time following an accident or incident:

Provided that the flight recorders shall not be reactivated before their disposition as determined in accordance with Civil Aviation (Accident and Incident Investigations) Regulations, published in statutory instrument 78 of 2018.

Continued serviceability

77. An operator shall conduct operational checks and evaluations of recordings from the flight recorder systems to ensure the continued serviceability of the recorders in accordance with the Eighth Schedule to this Part.

Flight recorder electronic documentation

78. An operator shall provide to accident investigation authorities the documentation required concerning FDR and ADRS parameters in electronic format and take account of industry specifications.

Combination recorders

79 (1) An operator shall ensure that an aeroplane of a maximum certificated take-off mass of over 5 700 kg for which the application for type certification is submitted to a Contracting State on or after 1 January 2016, and which is required to be equipped with both a CVR and an FDR, is equipped with two combination recorders (FDR and CVR) with one recorder located as close to the cockpit as practicable and the other located as far aft as practicable.

(2) An operator of an aeroplane of a maximum certificated take-off mass over 5 700 kg, required to be equipped with an FDR and a CVR, may alternatively be equipped with two combination recorders (FDR/CVR).

Flight recorder data recovery

80 (1) An operator shall ensure that an aeroplane of a maximum certificated take-off mass of over 27 000 kg and authorised to carry more than nineteen passengers for which the application for type certification is submitted to a Contracting State on or after 1 January 2021, shall be equipped with a means approved by the Authority, to recover flight recorder data and make it available in a timely manner.

(2) In approving the means to make flight recorder data available in a timely manner, the Authority shall take into account the following—

- (a) the capabilities of the operator;

- (b) overall capability of the aeroplane and its systems as certified by the State of Design;
- (c) the reliability of the means to recover the appropriate CVR channels and appropriate FDR data; and
- (d) specific mitigation measures.

All aeroplanes operated as VFR flights

- 81(1) An operator shall ensure that an aeroplane when operated as VFR flights shall be equipped with—
- (a) a magnetic compass;
 - (b) an accurate timepiece indicating the time in hours, minutes and seconds;
 - (c) a sensitive pressure altimeter;
 - (d) an airspeed indicator; and
 - (e) such additional instruments or equipment as may be prescribed by the Authority.
- (2) VFR flights which are operated as controlled flights shall be equipped in accordance with section 88.

All aeroplanes on flights over water

Seaplanes

- 82 (1). An operator of a seaplane shall ensure that a seaplane for all flights 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;
 - (b) equipment for making the sound signals prescribed in the International Regulations for Preventing Collisions at Sea, where applicable; and
 - (c) one sea anchor (drogue).

Landplanes

83 (1) An operator of a landplane shall ensure that a landplane shall carry 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 when—

- (a) flying over water and at a distance of more than 93 km (50 NM) away from the shore, in the case of landplanes operated in accordance with section 54 (4) or 54 (5);
- (b) flying en route over water beyond gliding distance from the shore, in the case of all other landplanes; and
- (c) taking off or landing at an aerodrome 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 a likelihood of a ditching.

(2) The equipment referred to in subsection (1) shall comprise 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) Life jackets accessible from seats or berths located in crew rest compartments are required only when the seats or berths concerned are certified to be occupied during take-off and landing.

All aeroplanes on long-range over-water flights

84 (1) An operator shall ensure that in addition to the equipment referred to in section 82 and 83, whichever is applicable, the following equipment shall be installed in all aeroplanes when used over routes on which the aeroplane may be over water and at more than a distance corresponding to 120 minutes at cruising speed or 740 km (400 NM), whichever is the lesser, away from land suitable for making an emergency landing in the case of aircraft operated in terms of sections 54 (4) and 54 (5), and 30 minutes or 185 km (100 NM), whichever is the lesser, for all other aeroplanes—

- (a) 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;
- (b) equipment for making the pyrotechnical distress signals described in Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018;
- (c) on all aeroplanes of a maximum certificated take-off mass of over 27 000 kg, a securely attached underwater locating device operating at a frequency of 8.8 kHz, which is automatically activated underwater, and operates for a minimum of thirty days and shall not be installed in wings or empennage.

(2) Each life jacket and equivalent individual flotation device, when carried in terms of sections 82(1)(a), and 83(1), shall be equipped with a means of electric illumination for the purpose of facilitating the location of persons, except where the requirements in section 83 (1)(c) are met by the provision of individual flotation devices other than life jackets.

All Aeroplanes on flights over designated land areas

85. When operating across land areas which have been designated by the State concerned as areas in which search and rescue would be especially difficult, an operator shall ensure that the aeroplane is equipped with such signalling devices and life-saving equipment, including means of sustaining life as may be appropriate to the area overflown.

All aeroplanes on high altitude flights

86 (1) Approximate altitude in the Standard Atmosphere corresponding to the value of absolute pressure used in this section is as follows:

Absolute pressure	Metres	Feet
700 hPa	3000	10 000
620 hPa	4000	13 000
376 hPa	7600	25 000

(2) An operator shall ensure that an aeroplane intended to be operated at flight altitudes at which the atmospheric pressure is less than 700 hPa in personnel compartments shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the oxygen supplies required in terms of section 33(2).

(3) An operator shall ensure that an aeroplane intended to be operated at flight altitudes at which the atmospheric pressure is less than 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 terms of section 33(3).

(4) An operator shall ensure that all pressurised aeroplanes intended to be operated at flight altitudes at which the atmospheric pressure is less than 376 hPa shall be equipped with a device to provide positive warning to the flight crew of any dangerous loss of pressurisation.

(5) An operator shall ensure that an aeroplane intended to be operated at flight altitudes at which the atmospheric pressure is less than 376 hPa, or which, when operated at flight altitudes at which the atmospheric pressure is more than 376 hPa, cannot descend safely within 4 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 in terms of section 33(3).

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

All aeroplanes in icing conditions

87. An operator shall ensure that an aeroplane is equipped with suitable de-icing or anti-icing devices when operated in circumstances in which icing conditions are reported to exist or are expected to be encountered.

All aeroplanes operated in accordance with instrument flight rules

88 (1) An operator shall ensure that an aeroplane when operated in accordance with the instrument flight rules, or when the aeroplane cannot be maintained in a desired attitude without reference to one or more flight instruments, shall be equipped with—

- (a) a magnetic compass;
- (b) an accurate timepiece indicating the time in hours, minutes and seconds;
- (c) two sensitive pressure altimeters with counter drum-pointer; or equivalent presentation;
- (d) an airspeed indicating system with means of preventing malfunctioning due to either condensation or icing;
- (e) a turn and slip indicator;
- (f) an attitude indicator (artificial horizon);
- (g) a heading indicator (directional gyroscope);

- (h) a means of indicating whether the power supply to the gyroscopic instrument is adequate;
- (i) a means of indicating in the flight crew compartment the outside air temperature;
- (j) a rate-of-climb and descent indicator; and
- (k) such additional instruments or equipment as may be prescribed by the Authority.

(2) The requirements of subsection 1(e), (f) and (g) may be met by combinations of instruments or by integrated flight director systems provided that the safeguards against total failure, inherent in the three separate instruments, are retained.

All aeroplanes over 5 700 kg — emergency power supply for electrically operated attitude indicating instruments

89 (1) An operator shall ensure that an aeroplane of a maximum certificated take-off mass of over 5 700 kg newly introduced into service after 1 January 1975 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 pilot-in-command.

(2) The emergency power supply referred to in subsection (1) must 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 indicators are being operated by emergency power.

(3) The instruments used by any one pilot shall be so arranged as to permit the pilot to see their indications readily from his or her station, with the minimum practicable deviation from the position and line of vision normally assumed when looking forward along the flight path.

All aeroplanes when operated at night

90 (1) An operator shall ensure that an aeroplane when operated at night shall be equipped with—

- (a) all equipment specified in section 88 and 89;
- (b) the lights required by the Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018 and the specifications for the lights in the First Schedule for aircraft in flight or operating on the movement area of an aerodrome;
- (c) two landing lights;
- (d) illumination for all instruments and equipment that are essential for the safe operation of the aeroplane that are used by the flight crew;
- (e) lights in all passenger compartments; and
- (f) an independent portable light for each crew member station.

Pressurised aeroplanes when carrying passengers — weather radar

91. An operator shall ensure that a pressurised aeroplane when carrying passengers shall be equipped with operative weather radar whenever such aeroplanes are being operated in areas where thunderstorms or other potentially hazardous weather conditions, regarded as detectable with airborne weather radar, may be expected to exist along the route either at night or under instrument meteorological conditions.

All aeroplanes operated above 15 000 m (49 000 ft) — radiation indicator

92. (1) An operator shall ensure that an aeroplane intended to be operated above 15 000 m (49 000 ft) shall carry equipment to measure and indicate continuously the dose rate of total cosmic radiation received, being the total of ionizing and neutron radiation of galactic and solar origin, and the cumulative dose on each flight.

(2) The display unit of the equipment shall be readily visible to a flight crew member.

All aeroplanes complying with noise certification

93. An operator shall ensure that an aeroplane carries a document attesting noise certification and where 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.

Mach number indicator

94. An operator shall ensure that an aeroplane with speed limitations expressed in terms of Mach number shall be equipped with a Mach number indicator.

Aeroplanes required to be equipped with ground proximity warning systems (GPWS)

95 (1) An operator shall ensure that all turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg or authorised to carry more than nine passengers shall be equipped with a ground proximity warning system which has a forward-looking terrain avoidance function.

(2) An operator shall implement database management procedures that ensure the timely distribution and update of current terrain and obstacle data to the ground proximity warning system.

(3) An operator shall ensure that all turbine-engined aeroplanes of a maximum certificated take-off mass of 5 700 kg or less and authorised to carry more than five but not more than nine passengers is equipped with a ground proximity warning system which provides the warnings excessive descent rate and excessive altitude loss after take-off or go-around, warning of unsafe terrain clearance and a forward-looking terrain avoidance function.

(4) An operator shall ensure that a piston-engined aeroplane of a maximum certificated take-off mass in excess of 5 700 kg or authorised to carry more than nine passengers is equipped with a ground proximity warning system which provides the warnings in excessive descent rate and excessive altitude loss after take-off or go-around, warning of unsafe terrain clearance and a forward-looking terrain avoidance function.

(5) A ground proximity warning system shall provide automatically a timely and distinctive warning to the flight crew when the aeroplane is in potentially hazardous proximity to the earth's surface.

(6) A ground proximity warning system referred to in subsection (1) shall provide, unless otherwise specified herein, warnings of the following circumstances—

- (a) excessive descent rate;
- (b) excessive terrain closure rate;
- (c) excessive altitude loss after take-off or go-around;
- (d) unsafe terrain clearance while not in landing configuration—
 - (i) gear not locked down;
 - (ii) flaps not in a landing position; and
- (e) excessive descent below the instrument glide path.

Aeroplanes carrying passengers — cabin crew seats

96 (1) An operator shall ensure that an aeroplane is equipped with a forward or rearward facing seat, within 15 degrees of the longitudinal axis of the aeroplane, fitted with a safety harness for the use of each cabin crew member required to comply with the section 193 in respect of emergency evacuation.

(2) Every operator shall ensure that cabin crew seats provided in accordance with subsection (1) shall be located near floor level and other emergency exits as required by the State of Registry for emergency evacuation.

Emergency locator transmitter (ELT)

97 (1) An operator shall ensure that an aeroplane shall carry an automatic ELT.

(2) Subject to subsection (1) an operator shall ensure that an aeroplane authorised to carry more than 19 passengers for which the individual certificate of airworthiness is first issued after 1 July 2008 shall be equipped with at least two ELTs one of which shall be automatic.

(3) ELT equipment carried in terms of this section shall operate in compliance with the Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019.

Location of aeroplane in distress

98 (1) An operator shall ensure that an aeroplane of a maximum certificated take-off mass of over 5 700 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2023, shall autonomously transmit information from which a position can be determined at least once every minute, when in distress, in accordance with the Ninth Schedule.

(2) An operator shall make position information of a flight in distress available to the appropriate organisations, as established by the Authority in the applicable technical guidance material.

Aeroplanes required to be equipped with airborne collision avoidance system (ACAS II)

99 (1) An operator shall ensure that a turbine-engined aeroplane of a maximum certificated take-off mass in excess of 5 700 kg or authorised to carry more than 19 passengers is equipped with an airborne collision avoidance system (ACAS II).

(2) An airborne collision avoidance system referred to in subsection (1) shall operate in accordance with the relevant provisions of the Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019.

Requirements for pressure-altitude reporting transponders

100 (1) An operator shall ensure that an aeroplane is equipped with a pressure-altitude reporting transponder which operates in accordance with the relevant provisions of the Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019.

(2) An operator shall ensure that an aeroplane is equipped with a data source that provides pressure-altitude information with a resolution of 7.62 m (25 ft) or better.

(3) The Mode S transponder shall be provided with the airborne or on-the-ground status if the aeroplane is equipped with an automatic means of detecting such status.

Microphones

101. An operator shall ensure that flight crew members required to be on flight deck duty communicate through boom or throat microphones below the transition level or altitude.

Turbo-jet aeroplanes — forward-looking wind shear warning system

102 (1) An operator shall ensure that a turbo-jet aeroplane of a maximum certificated take-off mass in excess of 5 700 kg or authorised to carry more than 9 passengers is equipped with a forward-looking wind shear warning system.

(2) The forward-looking wind shear warning system referred to in subsection (1) shall—

- (a) be capable of providing the pilot with a timely aural and visual warning of wind shear ahead of the aircraft, and the information required to permit the pilot to safely commence and continue a missed approach or go-around or to execute an escape manoeuvre when necessary;
- (b) provide an indication to the pilot when the limits specified for the certification of automatic landing equipment are being approached, when such equipment is in use.

All aeroplanes operated by a single pilot under IFR or at night

103. In order for an operator to obtain an approval required in terms of section 50, the operator shall ensure that an aeroplane operated by a single pilot under the IFR or at night shall be equipped with—

- (a) a serviceable autopilot that has at least altitude hold and heading select modes;
- (b) a headset with a boom microphone or equivalent; and
- (c) means of displaying charts that enables them to be readable in all ambient light conditions.

Aeroplanes 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)

104 (1) Where aeroplanes are equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS, CVS, or any combination of those systems into a hybrid system, the use of such systems for the safe operation of an aeroplane 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; and
- (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.

Electronic flight bags- equipment

105. Where portable EFBs are used on board an aeroplane, the operator shall ensure that they do not affect the performance of the aeroplane systems, equipment or the ability to operate the aeroplane.

EFB Functions

106(1) Where EFBs are used on board an aeroplane the operator shall—

- (a) assess the safety risks 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.

(2) The Authority shall issue a specific approval for the operational use of EFB functions to be used for the safe operation of aeroplanes.

EFB specific approval

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

- (a) the EFB equipment and its associated installation hardware, including interaction with aeroplane systems where applicable, meet the appropriate airworthiness certification requirements;
- (b) the operator has assessed the safety risks associated with the operations supported by the EFB functions;
- (c) the operator has established requirements for redundancy of the information where appropriate as contained in and displayed by the EFB functions;
- (d) the operator has established and documented procedures for the management of the EFB functions including any database it may use; and
- (e) the operator has established and documented the procedures for the use of, and training requirements for, the EFB and the EFB function.

Turbine Aeroplane - Runway Overrun Awareness and Alerting System (ROAAS)

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

SUBPART VI

AEROPLANE COMMUNICATION, NAVIGATION AND SURVEILLANCE EQUIPMENT

Communication equipment

109 (1) An operator shall ensure that an aeroplane is provided with radio communication equipment capable of—

- (a) conducting two-way communication for aerodrome 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) The radio communication equipment required in accordance with subsection (1) shall provide for communications on the aeronautical emergency frequency 121.5 MHz.

(3) For operations where communication equipment is required to meet required communication performance (RCP) specification for performance-based communication (PBC), an aeroplane shall, in addition to the requirements specified in subsection (1)—

- (a) be provided with communication equipment which will enable it to operate in accordance with the prescribed RCP specifications;
- (b) have information relevant to the aeroplane RCP specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of Design or State of Registry; and
- (c) have information relevant to the aeroplane RCP specification capabilities included in the MEL.

(4) The Authority shall, for operations where an RCP specification for PBC 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 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 of those aeroplanes referred to in subsection (3), adequate provisions exist for—

- (a) receiving the reports of observed communication performance issued by monitoring programmes established in accordance with the applicable Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018 and
- (b) taking immediate corrective action for individual aircraft, aircraft types or operators, identified in such reports as not complying with the RCP specifications.

Navigation equipment

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

- (a) its operational flight plan;
- (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) For operations where a navigation specification for PBN has been prescribed, an operator shall ensure that an aeroplane shall, in addition to the requirements specified in subsection (1)—

- (a) be provided with navigation equipment which will enable it to operate in accordance with the prescribed navigation specifications;
- (b) have information relevant to the aeroplane navigation specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of the Design or State of Registry; and
- (c) have information relevant to the aeroplane navigation specification capabilities included in the MEL.

(3) The Authority shall, for operations where a navigation specification for PBN 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 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 the appropriate navigation specifications.

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

(5) For flights in defined portions of airspace where, based on regional air navigation agreement, MNPS are prescribed, an operator shall ensure that an aeroplane is provided with navigation equipment which—

- (a) continuously provides indications to the flight crew of adherence to or departure from track to the required degree of accuracy at any point along that track; and
- (b) has been authorised by the Authority for the MNPS operations concerned.

(6) An operator shall ensure that for flights in defined portions of airspace where, based on regional air navigation agreement, an RVSM of 300 m (1 000 ft) is applied between FL 290 and FL 410 inclusive —

- (a) the aeroplane shall be provided with equipment which is capable of—
 - (i) indicating to the flight crew the flight level being flown;
 - (ii) automatically maintaining a selected flight level;
 - (iii) providing an alert to the flight crew when a deviation occurs from the selected flight level and the threshold for the alert shall not exceed ± 90 m (300 ft); and

- (iv) automatically reporting pressure-altitude;
and
- (b) the State of the Operator shall issue a specific approval for RVSM operations.
- (7) Prior to granting the RVSM specific approval required in accordance with subsection (6) the Authority shall be satisfied that—
 - (a) the vertical navigation performance capability of the aeroplane satisfies the requirements specified in Fourth Schedule of this Part;
 - (b) the operator has instituted appropriate procedures in respect of continued airworthiness (maintenance and repair) practices and programmes; and
 - (c) the operator has instituted appropriate flight crew procedures for operations in RVSM airspace.
- (8) The State of the Operator, in consultation with the State of Registry where appropriate, shall ensure that, in respect of those aeroplanes specified in subsection (6), adequate provisions exist for—
 - (a) receiving the reports of height-keeping performance issued by the monitoring agencies established in accordance with the Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018; and
 - (b) taking immediate corrective action for individual aircraft, or aircraft type groups, identified in such reports as not complying with the height-keeping requirements for operation in airspace where RVSM is applied.
- (9) An operator issued with an RVSM specific approval by the Authority, shall ensure that a minimum of two aeroplanes of each aircraft type grouping have their height-keeping performance monitored, at least once every two years or within intervals of 1 000 flight hours per aeroplane, whichever period is longer.
- (10) Where the operator referred to in subsection (9) has aircraft type grouping consisting of a single aeroplane, monitoring of that aeroplane shall be accomplished within the period specified in subsection (9).
- (11) No operator shall operate in RVSM airspace without a specific RVSM approval issued by the State of operator.
- (12) Any operator who contravenes subsection (11)—
 - (a) in Zimbabwean airspace shall be —
 - (i) grounded at the nearest appropriate aerodrome;
 - (ii) liable to a civil penalty in terms of Civil Aviation (General Procedures and Enforcement) Regulations;
 - (iii) reported to the State of the operator in the case where the operator is not registered in Zimbabwe;
 - (b) outside Zimbabwean airspace, where the operator is registered in Zimbabwe, shall be liable to a civil penalty in terms of Civil Aviation (General Procedures and Enforcement) Regulations.
- (13) An operator shall ensure that an aeroplane 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 aeroplane to navigate in terms of subsection (1) and where applicable subsections (2), (6) and (8).
- (14) An operator shall ensure that on flights in which it is intended to land in instrument meteorological conditions, an aeroplane shall be provided with radio equipment capable of receiving signals providing guidance to a point from which a visual landing can be effected.
- (15) The equipment referred to in subsection (14) shall be capable of providing such guidance for each aerodrome at which it is intended to land in instrument meteorological conditions and for any designated alternate aerodromes.

Surveillance equipment

- 111 (1) An operator shall ensure that an aeroplane is provided with surveillance equipment which will enable it to operate in accordance with the requirements of air traffic services.
- (2) For operations where surveillance equipment is required to meet a Required Surveillance Performance (RSP) specification for performance-based surveillance (PBS), an aeroplane 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 specifications;
 - (b) have information relevant to the aeroplane RSP specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of Design or State of Registry; and
 - (c) have information relevant to the aeroplane RSP specification capabilities included in the MEL.

(3) The 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.

(4) The Authority shall ensure that, in respect of those aeroplanes mentioned in subsection (2), adequate provisions exist for—

- (a) receiving the reports of observed surveillance performance issued by monitoring programmes established in accordance with Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018; and
- (b) taking immediate corrective action for individual aircraft, aircraft types or operators, identified in such reports as not complying with the RSP specifications.

Installation

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

Electronic navigation data management

113 (1) No operator shall 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.

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

SUB PART VII AEROPLANE CONTINUING AIRWORTHINESS

Operator's Continuing Airworthiness Responsibilities

114 (1) For the purpose of this Part "aeroplane" includes engines, propellers, components, accessories, instruments, equipment and apparatus including emergency equipment.

(2) An operator shall ensure that, in accordance with procedures acceptable to the Authority—

- (a) each aeroplane they operate is maintained in an airworthy condition;
- (b) the operational and emergency equipment necessary for an intended flight is serviceable; and
- (c) the certificate of airworthiness of each aeroplane they operate remains valid.

(3) An operator shall not operate an aeroplane unless maintenance on the aeroplane, including any associated engine, propeller and part, is carried out—

(a) by an organisation complying with Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018 that is either approved by the Authority or is approved by another Contracting State and is accepted by the Authority; or

(b) by a person or organisation in accordance with procedures that are authorised by the Authority; and there is a maintenance release in relation to the maintenance carried out.

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

(5) An operator shall ensure that the maintenance of its aeroplanes is performed in accordance with the approved maintenance programme.

Operator's maintenance control manual

115 (1) An operator shall provide, for the use and guidance of maintenance and operational personnel concerned, a maintenance control manual approved by the Authority and acceptable to the state of registry where Zimbabwe is not the state of registry, in accordance with the requirements of section 185.

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

(3) An operator shall ensure that the maintenance control manual is amended as necessary to keep the information contained therein up to date.

(4) 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.

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

Maintenance programme

116(1) An operator shall provide, for the use and guidance of maintenance and operational personnel concerned, a maintenance programme, approved by the Authority, containing the information required in section 186 of this Part.

(2) The design and application of the operator's maintenance programme referred to in subsection (1) shall observe Human Factors principles.

(3) 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.

Continuing airworthiness records

117 (1) An operator shall ensure that the following records are kept for a minimum period of 90 days—

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

(b) the current status of compliance with all mandatory continuing airworthiness information;

(c) appropriate details of modifications and repairs;

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

(e) the current status of the aeroplane's compliance with the maintenance programme;

(f) the detailed maintenance records to show that all requirements for the signing of a maintenance release have been met.

(2) The continuing airworthiness records referred to 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 referred to in subsection (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. In the event of any permanent change of operator, the records shall be transferred to the new operator.

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

Continuing airworthiness information

118 (1) An operator of an aeroplane over 5 700 kg maximum certificated take-off mass shall monitor and assess maintenance and operational experience with respect to continuing airworthiness and provide the information as prescribed by the Authority and report through the system specified in the Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018.

(2) An operator of an aeroplane over 5 700 kg maximum certificated take-off 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 Authority.

Modifications and repairs

119. An operator shall ensure that all modifications and repairs comply with airworthiness requirements acceptable to the Authority and procedures shall be established to ensure that the substantiating data supporting compliance with the airworthiness requirements are retained.

Approved maintenance organisation

120. An approved maintenance organisation shall comply with Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018.

Maintenance release

121 (1) When maintenance is carried out by an approved maintenance organisation, the release shall be issued by the approved maintenance organisation in accordance with the provisions of the Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018.

(2) When maintenance is not carried out by an approved maintenance organisation, the maintenance release shall be completed and signed by a person appropriately licensed in accordance with Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019 to certify that the maintenance work performed has been completed satisfactorily and in accordance with approved data and procedures acceptable to the Authority.

(3) When maintenance is not carried out by an approved maintenance organisation, the maintenance release shall include the following—

- (a) basic details of the maintenance carried out including detailed reference of the approved data used;
- (b) the date such maintenance was completed; and
- (c) the identity and licence details of the person or persons signing the release.

SUB-PART VIII
AEROPLANE FLIGHT CREW

Composition of flight crew

122 (1) An operator shall ensure that the number and composition of the flight crew is not less than that specified in the approved operations manual.

(2) The flight crew referred to in subsection (1) shall include flight crew members in addition to the minimum numbers specified in the flight manual or other documents associated with the certificate of airworthiness, when necessitated by considerations related to the type of aeroplane used, the type of operation involved and the duration of flight between points where flight crew are changed.

Radio operator

123. The flight crew shall include at least one member who holds a valid license, issued or rendered valid by the State of Registry, authorising operation of the type of radio transmitting equipment to be used.

Flight engineer

124. Where a separate flight engineer's station is incorporated in the design of an aeroplane, the flight crew shall include at least one flight engineer especially assigned to that station, unless the duties associated with that station can be satisfactorily performed by another flight crew member, holding a flight engineer license, without interference with regular duties.

Flight navigator

125. An operator shall ensure that flight crew include at least one member who holds a flight navigator licence in all operations where, as determined by the Authority, navigation necessary for the safe conduct of the flight cannot be adequately accomplished by the pilots from the pilot station.

Flight crew member emergency duties

126 (1) An operator shall, for each type of aeroplane, assign to all flight crew members the necessary functions they are to perform in an emergency or in a situation requiring emergency evacuation.

(2) Annual training in accomplishing these functions shall be contained in the operator's training programme and shall include instruction in the use of all emergency and life-saving equipment required to be carried, and drills in the emergency evacuation of the aeroplane.

Flight crew member training programmes

- 127 (1) An operator shall establish and maintain a ground and flight training programme including—
- (a) Initial,
 - (b) recurrent
 - (c) transition(conversion),
 - (d) requalification,
 - (e) upgrade,
 - (f) recency of experience,
 - (g) familiarisation,
 - (h) differences; and
 - (i) other specialised training as applicable.
- (2) An operator shall ensure that the training programme referred to in subsection (1), which ensures that all flight crew members are adequately trained to perform their assigned duties is approved by the Authority.
- (3) The training programme shall—
- (a) include ground and flight training facilities and properly qualified instructors as determined by the Authority;
 - (b) consist of ground and flight training in the type(s) of aeroplane on which the flight crew member serves;
 - (c) include proper flight crew coordination and training in all types of emergency and abnormal situations or procedures caused by engine, airframe or systems malfunctions, fire or other abnormalities;
 - (d) include upset prevention and recovery training;
 - (e) include training in knowledge and skills related to visual and instrument flight procedures for the intended area of operation, charting, human performance including threat and error management and in the transport of dangerous goods;
 - (f) ensure that all flight crew members know the functions for which they are responsible and the relation of these functions to the functions of other crew members, particularly in regard to abnormal or emergency procedures; and
 - (g) be undertaken on a recurrent basis, as determined by the Authority and shall include an assessment of competence.
- (4) The requirement for recurrent flight training in a particular type of aeroplane shall be considered fulfilled by—
- (a) the use, to the extent deemed feasible by the Authority, of flight simulation training devices approved by the Authority for that purpose; or
 - (b) the completion within the appropriate period of the proficiency check required by section 135 in that type of aeroplane.

Duties during critical phases of flight

128. No flight crew member shall—

- (a) perform any duties during a critical phase of flight except duties required for the safe operation of the aircraft;
- (b) engage in any activity during a critical phase of flight which may distract or interfere with the performance of that flight crew member's assigned duties.

Manipulation of the controls

129 (1) No pilot in command shall allow an unqualified person to manipulate the controls of an aircraft during commercial air transport operations.

(2) No person shall manipulate the controls of an aircraft during commercial air transport operations unless such person is qualified to manipulate the controls and is authorised to do so by the air operator certificate holder.

Power to inspect

130 (1) The pilot in command shall give an inspector free and uninterrupted access to the aircraft, including the cockpit, when an inspector from the Authority presents valid aviation safety inspector credentials to the pilot in command in order to conduct an inspection.

(2) The pilot in command may refuse an inspector access to the cockpit if, in his opinion, the safety of the aircraft may be endangered.

Qualifications-recent experience — pilot-in-command and co-pilot

131 (1) No operator shall assign a pilot-in-command or a co-pilot to operate at the flight controls of a type or variant of a type of aeroplane 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 aeroplane or in a flight simulator approved for the purpose.

(2) Where a pilot-in-command or a co-pilot is flying 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 decide under which conditions the requirements of subsection (1) for each variant or each type of aeroplane can be combined.

(3) The take-offs and landings required by subsection (1) may be performed in a visual synthetic flight trainer approved by the Authority to include take-off and landing manoeuvres and any person who fails to make the 3 required take-offs and landings within any consecutive 90 day period shall re-establish recency of experience as provided in this Part.

(4) In addition to meeting all applicable training and checking requirements of this Part, a flight crew member who has not met the requirements of subsection (1) shall re-establish recency of experience as follows—

- (a) under the supervision of a check pilot, make at least 3 take-offs and landings in the type of aircraft in which that person is to serve or where an advanced synthetic flight trainer is used, the requirements of this Part shall be met; and
- (b) the take-offs and landings required in this paragraph shall include—
 - (i) at least one take-off with a simulated failure of the most critical engine;
 - (ii) at least one landing from an instrument landing system approach to the lowest instrument landing system minimum authorised for the certificate holder; and
 - (iii) at least one landing to a full stop.

(5) A required flight crew member who performs the manoeuvres prescribed in subsection (3) in a visual synthetic flight trainer shall—

- (a) have previously logged 100 hours of flight time in the same aircraft type in which the pilot is to serve; and
- (b) be observed on the first 2 landings made in operations under this Part by an approved check pilot who acts as pilot-in-command and occupies a pilot seat and the landings shall be made in weather minima that are not less than those contained in the AOC holder's operation specifications for Category I operations, and shall be made within 45 days following completion of training in the synthetic flight trainer.

(6) When using a synthetic flight trainer to accomplish any of the requirements of subsection (1) or (3), a required flight crew member position shall be operated as if in a normal in-flight environment without use of the repositioning features of the synthetic flight trainer.

(7) A check pilot who observes the take-offs and landings prescribed in subsection (3)(a) and (4) shall certify that the person being observed is proficient and qualified to perform flight duty in operations under this Part and may require any additional manoeuvres that are determined necessary to make this certifying statement.

Pilot operating limitations and pairing requirements

132 (1) Where a co-pilot has fewer than 50 hours of flight time as co-pilot in operations in the aircraft type being flown, and the pilot-in-command is not an appropriately qualified check pilot, the pilot in command shall make all take-offs and landings in the following situations—

- (a) special airports designated by the Authority or special airports designated by the AOC holder; and
- (b) in any of the following conditions—
 - (i) the prevailing visibility value in the latest weather report for the airport is at or below 1200 m;
 - (ii) the Runway Visual Range (RVR) for the runway to be used is at or below 4,000 ft;

- (iii) the runway to be used has water, snow, slush or similar conditions that may adversely affect aircraft performance;
 - (iv) the braking action on the runway to be used is reported to be less than “good”;
 - (v) the crosswind component for the runway to be used is in excess of 15 knots;
 - (vi) wind shear is reported in the vicinity of the airport; or
 - (vii) any other condition in which the pilot in command determines to be prudent to exercise the PIC’s prerogative.
- (2) No person shall conduct operations under this Part unless, for that type of aircraft, either the pilot in command or the co-pilot has at least 75 hours of line operating flight time, either as pilot in command or co-pilot.
- (3) The Authority may, upon application by the AOC holder, authorize exemptions from the requirements of this Part by an appropriate amendment to the operations specifications in any of the following circumstances—
- (a) a newly certificated AOC holder does not employ any pilots who meet the minimum requirements of this Part;
 - (b) an existing AOC holder adds to its fleet an aircraft type not before proven for use in its operations; or
 - (c) an existing certificate holder establishes a new domicile to which it assigns pilots who will be required to become qualified on the aircraft operated from that domicile.

Recent experience — cruise relief pilot

- 133 (1) No operator shall assign a pilot to act in the capacity of cruise relief pilot in a type or variant of a type of aeroplane unless, within the preceding 90 days that pilot has either—
- (a) operated as a pilot-in-command, co-pilot or cruise relief pilot on the same type of aeroplane; or
 - (b) carried out flying skill refresher training including normal, abnormal and emergency procedures specific to cruise flight on the same type of aeroplane or in a flight simulator approved for the purpose, and has practiced approach and landing procedures, where the approach and landing procedure practice may be performed as the pilot who is not flying the aeroplane.
- (2) When a cruise relief pilot is flying 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 decide under which conditions the requirements of this section for each variant or each type of aeroplane can be combined.

Pilot-in-command area, route and aerodrome qualification

- 134 (1) No operator shall utilise a pilot as pilot-in-command of an aeroplane on a route or route segment for which that pilot is not currently qualified until such pilot has complied with subsections (2) and (3).
- (2) Each pilot referred to in subsection (1) shall demonstrate to the operator an adequate knowledge of—
- (a) the route to be flown, and the aerodromes which are to be used and this shall include knowledge of—
 - (i) the terrain and minimum safe altitudes;
 - (ii) the seasonal meteorological conditions;
 - (iii) the meteorological, communication and air traffic facilities, services and procedures;
 - (iv) the search and rescue procedures; and
 - (v) the navigational facilities and procedures, including any long-range navigation procedures, associated with the route along which the flight is to take place; and
 - (b) 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 and the portion of the demonstration relating to arrival, departure, holding and instrument approach procedures may be accomplished in an approved training device which is adequate for this purpose.
- (3) A pilot-in-command shall have made an actual approach into each aerodrome of landing on the route, accompanied by a pilot who is qualified for the aerodrome, as a member of the flight crew or as an observer on the flight deck, unless—
- (a) the approach to the aerodrome is not over difficult terrain and the instrument approach procedures and aids available are similar to those with which the pilot is familiar, and a margin to be approved by the Authority is added to the normal operating minima, or there is reasonable certainty that approach and landing can be made in visual meteorological conditions; or
 - (b) the descent from the initial approach altitude can be made by day in visual meteorological conditions; or

- (c) the operator qualifies the pilot-in-command to land at the aerodrome concerned by means of an adequate pictorial presentation; or
- (d) the aerodrome concerned is adjacent to another aerodrome at which the pilot-in-command is currently qualified to land.

(4) An 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) An operator shall not continue to utilise a pilot as a pilot-in-command on a route or within an area specified by the operator and approved by the Authority unless, within the preceding 12 months, that pilot has made at least one trip as a pilot member of the flight crew, or as a check pilot, or as an observer in the flight crew compartment—

- (a) within that specified area; and
- (b) where appropriate, on any route where procedures associated with that route or with any aerodromes intended to be used for take-off or landing require the application of special skills or knowledge.

(6) In the event that more than 12 months elapse in which a pilot-in-command has not made such a trip on a route in close proximity and over similar terrain, within such a specified area, route or aerodrome, and has not practiced such procedures in a training device which is adequate for this purpose, prior to again serving as a pilot-in-command within that area or on that route, that pilot shall re-qualify in accordance with this Part.

Pilot proficiency checks

135 (1) An operator shall ensure that piloting technique and the ability to execute emergency procedures is checked through competency checks, route checks, instrument ratings checks, conversion checks, or upgrading checks in such a way as to demonstrate the pilot's competence on each type or variant of a type of aeroplane.

(2) Where the operation may be conducted under instrument flight rules, 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) the checks referred to in subsection (1) shall be conducted –
 - (i) by the Authority; or
 - (ii) a designated examiner or check airman.

(4) A person shall not serve as a check pilot for any flight check unless such person has been designated by name for specified function by the Authority within the preceding 12 months.

(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.

Single pilot operations under the instrument flight rules (IFR) or at night

136 (1) An operator shall comply with the experience, recency and training requirements applicable to single pilot operations intended to be carried out under the IFR or at night as specified in this Part.

(2) The pilot-in-command shall—

- (a) for operations under the IFR or at night, have accumulated at least 50 hours flight time on the class of aeroplane, of which at least 10 hours shall be as pilot-in-command;
- (b) for operations under the IFR, have accumulated at least 25 hours flight time under the IFR on the class of aeroplane, which may form part of the 50 hours flight time in paragraph (a);
- (c) for operations at night, have accumulated at least 15 hours flight time at night, which may form part of the 50 hours flight time in paragraph (a);
- (d) for operations under the IFR, have acquired recent experience as a pilot engaged in a single pilot operation under the IFR of—

- (i) at least 5 IFR flights, including 3 instrument approaches carried out during the preceding 90 days on the class of aeroplane in the single pilot role; or
- (ii) an IFR instrument approach check carried out on such an aeroplane during the preceding 90 days;
- (e) for operations at night, have made at least 3 take-offs and landings at night on the class of aeroplane in the single pilot role in the preceding 90 days; and
- (f) have successfully completed training programmes that include, in addition to the requirements of section 127, passenger briefing with respect to emergency evacuation, autopilot management, and the use of simplified in-flight documentation.

(3) The initial and recurrent flight training and proficiency checks indicated in sections 127 and 135 shall be performed by the pilot-in-command in the single pilot role on the class of aeroplane in an environment representative of the operation.

Flight crew equipment

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

Pilot authorisation in lieu of a type rating

138. The Authority may authorise a pilot without a type rating to operate an aircraft requiring a type rating for a period not exceeding 60 days, provided that—

- (a) the applicant has demonstrated to the satisfaction of the Authority that an equivalent level of safety can be achieved through the operating limitations on the authorisation;
- (b) the applicant shows that compliance with this Part is impracticable for the flight or series of flights;
- (c) the operations—
 - (i) involve only a ferry flight, training to qualify on type or test flight;
 - (ii) are within Zimbabwe, unless by previous agreement with the Authority, the aircraft is flown to an adjacent Contracting State for maintenance;
 - (iii) are not for compensation or hire unless the compensation or hire involves payment for the use of the aircraft for training; and
 - (iv) involve only the carriage of flight crew members considered essential for the flight.

Licences required

139 (1) No person shall act as pilot-in-command or in any other capacity as a required flight crew member of an aircraft—

- (a) registered in Zimbabwe, unless that person carries in his personal possession the appropriate and valid licence for that flight crew position for that type of aircraft; or
- (b) of foreign registry, unless that person carries in his personal possession a valid licence for that type of aircraft issued to them by the State of registry.

(2) The flight crew for international and domestic operations shall hold a valid radiotelephony operator licence or endorsement issued or rendered valid by the State of Registry, authorising operation of the type of radio transmitting equipment to be used.

Pilot Qualifications

140 (1) No person shall operate an aircraft in commercial air transport unless that person is qualified for the specific operation and in the specific type of aircraft used.

(2) An operator or owner of the aircraft shall ensure that flight crew engaged in civil aviation operations speak and understand the English Language.

Fitness of crew members

141 (1) No person shall act as a crew member at any time when that person is aware of any decrease in the medical fitness which might render him unable to safely and properly execute the duties of a crew member.

(2) An operator and the pilot in command shall be responsible for ensuring that a flight is not—

- (a) commenced if any crew member is incapacitated or unable to perform duties by any cause such as injury, sickness, fatigue, the effects of alcohol or drugs; or

- (b) continued beyond the nearest suitable aerodrome where a flight crew member's capacity to perform functions is significantly reduced by impairment of faculties from causes such as fatigue, sickness or lack of oxygen.

Special authorisation required for Category II or III operations

142 (1) No person shall act as a pilot of an aircraft in a Category II or III operations unless—

- (a) in the case of a pilot-in-command, the person holds a current Category II or III pilot authorisation for that aircraft type; or
(b) in the case of a co-pilot, the person is authorised by the State of Registry to act in that capacity in that aircraft in Category II or III operations.

(2) An authorisation is not required for individual pilots of an AOC holder operations specifications approved for Category II or III operations.

Recording of flight time

143 (1) A pilot shall record and keep details of all flights he or she has flown in a logbook format acceptable to the Authority.

(2) An AOC holder—

- (a) may record details of flights flown by a pilot in an acceptable computerised format maintained by the AOC holder; and
(b) shall make the records of all flights operated by the pilot, including differences and familiarisation training, available on request to the pilot concerned.

(3) The record referred to in subsection (1) and (2) shall contain the following information—

- (a) name and address of the holder;
(b) for each flight:
(i) of the PIC;
(ii) date of flight;
(iii) place and time of departure and arrival, times to be UTC and block to block;
(iv) type, aircraft make, model and variant, aircraft nationality and registration marks of aircraft;
(v) single engine or multi-engine;
(vi) total time of flight; and
(vii) accumulated total time of flight;

(c) for each synthetic flight trainer or flight and navigation procedures trainers session:

- (i) type and qualification number of training device;
(ii) synthetic training device instruction;
(ii) date;
(iv) total time of session; and accumulated total time.

(d) pilot function—

- (i) the PIC;
(ii) the co-pilot;
(iii) dual;
(iv) authorised instructor or authorised examiner; and
(v) remarks column to give details of specific functions such as student pilot in command time,
(vi) PIC under supervision time, pilot in command instrument flight time.

(e) operational conditions—

- (i) night; or
(ii) instrument flight rules.

(4) Logging of time—

(a) PIC flight time—

- (i) the holder of a licence may log as pilot in command time all of the flight time during which he or she is the PIC;
(ii) the applicant for or the holder of a pilot licence may log as pilot in command time all solo flight time and flight time as student pilot in command provided that such student pilot in command time is countersigned by the instructor;

- (iii) the holder of an instructor rating may log as pilot in command all flight time during which he acts as an instructor in an aeroplane;
 - (iv) the holder of an examiner's authorisation may log as pilot in command all flight time during which he or she occupies a pilot's seat and acts as an examiner in an aeroplane;
 - (v) a co-pilot acting as pilot in command under the supervision of the pilot in command on an aeroplane on which more than one pilot is required under the certificate of airworthiness of the aeroplane or by this Part may log as pilot in command under supervision flight time, provided such pilot in command time under supervision is countersigned by the PIC; or
 - (vi) where the holder of a licence carries out a number of flights upon the same day returning on each occasion to the same place of departure and the interval between successive flights does not exceed thirty minutes, such series of flights are to be recorded as a single entry.
- (b) co-pilot flight time- the holder of pilot licence occupying a pilot seat as co-pilot may log all flight time as co-pilot flight time on an aeroplane on which more than one pilot is required under the certificate of airworthiness of the aeroplane;
 - (c) cruise relief co-pilot flight time- a cruise relief co-pilot may log all flight time as co-pilot when occupying a pilot's seat;
 - (d) instruction time- a summary of all time logged by an applicant for a licence or rating as flight instruction, instrument flight instruction, instrument ground time, shall be certified by the appropriately rated or authorised instructor from whom it was received; and
 - (e) pilot in command under supervision- a co-pilot may log as pilot in command under supervision flight time flown as pilot in command under supervision, when all of the duties and functions of pilot in command on that flight were carried out, such that the intervention of the pilot in command in the interest of safety was not required, provided that the method of supervision is acceptable to the Authority.
- (5) Presentation of flight time record—
- (a) a holder of a licence or a student pilot shall without undue delay present his flight time record for inspection upon request by an authorised person; and
 - (b) a student pilot shall carry his flight time record logbook with him on all solo cross-country flights as evidence of the required instructor authorisation.

Completion of the technical logbook

144. A pilot-in-command shall ensure that all portions of the technical logbook required under the Civil Aviation (Air Operator Certification and Administration) Regulations, published in statutory instrument 87 of 2018, are completed at the appropriate points before, during and after flight operations.

Reporting mechanical irregularities

145 A pilot-in-command shall ensure that all mechanical irregularities occurring during flight time are—

- (a) reported to the operator at the termination of the flight;
- (b) entered in the aircraft logbook and dealt with in accordance with the Minimum Equipment List or other approved or prescribed procedure;
- (c) for commercial air transport operations, entered in the technical log of the aircraft at the end of that flight time.

Reporting of facility and navigation aid inadequacies

146 (1) An operator shall report, without delay, any inadequacy or irregularity of a facility or navigational aid observed in the course of operations to the person responsible for that facility or navigational aid.

(2) Subject to their published conditions of use, aerodromes and their facilities shall be kept continuously available for flight operations during their published hours of operations, irrespective of weather conditions.

Pilot privileges and limitations

147 A pilot shall not conduct flight operations unless the operations are within the privileges and limitations of each licence he or she holds as specified in the Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019.

Crew resource management (CRM) Training

148 (1) No AOC holder shall use any person as a crew member or flight dispatcher unless that person has completed the initial crew resource management curriculum approved by the Authority.

(2) An AOC holder shall ensure that all crew members have crew resource management training as part of their initial and recurrent training requirements.

(3) A crew resource management training program shall include—

- (a) an initial indoctrination or awareness segment;
- (b) a method to provide recurrent practice and feedback; and
- (c) a method of providing continuing reinforcement.

(4) Curriculum topics to be contained in an initial crew resource management training course include—

- (a) communications processes and decision behaviour;
- (b) internal and external influences on interpersonal communications;
- (c) barriers to communication;
- (d) listening skills;
- (e) decision making skills;
- (f) effective briefings;
- (g) developing open communications;
- (h) inquiry, advocacy, and assertion training;
- (i) crew self-critique;
- (j) conflict resolution;
- (k) team building and maintenance;
- (l) leadership and fellowship training;
- (m) interpersonal relationships;
- (n) workload management;
- (o) situational awareness;
- (p) how to prepare, plan and monitor task completions;
- (q) workload distribution;
- (r) distraction avoidance;
- (s) individual factors; and
- (t) stress reduction.

Human Factors (HF) Training

149 (1) No AOC holder shall use any person as a crew member or flight dispatcher unless that person has completed the initial HF curriculum approved by the Authority.

(2) An AOC holder shall ensure that all crew members have Human Factors training as part of their initial and recurrent training requirements.

(3) A Human Factors training program shall include—

- (a) an initial or induction training;
- (b) a recurrent training; and
- (c) a requalification

(4) Curriculum topics to be contained in an initial Human Factors training course include—

- (a) Elements of Human Factors;
- (b) Clinical Psychology;
- (c) Experimental Psychology;
- (d) Anthropometrics;
- (e) Computer Science;
- (f) Cognitive Science;
- (g) Medical Science;
- (h) Organisational Psychology; and
- (i) Educational Psychology;

Initial emergency equipment drills

150 (1) No AOC holder shall use any person as a crew member unless that person has completed the appropriate initial emergency equipment curriculum and drills for the crew member position approved by the Authority for the emergency equipment available on the aircraft to be operated.

(2) A crew member shall complete emergency training during the specified training periods, using the items of installed emergency equipment for each type of aircraft in which that crew member is to serve.

(3) During initial training, a crew member shall perform the following one time emergency drills—

- (a) protective breathing equipment or fire-fighting drill—
 - (i) locate the source of fire or smoke for an actual or simulated fire;
 - (ii) implement procedures for effective crew co-ordination and communication, including notification of flight crew members about the fire situation;
 - (iii) don and activate installed protective breathing equipment or approved protective breathing equipment simulation device;
 - (iv) manoeuvre in limited space with reduced visibility;
 - (v) effectively use the aircraft's communication system;
 - (vi) identify the class of fire;
 - (vii) select the appropriate extinguisher;
 - (viii) properly remove the extinguisher from the securing device;
 - (ix) prepare, operate and discharge the extinguisher properly; and
 - (x) utilise the correct fire-fighting techniques for type of fire.
- (b) emergency evacuation drill—
 - (i) recognise and evaluate an emergency;
 - (ii) assume the appropriate protective position;
 - (iii) command passengers to assume protective position;
 - (iv) implement crew co-ordination procedures;
 - (v) ensure activation of emergency lights;
 - (vi) assess aircraft condition;
 - (vii) initiate evacuation, dependent on signal or decision;
 - (viii) command passengers to release their seatbelts and evacuate;
 - (ix) assess exit and redirect passengers, where necessary, to open exits, including deploying slides and commanding helpers to assist;
 - (x) command the passengers to evacuate at exit and run away from the aircraft;
 - (xi) assist special need passengers, such as handicapped, elderly, and persons in a state of panic; and
 - (xii) actually exit the aircraft or training device using at least one of the installed emergency evacuation slides.

(4) In the case of an emergency evacuation drill, the crew member may either observe the aircraft exits being opened in the emergency mode and the associated exit slider or aft pack being deployed and inflated, or perform the tasks resulting in the accomplishment of these actions.

(5) An aircraft crew member shall accomplish additional emergency drills during initial and recurrent training, including performing the following emergency drills—

- (a) emergency exit drill—
 - (i) correctly pre-flight each type of emergency exit and evacuation slide or slide raft, if part of cabin crew member's assigned duties;
 - (ii) disarm and open each type of door exit in normal mode;
 - (iii) close each type of door exit in normal mode;
 - (iv) arm each type of door exit in emergency mode;
 - (v) open each type of door exit in emergency mode;
 - (vi) use the manual slide inflation system to accomplish or ensure slide or slide raft inflation;
 - (vii) open each type of window exit; and
 - (viii) remove the escape rope and position it for use.
- (b) hand fire extinguisher drill fighting an actual or a simulated fire is not necessary during this drill—
 - (i) pre-flight each type of hand fire extinguisher;

- (ii) locate the source of fire or smoke and identify class of fire;
 - (iii) select the appropriate extinguisher and remove from securing device;
 - (iv) prepare the extinguisher for use;
 - (v) actually operate and discharge each type of installed hand fire extinguisher;
 - (vi) utilise correct fire-fighting techniques for the type of fire; and
 - (vii) implement procedures for effective crew coordination and communication, including notification of crew members about the type of fire situation.
- (c) emergency oxygen system drill—
- (i) actually operate portable oxygen bottles, including masks and tubing;
 - (i) verbally demonstrate operation of chemical oxygen generators;
 - (ii) prepare for use and properly operate an oxygen device, including donning and activation;
 - (iii) administer oxygen to self, passengers, and to those persons with special oxygen needs;
 - (iv) utilise proper procedures for effective crew coordination and communication;
 - (v) activate protective breathing equipment;
 - (vi) manually open each type of oxygen mask compartment and deploy oxygen masks;
 - (vii) identify compartments with extra oxygen masks;
 - (viii) implement immediate action decompression procedures; and
 - (ix) reset the oxygen system, where applicable.
- (c) flotation device drill—
- (i) don and inflate life vests;
 - (ii) remove and use flotation seat cushions; and
 - (iii) demonstrate swimming techniques using a seat cushion.
- (d) ditching drill, where applicable, during which ditching drill trainees shall perform the "prior to impact" and "after impact" procedures for a ditching, as appropriate to the specific operator's type of operation—
- (i) implement crew coordination procedures, including a briefing with the captain to obtain pertinent ditching information and briefing cabin crew members;
 - (ii) coordinate time-frame for cabin and passenger preparation;
 - (iii) adequately brief passengers on ditching procedures;
 - (iv) ensure the cabin is prepared, including the securing of carry-on baggage, lavatories, and galleys;
 - (v) demonstrate how to properly deploy and inflate slide rafts;
 - (vi) remove, position and attach slide rafts to aircraft;
 - (vii) inflate the rafts;
 - (viii) use escape ropes at over wing exits;
 - (ix) command any helpers to assist;
 - (x) use slides and seat cushions as flotation devices;
 - (xi) remove appropriate emergency equipment from the aircraft;
 - (xii) board rafts properly;
 - (xiii) initiate raft management procedures, such as disconnecting rafts from aircraft, applying immediate first aid, rescuing persons in water, salvaging floating rations and equipment, deploying sea anchor, tying rafts together, and activating or ensuring operation of emergency locator transmitter;
 - (xiv) initiate basic survival procedures, such as removing and utilising survival kit items, repairing and maintaining raft, ensuring protection from exposure, erecting canopy, communicating location, providing continued first aid, and providing sustenance;
 - (xv) use heaving line to rescue persons in the water;
 - (xvi) tie slide rafts or rafts together;
 - (xvii) use life line on edge of slide raft or raft as a handhold; and
 - (xviii) secure survival kit items.
- (6) An aircraft crew member shall accomplish additional emergency drill requirements during initial and recurrent training including observing the following emergency drills:
- (a) life raft removal and inflation drill, if applicable—
 - (i) removal of a life raft from the aircraft or training device; and

- (ii) inflation of a life raft.
- (b) slide raft transfer drill—
 - (i) transfer each type of slide raft pack from an unusable door to a usable door;
 - (ii) disconnect the slide raft at an unusable door;
 - (iii) redirect passengers to the usable slide raft; and
 - (iv) install and deploy the slide raft at a usable door.
- (c) slide and slide raft deployment, inflation, and detachment—
 - (i) engage slide girt bar in floor brackets;
 - (ii) inflate slides with and without quick-release handle, manually and automatically;
 - (iii) disconnect slide from aircraft for use as a flotation device;
 - (iv) arm slide rafts for automatic inflation; and
 - (v) disconnect slide raft from the aircraft.
- (d) emergency evacuation slide drill—
 - (i) open armed exit with slide or slide raft deployment and inflation; and
 - (ii) egress from aircraft via the evacuation slide and run away to a safe distance.

Initial aircraft ground training: flight crew

151 (1) No AOC holder shall use any person as a flight crew member unless that person has completed the initial ground training approved by the Authority for the aircraft type.

(2) Initial aircraft ground training for flight crew members shall include the pertinent portions of the operations manuals relating to aircraft-specific performance, mass and balance, operational policies, systems, limitations, normal, abnormal and emergency procedures on the aircraft type to be used.

(3) An AOC holder shall have an initial aircraft ground training curriculum for the flight crew applicable to the type of operations conducted and aircraft flown.

- (4) Instructions shall include at least the following general subjects—
- (a) AOC holder's dispatch, flight release, or operational control or flight following procedures;
 - (b) principles and methods for determining mass and balance, and runway limitations for take-off;
 - (c) adverse weather recognition and avoidance, and flight procedures which shall be followed when operating in the following conditions—
 - (i) icing;
 - (ii) fog;
 - (iii) Turbulence;
 - (iv) heavy precipitation;
 - (v) thunderstorms;
 - (vi) low-level wind shear and microburst; and
 - (vii) low visibility.
 - (a) normal and emergency communications procedures and navigation equipment including the AOC holder's communications procedures and air traffic control clearance requirements;
 - (b) navigation procedures used in area departure, en route, area arrival, approach and landing phases;
 - (c) approved crew resource management or CRM training;
 - (d) air traffic control systems, procedures, and phraseology;
 - (e) aircraft performance characteristics during all flight regimes, including—
 - (i) the use of charts, tables, tabulated data and other related manual information;
 - (ii) normal, abnormal, and emergency performance problems;
 - (iii) meteorological and weight limiting performance factors, such as temperature, pressure, contaminated runways, precipitation, climb and runway limits;
 - (iv) inoperative equipment performance limiting factors, such as minimum equipment list or configuration deviation list, inoperative antiskid; and
 - (v) special operational conditions, such as unpaved runways, high altitude aerodromes and drift down requirements.

(5) An AOC holder shall have an initial aircraft ground training curriculum for the flight crew applicable to the type of operations conducted and aircraft flown, including at least the following aircraft systems—

- (a) aircraft—
 - (i) aircraft dimensions, turning radius, panel layouts, cockpit and cabin configurations; and
 - (ii) other major systems and components or appliances of the aircraft.
- (b) power plants—
 - (i) basic engine description;
 - (ii) engine thrust ratings; and
 - (iii) engine components such as accessory drives, ignition, oil, fuel control, hydraulic, and bleed air features.
- (c) electrical—
 - (i) sources of aircraft electrical power, such as engine driven generators, auxiliary power unit or APU generator, and external power;
 - (ii) electrical buses;
 - (iii) circuit breakers;
 - (iv) aircraft battery; and
 - (v) standby power systems.
- (d) hydraulic—
 - (i) hydraulic reservoirs, pumps, accumulators, filters, check valves, interconnects and actuators; and
 - (ii) other hydraulically operated components.
- (e) fuel—
 - (i) fuel tanks, including location and quantities;
 - (ii) engine driven pumps;
 - (iii) boost pumps;
 - (iv) system valves and cross feeds;
 - (v) quantity indicators;
 - (vi) quantity indicators; and
 - (vii) provisions for fuel jettisoning.
- (f) pneumatic—
 - (i) bleed air sources, auxiliary power unit or external ground air; and
 - (ii) means of routing, venting and controlling bleed air via valves, ducts, chambers, and temperature and pressure limiting devices.
- (g) air conditioning and pressurization—
 - (i) heaters, air conditioning packs, fans, and other environmental control devices;
 - (ii) pressurisation system components such as outflow and negative pressure relief valves; and
 - (iii) automatic, standby, manual pressurisation controls and annunciations.
- (h) flight controls—
 - (i) primary controls, including yaw, pitch, and roll devices;
 - (ii) secondary controls, including leading or trailing edge devices: flaps, trim, and damping mechanisms;
 - (iii) means of actuation, whether direct or indirect or fly by wire; and
 - (iv) redundancy devices.
- (i) landing gear—
 - (i) landing gear extension and retraction mechanism including the operating sequence of struts, doors, and locking devices, and brake and antiskid systems, where applicable;
 - (ii) steering, including nose or body steering gear;
 - (iii) bogie arrangements;
 - (iv) air or ground sensor relays; and
 - (v) visual down lock indicators.
- (j) ice and rain protection—
 - (i) rain removal systems;
 - (ii) anti-icing or de-icing systems affecting flight controls, engines; and
 - (iii) pitot static probes, fluid outlets, cockpit windows, and aircraft structures.

- (k) equipment and furnishings—
 - (i) exits;
 - (ii) galleys;
 - (iii) water and waste systems;
 - (iv) lavatories;
 - (v) cargo areas;
 - (vi) crew member and passenger seats;
 - (vii) bulkheads;
 - (viii) seating and cargo configurations; and
 - (ix) non-emergency equipment and furnishings.
- (l) navigation equipment—
 - (i) flight directors;
 - (ii) horizontal situation indicator;
 - (iii) radio magnetic indicator;
 - (iv) navigation receivers such as global positioning system, automatic direction finder (ADF), very high frequency omnidirectional radio range (VOR), OMEGA, long range navigation (LORAN-C), area navigation (RNAV), marker beacon, distance measuring equipment (DME);
 - (v) inertial systems such as inertia navigation system (INS) and inertia reference (IRS);
 - (vi) functional displays;
 - (vii) fault indications and comparator systems;
 - (viii) aircraft transponders;
 - (ix) radio altimeters;
 - (x) weather radar; and
 - (xi) cathode ray tube or computer-generated displays of aircraft position and navigation information.
- (m) auto flight system—
 - (i) autopilot;
 - (ii) auto throttles;
 - (iii) flight director and navigation systems;
 - (iv) automatic approach tracking;
 - (v) auto land; and
 - (vi) automatic fuel and performance management systems.
- (n) flight instruments—
 - (i) panel arrangement;
 - (ii) flight instruments, including attitude indicator, directional gyro, magnetic compass, airspeed indicator, vertical speed indicator, altimeters, standby instruments; and
 - (iii) instrument power sources, and instrument sensory sources, such as pitot static pressure.
- (o) display systems—
 - (i) weather radar; and
 - (ii) other Cathode ray tube (CRT) displays, such as checklist, vertical navigation or longitudinal navigation displays.
- (p) communication equipment—
 - (i) very high frequency (VHF) or high frequency (HF);
 - (ii) audio panels;
 - (iii) in flight interphone and passenger address systems;
 - (iv) voice recorder; and
 - (v) aircraft communication addressing and reporting system (ACARS).
- (q) warning systems—
 - (i) aural, visual, and tactile warning systems, including the character and degree of urgency related to each signal; and
 - (ii) warning and caution annunciator systems, including ground proximity and take-off warning systems.
- (r) fire protection—

- (i) fire and overheat sensors, loops, modules, or other means of providing visual or aural indications of fire or overheat detection;
 - (ii) procedures for the use of fire handles, automatic extinguishing systems and extinguishing agents; and
 - (iii) power sources necessary to provide protection for fire and overheat conditions in engines, auxiliary power unit, cargo bay or wheel well, cockpit, cabin and lavatories.
- (s) oxygen—
- (i) passenger, crew, and portable oxygen supply systems;
 - (ii) sources of oxygen such as gaseous or solid;
 - (iii) flow and distribution networks;
 - (iv) automatic deployment systems;
 - (v) regulators, pressure levels and gauges; and
 - (vi) servicing requirements.
- (t) lighting—
- (i) cockpit, cabin, and external lighting systems;
 - (ii) power sources;
 - (iii) switch positions; and
 - (iv) spare light bulb locations;
- (u) emergency equipment—
- (i) fire and oxygen bottles;
 - (ii) first aid kits;
 - (iii) life rafts and life preservers;
 - (iv) crash axes;
 - (v) emergency exits and lights;
 - (vi) slides and slide rafts;
 - (vii) escape straps or handles; and
 - (viii) hatches, ladders and movable stairs.
- (v) auxiliary power unit—
- (i) electric and bleed air capabilities;
 - (ii) interfaces with electrical and pneumatic systems;
 - (iii) inlet doors and exhaust ducts; and
 - (iv) fuel supply.
- (6) An AOC holder shall have an initial aircraft ground training curriculum for the flight crew applicable to the type of operations conducted and aircraft flown, including at least the following aircraft systems integration items—
- (a) use of checklist—
 - (i) safety chocks;
 - (ii) cockpit preparation (switch position and checklist flows);
 - (iii) checklist callouts and responses; and
 - (iv) checklist sequence.
 - (b) flight planning—
 - (i) performance limitations, including meteorological, weight, minimum equipment list and configuration deviation list items;
 - (ii) required fuel loads; and
 - (iii) weather planning, lower than standard take-off minimums or alternate requirements.
 - (c) navigation systems—
 - (i) pre-flight and operation of applicable receivers;
 - (ii) onboard navigation systems; and
 - (iii) flight plan information input and retrieval.
 - (d) auto flight— autopilot, auto thrust, and flight director systems, including the appropriate procedures, normal and abnormal indications, and enunciators;
 - (e) cockpit familiarisation—
 - (i) activation of aircraft system controls and switches to include normal, abnormal and emergency switches; and

(ii) control positions and relevant enunciators, lights, or other caution and warning systems.

(7) An AOC holder may have separate initial aircraft ground training curricula of varying lengths and subject emphasis which recognise the experience levels of a flight crew members approved by the Authority.

Initial flight Training- flight crew member

152 (1) No AOC holder shall use any person as a flight crew member unless that person has completed the initial flight training approved by the Authority for the aircraft type.

(2) Initial flight training of a flight crew member shall focus on the manoeuvring and safe operation of the aircraft in accordance with AOC holder's normal, abnormal and emergency procedures.

(3) An AOC holder may have separate initial flight training curriculum which recognise the experience levels of flight crew members approved by the Authority.

(4) Flight training may be conducted in an appropriate aircraft or adequate synthetic flight trainer—

(a) having landing capability; and

(b) qualified for training or checking on circling manoeuvres.

(5) An AOC holder shall ensure that pilot initial flight training includes at least the following—

(a) preparation—

(i) visual inspection, and use authorised of pictorial display for aircraft with a flight engineer;

(ii) pre-taxi procedures; and

(iii) performance limitations

(b) surface operation—

(i) pushback;

(ii) power back taxi, where applicable to type of operation to be conducted;

(iii) starting;

(iv) taxi; and

(v) pre-take-off checks.

(c) take-off—

(i) normal;

(ii) crosswind;

(iii) rejected;

(iv) power failure after v_1 ; and

(v) lower than standard minimum, where applicable to type of operation to be conducted.

(d) climb—

(i) normal; and

(ii) one-engine inoperative during climb to en route altitude.

(iii) en-route:

(iv) steep turns;

(v) approaches to stalls, take-off, en route, and landing configurations;

(vi) in flight power plant shutdown;

(vii) in-flight power plant restart;

(viii) high speed handling characteristics.

(e) descent—

(i) normal; and

(ii) maximum rate.

(f) approaches—

(i) visual flight rules procedures;

(ii) visual approach with 50% loss of power on one-side 2 engines inoperative on 3-engine aircraft for pilot-in-command only;

(iii) visual approach with slat or flap malfunction;

(iv) instrument flight rules precision approaches such as instrument landing system normal and instrument landing system with one-engine inoperative;

- (v) IFR non-precision approaches non-directional radio beacon or NDB normal and VHF omni-directional radio range beacon or VOR normal;
 - (vi) non-precision approach with one engine inoperative Localizer back course procedures, SDF or localizer type directional aid, a global positioning system, TACAN and circling approach procedures;
 - (vii) missed approach from precision approach;
 - (viii) missed approach from non-precision approach; and
 - (ix) missed approach with engine failure.
- (g) landings—
- (i) normal with a pitch mis-trim small aircraft only;
 - (ii) normal from precision instrument approach;
 - (iii) normal from precision instrument approach with most critical engine inoperative;
 - (iv) normal with 50% loss of power on one side 2 engines inoperative on 3-engine aircraft;
 - (v) normal with flap or slat malfunction;
 - (vi) rejected landings;
 - (vii) crosswind;
 - (viii) manual reversion or degraded control augmentation;
 - (ix) short or soft field small aircraft, land amphibian aircraft only; and
 - (x) glassy or rough water, seaplanes only.
- (h) after landing—
- (i) parking;
 - (ii) emergency evacuation; and
 - (iii) docking, mooring, and ramping, seaplanes only.
- (i) other flight procedures during any airborne phase—
- (i) holding;
 - (ii) ice accumulation on airframe;
 - (iii) air hazard avoidance; and
 - (iv) wind shear or microburst.
 - (v) normal, abnormal and alternate systems procedures during any phase:
 - (vi) pneumatic or pressurisation;
 - (vii) air conditioning;
 - (viii) fuel and oil;
 - (ix) electrical;
 - (x) hydraulic;
 - (xi) flight controls;
 - (xii) anti-icing and de-icing systems;
 - (xiii) autopilot;
 - (xiv) flight management guidance systems and automatic or other approach and landing aids;
 - (xv) stall warning devices, stall avoidance devices, and stability augmentation systems;
 - (xvi) airborne weather radar;
 - (xvii) flight instrument system malfunction;
 - (xviii) communications equipment; and
 - (xix) navigation systems.
- (j) emergency systems procedures during any phase—
- (i) aircraft fires;
 - (ii) smoke control;
 - (iii) power plant malfunctions;
 - (iv) fuel jettison;
 - (v) electrical, hydraulic, pneumatic systems;
 - (vi) flight control system malfunction; and
 - (vii) landing gear and flap system malfunction.

- (k) procedures for upset prevention and recovery training in a flight simulation training device as contained in the Procedures for Air Navigation Services.”
- (6) An AOC holder shall ensure that flight engineer training includes at least the following—
- (a) training and practice in procedures related to the carrying out of flight engineer duties and functions, where this training and practice may be accomplished either in flight or, in a synthetic flight trainer;
 - (b) training in knowledge and skills related to visual and instrument flight procedures for the intended area of operation, human performance including threat and error management and in the transport of dangerous goods; and
 - (c) a proficiency check as specified in this Part.

Initial specialised operations training

153 (1) No AOC holder shall use any person as a flight crew member unless that person has completed the appropriate initial specialised operations training curriculum approved by the Authority.

(2) Specialised operations for which initial training curricula shall be developed include—

- (a) low minima operations, including low visibility take-offs and Category II and III operations;
- (b) extended range operations;
- (c) specialised navigation; and
- (d) pilot-in-command right seat qualification.

(3) An AOC holder shall provide initial specialised operations training to ensure that each pilot and flight dispatcher is qualified in the type of operation in which that person serves and in any specialised or new equipment, procedures, and techniques, such as—

- (a) class II navigation—
 - (i) knowledge of specialised navigation procedures, such as Required Navigation Performance (RNP), Minimum Navigation Performance System (MNPS) and Reduced Vertical Separation Minimum (RVSM); and
 - (ii) knowledge of specialised equipment, such as Inertia Navigation System (INS), Long Range Navigation (LORAN), OMEGA.
- (b) Category II and CAT III operations approaches—
 - (i) special equipment, procedures and practice;
 - (ii) a demonstration of competency;
- (c) lower than standard minimum take-offs—
 - (i) runway and lighting requirements;
 - (ii) rejected take-offs at or near V1 with a failure of the most critical engine;
 - (iii) taxi operations; and
 - (iv) procedures to prevent runway incursions under low visibility conditions.
- (d) extended range operations with two turbine engine aeroplanes.
- (e) airborne radar approaches; and
- (f) autopilot instead of co-pilot.

Aircraft differences training

154 (1) No AOC holder shall use any person as a crew member on an aircraft of a type for which a differences curriculum is included in the AOC holder’s approved training programme, unless that person has satisfactorily completed that curriculum, with respect to both the crew member position and the particular variant of that aircraft.

(2) An operator shall ensure that a crew member completes—

- (a) differences training which requires additional knowledge and training on an appropriate training device or the aircraft—
 - (i) when operating another variant of an aircraft of the same type or another type of the same class currently operated; or
 - (ii) when changing equipment procedures on types or variants currently operated.
- (b) familiarisation training which requires the acquisition of additional knowledge—
 - (i) when operating another aircraft of the same type; or
 - (ii) when changing equipment procedures on types of variants currently operated.

(c) the operator referred to in subsection (1) shall specify in the operations manual when such differences training or familiarization training is required.

(3) An AOC holder shall provide aircraft differences training for flight dispatcher when the operator has aircraft variances within the same type of aircraft, which includes at least the following—

(a) operations procedures—

(i) operations under adverse weather phenomena conditions, including clear air turbulence, wind shear, and thunderstorms;

(ii) mass and balance computations and load control procedures;

(iii) aircraft performance computations, to include take-off mass limitations based on departure runway, arrival runway, and en-route limitations, and also engine-out limitations;

(iv) flight planning procedures, to include route selection, flight time, and fuel requirements analysis;

(v) dispatch release preparation;

(vi) crew briefings;

(vii) flight monitoring procedures;

(viii) flight crew response to various emergency situations, including the assistance the aircraft flight dispatcher can provide in each situation;

(ix) minimum equipment list and configuration deviation list procedures;

(x) manual performance of required procedures in case of the loss of automated capabilities;

(xi) training in appropriate geographic areas;

(xii) air traffic control and instrument flight rules procedures, to include ground hold and central flow control procedures; and

(xiii) radiotelephony procedures.

(b) emergency procedures—

(i) actions taken to aid the flight crew; and

(ii) AOC holder and Authority notification.

Use of synthetic flight trainers

155. A synthetic flight trainer that is used for flight crew member qualification shall—

(a) be specifically approved by the Authority for the—

(i) air operator certificate holder;

(ii) type aircraft, including type variations, for which the training or check is being conducted; and

(iii) particular manoeuvre, procedure, or flight crew member function involved.

(b) maintain the performance, functional, and other characteristics that are required for approval;

(c) be modified to conform with any modification to the aircraft being simulated that results in changes to performance, functional, or other characteristics required for approval;

(d) be given a daily functional pre-flight check before use;

(e) have a daily discrepancy logbook kept by the appropriate instructor or check pilot at the end of each training or check flight; and

(f) for initial aircraft type training, be qualified for training and checking on the circling manoeuvre.

Aircraft and instrument proficiency checks

156 (1) No AOC holder shall use any person as a pilot flight crew member unless, since the beginning of the sixth calendar month before that service, that person has passed the proficiency check prescribed by the Authority in the make and model of aircraft on which their services are required.

(2) No AOC holder shall use any person as a flight crew member in instrument flight rules operations unless, from the beginning of the sixth calendar month before that service, that pilot has passed the instrument competency check prescribed by the Authority.

(3) A flight crew member may complete the requirements of subsections (1) and (2) of this Part simultaneously in a make and model of the aircraft.

(4) The completion of an approved operator training programme for the particular aircraft type and the satisfactory completion of a pilot in command proficiency check, shall satisfy the requirement for an aircraft type rating practical test provided that the proficiency check—

- (a) includes all manoeuvres and procedures required for a type rating practical test; and
- (b) is conducted by an examiner.
- (5) Aircraft and instrument proficiency checks for pilot in command and co-pilot shall include the following operations and procedures listed in Table 6.
- (6) Examiners or check pilots may waive certain events on the proficiency check based on an assessment of the pilot's demonstrated level of performance.
- (7) The oral and flight phases of a proficiency check should not be conducted simultaneously.
- (8) When the examiner or check pilot determines that an pilot's performance is unsatisfactory, the examiner or check pilot may terminate the immediately.
- (9) If the proficiency check must be terminated for mechanical or other reasons, and there are events which still need to be repeated, the examiner or check pilot shall issue a letter of discontinuance, valid for sixty days, listing the specific areas of operation that have been successfully completed.
- (10) At least one of the two annual proficiency checks shall be conducted by an examiner.
- (11) The other proficiency check may be conducted by a check pilot or the Authority.

Introduction of new equipment or procedures

157. No AOC holder shall use any person as a flight crew unless such person attends the AOC holder's approved training programme to both the crew member position and the particular variant of that aircraft.

Flight engineer proficiency checks

158 (1) No AOC holder shall use any person as a flight engineer on an aircraft unless within the preceding twelve calendar months he or she has—

- (a) had a proficiency check in accordance with the requirements prescribed by the Authority; or
 - (b) 50 hours flight time for the AOC holder as flight engineer in the type aircraft.
- (2) Examiners shall include during proficiency checks for flight engineers an oral or written examination of the normal, abnormal, and emergency procedures listed below—
- (a) normal procedures—
 - (i) interior pre-flight;
 - (ii) panel set-up;
 - (iii) fuel load;
 - (iv) engine start procedures;
 - (v) taxi and before take-off procedures;
 - (vi) take-off and climb pressurization;
 - (vii) cruise and fuel management;
 - (viii) descent and approach;
 - (ix) after landing and securing;
 - (x) crew coordination;
 - (xi) situational awareness;
 - (xii) performance computations; and
 - (xiii) anti-ice and de-ice measures.
 - (b) abnormal and emergency procedures—
 - (i) troubleshooting;
 - (ii) knowledge of checklist;
 - (iii) crew coordination;
 - (iv) minimum equipment list or MEL
 - (v) configuration deviation list or CDL; and
 - (vi) emergency or alternate operation of aircraft flight systems.

Supervised line flying- pilots

159 (1) A pilot initially qualifying as a pilot in command shall complete a minimum of ten flights performing the duties of a pilot in command under the supervision of an check pilot.

(2) A pilot in command transitioning to a new aircraft type shall complete a minimum of five flights performing the duties of a pilot in command under the supervision of an check pilot.

(3) A pilot qualifying for duties other than pilot in command shall complete a minimum of five flights performing those duties under the supervision of an check pilot.

(4) During the time that a qualifying pilot in command is acquiring operating experience, an authorised instructor who is also serving as the pilot in command shall occupy a co-pilot station.

(5) In the case of a transitioning PIC, the check pilot serving as pilot in command may occupy the observer's seat if the transitioning pilot has made at least two take-offs and landings in the type aircraft used, and has satisfactorily demonstrated to the authorised instructor that he is qualified to perform the duties of a pilot in command for that type of aircraft.

Supervised line flying- flight engineers.

160 A flight engineer who has qualified on a new type rating on an aircraft shall perform the functions of a flight engineer for a minimum of five flights under the supervision of a flight instructor or qualified flight engineer approved by the air operator certificate holder and accepted by the Authority

Route and area checks: pilot qualification

161 (1) No AOC holder shall use any person as a pilot unless, within the preceding twelve months, that person has passed a route check in which the person satisfactorily performed his assigned duties in one of the types of aircraft he is to fly.

(2) No person shall perform pilot in command duties over a designated special operational area that requires a special navigation system or procedures or in EDTO operations unless his or her competency with the system and procedures has been demonstrated to the AOC holder within the past twelve months.

(3) A pilot in command of an aircraft shall demonstrate special operational competency by navigation over the route or area as pilot in command under the supervision of a check pilot on an annual basis by demonstrating a knowledge of—

- (a) the terrain and minimum safe altitudes;
- (b) the seasonal meteorological conditions;
- (c) the search and rescue procedures;
- (d) the navigational facilities and procedures, including any long-range navigation procedures, associated with the route along which the flight is to take place;
- (e) procedures applicable to flight paths over heavily populated areas of high air traffic density, obstructions, physical layout, lighting, approach aids and arrival, departure, holding and instrument approach procedures, and applicable operating minima; and
- (f) the meteorological, communication and air traffic facilities, services and procedures.

Low minimums authorization- PIC

162. Where a pilot in command has not completed—

- (a) fifteen flights performing pilot in command duties in an aircraft type, including five approaches to landing using Category I or II operations procedures, that pilot in command shall not plan for or initiate an instrument approach when the ceiling is less than 300 feet and the visibility is less than 2000 m; and
- (b) twenty flights performing pilot in command duties in an aircraft including five approaches and landing using Category III operations procedures, that pilot in command shall not plan for or initiate an approach when the ceiling is less than 100 feet or the visibility is less than 400 m runway visual range (RVR).

Designated Special aerodromes- pilot in command qualification

163 (1) The Authority may determine that certain aerodrome, due to items such as surrounding terrain obstructions, or complex approach or departure procedures are special airport qualifications and that certain areas or routes, or both require a special type of navigation qualification.

(2) No AOC holder shall use any person as pilot in command for operations at special airport qualifications aerodromes unless within the preceding twelve months the PIC—

- (a) has been qualified by the AOC holder through a pictorial means acceptable to the Authority for that aerodrome;
- or

- (b) the assigned co-pilot has made a take-off and landing at that aerodrome or while serving as a flight crew member for the AOC holder.

Designated special airport qualifications aerodrome limitations

- 164 (1) Designated special airport qualifications aerodrome limitations are not applicable if the operation occurs—
- (a) during daylight hours;
 - (b) when the visibility is at least 5 km; and
 - (c) when the ceiling at that aerodrome is at least 1,000 feet above the lowest initial approach altitude prescribed for an instrument approach procedure.

Recurrent training and checking- flight crew members

- 165 (1) An operator shall ensure that—
- (a) a flight crew member undergoes recurrent training listed in subsection (2) and checking in subsection (3) and that all such training and checking is relevant to the type or variant of aircraft on which the flight crew member operates; and
 - (b) a recurrent training and checking programme is established in the operations manual and approved by the Authority.
- (3) Recurrent training referred to in subsection (1) shall be conducted by the following personnel—
- (a) ground and refresher training: by suitably qualified personnel;
 - (b) aeroplane synthetic flight trainer training: by an authorised instructor or in the case of the synthetic flight trainer content schedule, a synthetic flight trainer authorised instructor provided that the authorised instructor or synthetic flight trainer authorised instructor satisfied the operator's experience and knowledge requirements sufficient to instruct on the items specified in the operations manual;
 - (c) emergency and safety equipment training: by suitably qualified personnel;
 - (d) crew resource management training: by suitably qualified personnel to integrate elements of crew resource management into all phases of recurrent training; and
 - (e) modular crew resource management training: by at least one Crew Resource Management (CRM) trainer acceptable to the Authority who may be assisted by experts in order to address specific areas.
- (4) The recurrent checking referred to in subsection (1) shall be conducted by the following personnel—
- (a) operator proficiency check: by a check pilot or flight engineer authorized by the AOC holder and accepted by the Authority, as appropriate, or, if the check is conducted in a synthetic flight trainer training device, by check pilot or authorised flight engineer as appropriate; or
 - (b) line checks: by a check pilot of the operator and acceptable to the Authority; and
 - (c) emergency and safety equipment checking by suitably qualified personnel acceptable to the Authority.
- (5) The period of validity of an operator proficiency check shall be—
- (a) six months in addition to the remainder of the month of issue; or
 - (b) if issued within the final three months of validity of a previous operator proficiency check, extended from the date of issue until six months from the expiry date of that previous operator proficiency check.
- (6) An operator shall ensure that each flight crew member undergoes a line check on the aircraft to demonstrate his competence in carrying out normal line operations described in the operations manual.
- (7) The period of validity of a line check referred to in subsection shall be—
- (a) twelve months, in addition to the remainder of the month of issue; or
 - (b) if issued within the final three months of validity of a previous line check, extended from the date of issue until twelve months from the expiry date of that previous check.
- (8) An operator shall ensure that each flight crew member undergoes training and checking on the location and use of emergency and safety equipment carried.
- (9) The period of validity of an emergency and safety equipment check referred to in subsection (7) shall be—
- (a) twelve months in addition to the remainder of the month of issue; or
 - (b) if issued within the final three months of validity of a previous emergency and safety check, extended from the date of issue until twelve months from the expiry date of the previous emergency and safety equipment check.
- (10) An operator shall ensure—

- (a) elements of CRM are integrated into all appropriate phases of the recurrent training; and
 - (b) a flight crew member undergoes specific modular CRM training and all major topics of CRM training shall be covered over a period not exceeding three years.
- (11) An operator shall ensure that each flight crew member undergoes—
- (a) ground and refresher training at least every twelve months, if the training is conducted within three months prior to the expiry of the twelve months period, the next ground and refresher training must be completed within twelve months of the original expiry date of the previous ground and refresher training; and
 - (b) aircraft training or synthetic flight trainer training at least every six months, if the training is conducted within three months prior to the expiry of the twelve months period, the next aircraft or synthetic flight trainer training must be completed within six months of the original expiry date of the previous aircraft or synthetic flight trainer training.

Check pilot training

166 (1) No AOC holder shall use any person as a check pilot in an aircraft or check pilot in a synthetic flight trainer in a training programme unless, with respect to the aircraft type involved, that person has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training, that are required to serve as pilot-in-command PIC.

- (2) An AOC holder shall ensure that initial ground training for check pilots includes—
- (a) check pilot duties, functions, and responsibilities;
 - (b) applicable regulations and the AOC holder's policies and procedures;
 - (c) appropriate methods, procedures, and techniques for conducting the required checks;
 - (d) proper evaluation of student performance including the detection of:
 - (e) improper and insufficient training; and
 - (f) personal characteristics of an applicant that could adversely affect safety.
 - (g) appropriate corrective action in the case of unsatisfactory checks; and
 - (h) approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the aircraft.

(3) Transition ground training for all check pilots shall include the approved methods, procedures, and limitations for performing the required normal, abnormal and emergency procedures applicable to the aircraft to which the check pilot is in transition.

(4) An AOC holder shall ensure that the initial and transition flight training for check pilots in an aircraft include—

- (a) training and practice in conducting flight evaluations, from the left and right pilot seats for pilot check pilots in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight checks;
- (b) the potential results of improper, untimely, or non-execution of safety measures during an evaluation; and
- (c) the safety measures, to be taken from either pilot seat for pilot check pilots, for emergency situations that are likely to develop during an evaluation.
- (d) training and practice in conducting flight checks in the required normal, abnormal, and emergency procedures to ensure competence to conduct the evaluations checks required by this regulation; and
- (e) training in the operation of synthetic flight trainers to ensure competence to conduct the evaluations required by this Part.
- (f) (5) An AOC holder shall accomplish flight training for check pilot in full or in part in an aircraft, in flight in a synthetic flight trainer, as appropriate.

Authorised instructor or synthetic flight trainer and authorised instructor training

167 (1) No AOC holder shall use any person as an authorised instructor or a synthetic flight trainer authorised instructor in a training programme unless—

- (a) that person has satisfactorily completed initial or transition authorized instructor or a synthetic flight trainer authorised instructor training, as appropriate; and

- (b) within the preceding 24 months, that person satisfactorily conducts instruction under the observation of an authorised person, an AOC holder's check pilot, an authorised flight engineer, as appropriate, or an examiner employed by the AOC holder.
- (2) An AOC holder shall—
- (a) accomplish the observation check for a authorized instructor or a synthetic flight trainer authorised instructor, in part or in full, in an aircraft, or a synthetic flight trainer; as appropriate;
 - (b) ensure that initial ground training for an authorised instructor and synthetic flight trainer authorised instructor includes the following—
 - (i) the duties, functions, and responsibilities;
 - (ii) applicable regulations and the AOC holder's policies and procedures;
 - (iii) appropriate methods, procedures, and techniques for conducting the required checks; and
 - (iv) proper evaluation of trainee performance including the detection of—
 - A. improper and insufficient training; and
 - B. personal characteristics of an applicant that could adversely affect safety.
 - (v) appropriate corrective action in the case of unsatisfactory checks;
 - (vi) approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the aircraft; and
 - (vii) except for holders of a flight instructor licence;
 - (viii) the fundamental principles of the teaching-learning process;
 - (ix) teaching methods and procedures; and
 - (x) the instructor-trainee relationship.
 - (c) ensure that the transition ground training for an authorised instructor and synthetic flight trainer authorised instructor includes the approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the aircraft to which the authorised instructor is in transition;
 - (d) ensure that the initial and transition flight training for an authorized instructor and synthetic flight trainer authorised instructor includes the following—
 - (i) the safety measures for emergency situations that are likely to develop during instruction;
 - (ii) the potential results of improper, untimely, or non-execution of safety measures during instruction;
 - (iii) for pilot authorised instructor:
 - (iv) in-flight training and practice in conducting flight instruction from the left and right pilot seats in the required normal, abnormal, and emergency procedures to ensure competence as an instructor; and
 - (v) the safety measures to be taken from either pilot seat for emergency situations that are likely to develop during instruction; and
 - (vi) for authorised flight engineer instructor, in-flight training to ensure competence to perform assigned duties.
 - (e) accomplish the flight training requirements for an authorised instructor in full or in part in an aircraft, in flight or in a synthetic flight trainer;
 - (f) ensure that the initial and transition flight training for synthetic flight trainer authorised instructor includes the following:
 - (i) training and practice in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight instruction required by this regulation, where the training and practice are accomplished in full or in part in a synthetic flight trainer; and
 - (ii) training in the operation of synthetic flight trainers, to ensure competence to conduct the flight instruction required by this regulation.

Authorised instructor qualifications

168 (1) No AOC holder shall use any person as an instructor in an established training programme unless, with respect to the aircraft type involved, that person—

- (a) holds licences and ratings required to serve as a pilot in command or a flight engineer;

- (b) has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training, that are required to serve as a pilot in command or a flight engineer, as applicable;
- (c) has satisfactorily completed the appropriate proficiency, competency and recency of experience checks that are required to serve as a pilot in command or a flight engineer, as applicable;
- (d) has satisfactorily completed the applicable initial or transitional training requirements and the Authority-observed in-flight competency check; and
- (e) holds a Class 1 medical certificate.

Check pilot and authorised flight engineer qualifications

169. (1) No air operator certificate (AOC) holder shall use any person, as a check pilot or an flight engineer authorised by the AOC holder and accepted by the Authority in an established training programme unless, with respect to the aircraft type involved, that person—

- (a) holds the pilot licences and ratings required to serve as pilot in command or a flight engineer;
- (b) has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training, that are required to serve as a pilot in command or a flight engineer;
- (c) has satisfactorily completed the appropriate proficiency, competency and recency of experience checks that are required to serve as a pilot in command or a flight engineer;
- (d) has satisfactorily completed the applicable initial or transitional training requirements and the Authority-observed in-flight competency check;
- (e) holds Class I or II medical certificate as may be applicable; and
- (f) has been approved by the Authority for the check pilot or authorised flight engineer duties involved as applicable.

Check pilot designation, authorizations and limitations

170 (1) No AOC holder shall use any person as a check pilot for—

- (a) any flight check unless that person has been designated by name for specified function by the Authority within the preceding twelve months;
- (b) for any check—
 - (i) in an aircraft as a required flight crew member unless that person holds the required flight crew licence and ratings and has completed for the AOC holder all applicable training, qualification and currency requirements under this Part applicable to the crew position and the flight operations being checked;
 - (ii) in an aircraft as an observer check pilot unless that person holds the pilot licences and ratings and has completed all applicable training, qualification and line observation requirements under this Part applicable to the position and the flight operations being checked; or
 - (iii) in a synthetic flight trainer unless that person has completed or observed with the AOC holder all training, qualification and line observation requirements under this Part applicable to the position and flight operations being checked.
- (2) For purposes of subsection (1), a check pilot shall be authorised to—
 - (a) conduct proficiency or competency checks, line checks, and special qualification checks;
 - (b) supervise the re-establishment of landing currency; and
 - (c) supervise any initial operating experience requirements prescribed by the regulations or the Authority.

Synthetic flight trainer approval

171. An AOC holder shall not use a synthetic flight trainer for—

- (a) training or checking unless that synthetic flight trainer has been specifically approved for the AOC holder in writing by the Authority; or
- (b) any purpose other than that specified in the Authority's approval.

Line qualification: check pilot and instructor

172. No AOC holder shall use any person as a check pilot or synthetic flight trainer instructor unless, within the preceding twelve months before that service, that person has—

- (a) flown at least five flights as a required flight crew member for the type of aircraft involved; or

(b) observed, in the cockpit, the conduct of two complete flights in the aircraft type to which the person is assigned.

Termination of a proficiency, competence or line check

173. No air operator certificate holder shall use a crew member or flight dispatcher in whose check was terminated in commercial air transport operations until the completion of a satisfactory recheck of that crew member or flight dispatcher has been carried out.

Recording of crew member qualifications

174 (1) The air operator certificate holder shall record and maintain for each crew member and flight dispatcher, a record of each test and check as required by this Part.

(2) A pilot may complete the curricula required by this Part concurrently or intermixed with other required curricula, but completion of each of these curricula shall be recorded separately.

Monitoring of training and checking activities

175 (1) An AOC holder shall forward to the Authority, at least five working days prior to the scheduled activity, the dates, location, reporting times and report of all—

- (a) training for which a curriculum is approved in the AOC holder's training programme; and
- (b) proficiency, competence and line checks, so as to enable adequate supervision of its training and checking activities,

(2) Failure to provide the information in subsection (1) may invalidate the training or check and the Authority may require that it be repeated for observation purposes.

Eligibility period

176 (1) A crew member who is required to take a proficiency check, a test or competency check, or recurrent training to maintain qualification for commercial air transport operations shall complete those requirements at any time during the eligibility period.

(2) The eligibility period is defined as the 3 month period including the month prior, the month due, and the month after any due date specified by this Part.

(3) Completion of the requirement at any time during the period shall be considered as completed in the month due for calculation of the next due date.

SUB PART IX
FLIGHT DISPATCHER

Initial Training-flight dispatcher

177 (1) No AOC holder shall use any person as a flight dispatcher unless that person has completed the initial training approved by the Authority.

(2) Aircraft initial flight dispatcher training shall include the pertinent portions of the operations manual relating to aircraft specific flight preparation procedures, performance, mass and balance, systems, limitations for the aircraft types within the fleet.

(3) A flight dispatcher shall provide initial aircraft training for flight dispatchers that include instruction in at least the following general dispatch subjects—

- (a) normal and emergency communications procedures;
- (b) available sources of weather information;
- (c) actual and prognostic weather charts;
- (d) interpretation of weather information;
- (e) adverse weather phenomena, such as clear air turbulence, wind shear, and thunderstorms;
- (f) notice to Airmen or NOTAM system;
- (g) navigational charts and publications;
- (h) air traffic control and instrument flight rules procedures;
- (i) familiarisation with operational area;
- (j) characteristics of special aerodromes and other operationally significant aerodromes which the operator uses, such as terrain, approach aids, or prevailing weather phenomena;

- (k) joint flight dispatcher and group responsibilities; and
- (l) approved crew resource management training for flight dispatchers.

(4) An AOC holder shall provide initial aircraft training for flight dispatchers that include instruction in at least the following aircraft characteristics—

- (a) general operating characteristics of the AOC holder's aircraft;
- (b) aircraft specific training with emphasis on the following topics—
 - (i) aircraft operating and performance characteristics;
 - (ii) navigation equipment;
 - (iii) instrument approach and communications equipment; and
 - (iv) emergency equipment.
- (c) flight manual training; and
- (d) equipment training.

(5) An AOC holder shall provide initial aircraft training for flight dispatchers that include instruction in at least the following emergency procedures—

- (a) assisting the flight crew in an emergency; and
- (b) alerting of appropriate governmental, company and private agencies.

(6) An AOC holder shall ensure that initial ground training for flight dispatchers includes a competence check given by an appropriate supervisor or ground instructor that demonstrates the required knowledge and abilities.

Competence checks- flight dispatchers.

178 (1) No AOC holder shall use any person as a flight dispatcher unless, within the preceding 12 months before that service, such person passed the competency check, approved by the Authority, performing the flight preparation and subsequent duties appropriate to that person's assignment.

(2) Evaluators of the flight dispatcher referred to under subsection (1) shall conduct competency checks for flight dispatchers to demonstrate that the candidate's proficiency level is sufficient to ensure the successful outcome of all dispatch operations.

(3) An authorised person shall observe and evaluate competency checks for flight dispatchers.

(4) Each competency check for flight dispatchers shall include—

- (a) an evaluation of all aspects of the dispatch function;
- (b) a demonstration of the knowledge and abilities in normal and abnormal situations; and
- (c) an observation of actual flights being dispatched.

(5) An evaluator of newly hired flight dispatcher shall include during initial competency checks, an evaluation of all of geographic areas and types of aircraft the flight dispatcher shall be qualified to dispatch.

(6) The authorised person may approve a competency check of representative aircraft types when, in his judgement, a check including all types is impractical or unnecessary.

(7) Evaluators may limit initial equipment and transition competency checks solely to the dispatch of the types of aircraft on which the flight dispatcher is qualifying, unless the check is to simultaneously count as a recurrent check.

(8) An evaluator of flight dispatchers shall include, during recurrent and re-qualification competency checks, a representative sample of aircraft and routes for which the flight dispatchers maintain current qualification.

(9) A flight dispatcher shall not qualify in extended diversion time operations or EDTO or other special operations authorised by the Authority unless that flight dispatcher submits special operations competency checks to the Authority.

flight dispatcher -Persons qualified in flight release

179 (1) An Operator engaging flight dispatchers employed in conjunction with an approved method of control and supervision of flight operations shall be licensed in accordance with the provisions of Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019.

(2) No person shall act as a flight dispatcher in releasing a scheduled passenger-carrying commercial air transport operation aircraft unless that person holds a flight dispatcher licence or an Airline Transport Pilot Licence, and is currently qualified by the air operator certificate holder for the operation and type of aircraft used.

(3) In accepting proof of qualifications other than the option of holding of a flight dispatcher license, the Authority, in accordance with the approved method of control and supervision of flight operations, shall require that, as a minimum,

such persons meet the requirements specified in the Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019 for the flight dispatcher license.

- (4) A flight dispatcher shall not be assigned to duty unless that person has—
- (a) 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 regulation 26 of this Part;
 - (b) made, within the preceding 12 months, at least two qualification flights in the flight crew compartment of an aeroplane over any area for which that individual is authorized to exercise flight supervision and the flight should include landings at as many aerodromes as practicable;
 - (c) demonstrated to the operator a knowledge of—
 - (i) the contents of the operations manual described in the Second Schedule;
 - (ii) the radio equipment in the aeroplanes used; and
 - (iii) the navigation equipment in the aeroplanes used;
 - (d) demonstrated to the operator a knowledge of the following details concerning operations for which the officer is responsible and areas in which that individual is authorised to exercise flight supervision—
 - (i) the seasonal meteorological conditions and the sources of meteorological information;
 - (ii) the effects of meteorological conditions on radio reception in the aeroplanes used;
 - (iii) the peculiarities and limitations of each navigation system which is used by the operation; and
 - (iv) the aeroplane loading instructions;
 - (e) demonstrated to the operator knowledge and skills related to human performance relevant to dispatch duties; and
 - (f) demonstrated to the operator the ability to perform the duties specified in subsection 102 of this Part.
- (5) A flight dispatcher assigned to duty shall maintain complete familiarisation with all features of the operation which are pertinent to such duties, including knowledge and skills related to human performance.
- (6) A flight dispatcher shall not be assigned to duty after 12 consecutive months of absence from such duty, unless the provisions of subsection (4) are met.

Line Observations-flight dispatcher.

180. No AOC holder shall use any person as a flight dispatcher unless within the preceding twelve months before that service, that person has observed, in the cockpit, the conduct of two complete flights over routes representative of those that the operator services.

Company procedures indoctrination

181 (1) No AOC holder shall use any person as a crew member or flight dispatcher unless that person has completed the company procedures indoctrination curriculum approved by the Authority, which shall include a complete review of operations manual procedures pertinent to the crew member or flight operation officer's duties.

(2) An AOC holder shall ensure that all operations personnel are provided with company indoctrination training that covers the following areas—

- (a) AOC holder's organisation, scope of operation, and administrative practices as applicable to crew member assignments and duties;
- (b) appropriate provisions of civil aviation regulations and other applicable regulations and guidance materials;
- (c) AOC holder policies and procedures;
- (d) applicable crew member manuals; and
- (e) appropriate portions of the AOC holder's operations manual.

(3) An AOC holder shall provide a minimum of 40 hours of programmed instruction for basic indoctrination training unless a reduction of the hours of instruction is approved by the Authority.

Recurrent Training- flight dispatchers

182 (1) No AOC holder shall use any person as a flight dispatcher unless within the preceding twelve months that person has completed the recurrent ground curricula approved by the Authority.

(2) An AOC holder shall—

- (a) establish and maintain a recurrent training programme, approved by the Authority and established in the AOC holder's operations manual, to be completed annually by each flight dispatcher;

- (b) conduct all recurrent training, of flight dispatchers, by suitably qualified personnel;
- (c) ensure that, every twelve months, each flight dispatcher receive recurrent training in at least the following—
 - (i) aircraft-specific flight preparation;
 - (ii) emergency assistance to flight crews;
 - (iii) crew resource management; and
 - (iv) recognition and transportation of dangerous goods; and
- (d) may administer each of the recurrent ground and flight training curricula concurrently or intermixed, but shall record completion of each of these curricula separately.

(3) A flight dispatcher shall undergo recurrent training relevant to the type or variant of aircraft and operations conducted by the AOC holder.

Flight dispatcher-licence

183 (1) Where the Authority requires that a flight dispatcher, employed in conjunction with an approved method of control and supervision of flight operations, be licensed, that flight dispatcher shall be licensed in accordance with the provisions of Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019.

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

(3) A flight dispatcher shall not be assigned to duty unless that person has—

- (a) satisfactorily completed the operator-specific training course that addresses all the specific components of its approved method of control and supervision of flight operations specified in section 9;
- (b) made, within the preceding 12 months, at least a one-way qualification flight in the flight crew compartment of an aeroplane over any area for which that individual is authorised to exercise flight supervision and the flight should include landings at as many aerodromes as practicable;
- (c) demonstrated to the operator a knowledge of—

- (i) the contents of the operations manual described in Appendix 2;
- (ii) the radio equipment in the aeroplanes used; and
- (iii) the navigation equipment in the aeroplanes used;

(d) demonstrated to the operator a knowledge of the following details concerning operations for which the officer is responsible and areas in which that individual is

(e) authorised to exercise flight supervision—

- (i) the seasonal meteorological conditions and the sources of meteorological information;
- (ii) the effects of meteorological conditions on radio reception in the aeroplanes used;
- (iii) the peculiarities and limitations of each navigation system which is used by the operation; and
- (iv) the aeroplane loading instructions;

(f) demonstrated to the operator knowledge and skills related to human performance relevant to dispatch duties; and

(g) demonstrated to the operator the ability to perform the duties specified in section 46 of this Part.

(4) A flight dispatcher assigned to duty shall maintain complete familiarisation with all features of the operation 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 section 183 are met and satisfied.

SUB PART X
MANUALS, LOGS AND RECORDS

Flight manual

184 (1) An operator shall ensure that a flight manual contains the information specified in the Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018.

(2) The flight manual shall be updated by implementing changes made mandatory by the Authority.

Operator's maintenance control manual

185 (1) The operator's maintenance control manual provided in accordance with section 115, shall contain the information—

- (a) a description of the procedures required by section 114 including where applicable—
 - (i) a description of the administrative arrangements between the operator and the approved maintenance organisation;
 - (ii) 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.
 - (b) names and duties of the qualified person or persons required by section 114(4);
 - (c) a reference to the maintenance programme required by section 116(5);
 - (d) a description of the methods used for the completion and retention of the operator's continuing airworthiness or maintenance records required by section 117;
 - (e) a description of the procedures for monitoring, assessing and reporting maintenance and operational experience required by section 118(1).
 - (f) a description of the procedures for complying with the service information reporting requirements of the Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018.;
 - (g) a description of procedures for assessing continuing airworthiness information and implementing any resulting actions, as required by section 118(2).
 - (h) a description of the procedures for implementing action resulting from mandatory continuing airworthiness information;
 - (i) a description of establishing and maintaining a system of analysis and continued monitoring of the performance and efficiency of the maintenance programme in order to correct any deficiency in that programme;
 - (j) a description of aircraft types and models to which the manual applies;
 - (k) a description of procedures for ensuring that unserviceabilities affecting airworthiness are recorded and rectified; and
 - (l) a description of the procedures for advising the Authority of significant in-service occurrences.
- (2) An operator shall submit two copies of the maintenance control manual referred to in subsection (1) and any amendments to it review and approval by the Authority.

Maintenance programme

186 (1) An operator shall ensure that maintenance programme for each aeroplane as required by section 116 shall contain the following information—

- (a) maintenance tasks and the intervals at which these are to be performed, taking into account the anticipated utilisation of the aeroplane;
 - (b) where applicable, a continuing structural integrity programme;
 - (c) procedures for changing or deviating from paragraphs (a) and (b); and
 - (d) where applicable, condition monitoring and reliability programme descriptions for aircraft systems, components and engines.
- (2) Maintenance tasks and intervals that have been specified as mandatory in approval of the type design shall be identified as such by the operator.
- (3) The maintenance programme shall be based on maintenance programme information made available by the State of Design or by the organisation responsible for the type design, and any additional applicable experience.
- (4) Electronic Aircraft Maintenance Records (EAMR) may be used in accordance with Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018 that address the existence and use of EAMR digital and other paperless forms of maintenance records.

Journey log book

- 187 (1) An aeroplane journey log book shall contain the following items and the corresponding roman numerals—
- (a) I — Aeroplane nationality and registration
 - (b) II — Date
 - (c) III — Names of crew members
 - (d) IV — Duty assignments of crew members
 - (e) V — Place of departure
 - (f) VI — Place of arrival
 - (g) VII — Time of departure

- (h) VIII — Time of arrival
- (i) IX — Hours of flight
- (j) X — Nature of flight (private, aerial work, scheduled or non-scheduled)
- (k) XI — Incidents, observations, if any
- (l) XII — Signature of person in charge.

- (2) Entries in the journey log book shall be made currently and in ink or indelible pencil.
- (3) Completed journey log book shall be retained to provide a continuous record of the last 6 months of operations.

Records of emergency and survival equipment carried

189 (1) An Operator shall at all times have available for immediate communication to rescue coordination centers, lists containing information on the emergency and survival equipment carried on board any aeroplane engaged in air navigation.

- (2) The information specified in subsection (1) shall include, as applicable—
 - (a) the number, colour and type of life rafts and pyrotechnics;
 - (b) details of emergency medical supplies;
 - (c) water supplies; and
 - (d) the type and frequencies of the emergency portable radio equipment.

Portable electronic devices

189 A pilot in command or any other crew member shall not permit any person to use, nor shall any person use a portable electronic device on board an aircraft that may adversely affect the performance of aircraft systems and equipment unless—

- (a) for IFR operations other than commercial air transport, the pilot in command allows such a device prior to its use; or
- (b) for commercial air transport operations, the AOC holder makes a determination of acceptable devices and publishes that information in the Operations Manual for the crew members' use; and
- (c) the pilot in command informs passengers of the permitted use.

Flight recorder records

190 The operator shall ensure that to the extent possible, in the event the aeroplane becomes involved in an accident or incident, the preservation of all related flight recorder records and, where necessary, the associated flight recorders, and their retention in safe custody pending their disposition as determined in accordance with the Civil Aviation (Aircraft Accident and Incident Investigation) Regulations published in Statutory Instrument 78 of 2018;

SUB PART XI
CABIN CREW

Initial aircraft ground training- cabin crew members

191 (1) No AOC shall use any person as a cabin crew member unless that person has completed the initial ground training approved by the Authority for aircraft type.

(2) Initial aircraft ground training for cabin crew members shall include the pertinent portions of the operations manuals relating to aircraft specific configuration, equipment, normal and emergency procedures for the aircraft types within the fleet.

(3) An AOC holder shall have an initial ground training curriculum for cabin crew members applicable to the type of operations conducted and aircraft flown, including at least the following general subjects—

- (a) aircraft familiarisation—
 - (i) aircraft characteristics and description;
 - (ii) cockpit configuration;
 - (iii) cabin configuration;
 - (iv) galleys;
 - (v) lavatories; and

- (vi) stowage areas.
 - (b) aircraft equipment and furnishings—
 - (i) cabin crew member stations;
 - (ii) cabin crew member panels;
 - (iii) passenger seats;
 - (iv) passenger service units and convenience panels;
 - (v) passenger information signs;
 - (vi) aircraft markings; and
 - (vii) aircraft placards.
 - (c) aircraft systems—
 - (i) air conditioning and pressurisation system;
 - (ii) aircraft communication systems call, interphone and passenger address;
 - (iii) lighting and electrical systems;
 - (iv) oxygen systems flight crew, observer and passenger; and
 - (v) water system.
 - (d) aircraft exits—
 - (i) general information;
 - (ii) exits with slides or slide rafts for pre-flight and normal operation;
 - (iii) exits without slides pre-flight and normal operations; and
 - (iv) window exits.
 - (e) crew member communication and coordination—
 - (i) authority of pilot-in-command;
 - (ii) routine communication signals and procedures; and
 - (iii) crew member briefing.
 - (f) routine crew member duties and procedures—
 - (i) crew member general responsibilities;
 - (ii) reporting duties and procedures for specific aircraft;
 - (iii) pre-departure duties and procedures prior to passenger boarding;
 - (iv) passenger boarding duties and procedures;
 - (v) prior-to-movement-on-the-surface duties and procedures;
 - (vi) prior-to-take-off duties and procedures applicable to specific aircraft;
 - (vii) in-flight duties and procedures;
 - (viii) prior-to-landing duties and procedures;
 - (ix) movement on the surface and arrival duties and procedures;
 - (x) after-arrival duties and procedures; and
 - (xi) intermediate stops.
 - (g) passenger handling responsibilities—
 - (i) crew member general responsibilities;
 - (ii) infants, children, and unaccompanied minors;
 - (iii) passengers needing special assistance;
 - (iv) passengers needing special accommodation;
 - (v) carry-on stowage requirements;
 - (vi) passenger seating requirements;
 - (vii) smoking and no-smoking requirements and;
 - (viii) approved Crew Resource Management (CRM) training.
- (4) An AOC holder shall have an initial ground training curriculum for cabin crew members applicable to the type of operations conducted and aircraft flown, including at least the following aircraft specific emergency subjects—
- (a) emergency equipment—
 - (i) emergency communication and notification systems;
 - (ii) aircraft exits;
 - (iii) exits with slides or slide rafts, emergency operation;

- (iv) slides and slide rafts in a ditching;
 - (v) exits without slides emergency operation;
 - (vi) window exits emergency operation;
 - (vii) exits with tail cones, emergency operation;
 - (viii) cockpit exits emergency operation;
 - (ix) ground evacuation and ditching equipment;
 - (x) first-aid equipment;
 - (xi) portable oxygen systems, oxygen bottles, chemical oxygen generators, protective breathing equipment;
 - (xii) fire-fighting equipment;
 - (xiii) emergency lighting systems; and
 - (xiv) additional emergency equipment.
- (b) emergency assignments and procedures—
- (i) general types of emergencies specific to aircraft;
 - (ii) emergency communication signals and procedures;
 - (iii) rapid decompression;
 - (iv) insidious decompression and cracked window and pressure seal leaks;
 - (v) fires;
 - (vi) ditching;
 - (vii) ground evacuation;
 - (viii) unwarranted evacuation for example, passenger initiated;
 - (ix) illness or injury;
 - (x) abnormal situations involving passengers or crew members;
 - (xi) unlawful interference;
 - (xii) bomb threat;
 - (xiii) turbulence;
 - (xiv) other unusual situations; and
 - (xv) previous aircraft accidents and incidents.
- (c) aircraft specific emergency drills—
- (i) emergency exit drill;
 - (ii) hand fire extinguisher drill;
 - (iii) emergency oxygen system drill;
 - (iv) flotation device drill;
 - (v) ditching drill, if applicable;
 - (vi) life raft removal and inflation drill, if applicable;
 - (vii) slide raft pack transfer drill, if applicable;
 - (viii) slide or slide raft deployment, inflation, and detachment drill, where applicable; and
 - (ix) emergency evacuation slide drill, where applicable.
- (5) An AOC holder shall ensure that initial ground training for cabin crew members include a competence check to determine that person's ability to perform assigned duties and responsibilities.
- (6) An AOC holder shall ensure that initial ground training for cabin crew members consists of at least the following programmed hours of instruction—
- (a) multi-engine turbine: 32 hours; and
 - (b) multi-engine reciprocating: 16 hours.
- (7) An operator shall ensure that a training programme is completed by all persons before being assigned as a cabin crew member.
- (8) Cabin crew members shall complete a recurrent training programme annually.
- (9) The training programmes shall ensure that each person is—
- (a) 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;

- (b) 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;
- (c) 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;
- (d) aware of the types of dangerous goods which may, and may not, be carried in a passenger cabin; and
- (e) knowledgeable about human performance as related to passenger cabin safety duties including flight crew-cabin crew coordination.

Competence checks: cabin crew members

192 (1) No person shall not serve nor shall any AOC holder use a person as a cabin crew member unless, within the preceding twelve months before that service, that person has passed the competency check approved by the Authority performing the emergency duties appropriate to that person's assignment.

(2) Evaluators shall conduct competency checks for cabin crew members to demonstrate that the candidate's proficiency level is sufficient to successfully perform assigned duties and responsibilities.

(3) A qualified supervisor or inspector approved by the Authority shall observe and evaluate competency checks for cabin crew members.

(4) Evaluators shall include during each cabin crew member competency check a demonstrated knowledge of—

- (a) emergency equipment: emergency communication and notification systems—
 - (i) aircraft exits;
 - (ii) exits with slides or slide rafts emergency operation;
 - (iii) slides and slide rafts in a ditching;
 - (iv) exits without slides emergency operation;
 - (v) window exits emergency operation;
 - (vi) exits with tail cones emergency operation;
 - (vii) cockpit exits emergency operation;
 - (viii) ground evacuation and ditching equipment;
 - (ix) first-aid equipment;
 - (x) portable oxygen systems (oxygen bottles, chemical oxygen generators, protective breathing equipment or PBE);
 - (xi) fire-fighting equipment;
 - (xii) emergency lighting systems; and
 - (xiii) additional emergency equipment;
- (b) emergency procedures—
 - (i) general types of emergencies specific to aircraft;
 - (ii) emergency communication signals and procedures;
 - (iii) rapid decompression;
 - (iv) insidious decompression and cracked window and pressure seal leaks;
 - (v) fires;
 - (vi) ditching;
 - (vii) ground evacuation;
 - (viii) unwarranted evacuation, for example that is passenger initiated;
 - (ix) illness or injury;
 - (x) abnormal situations involving passengers or crew members;
 - (xi) turbulence; and
 - (xii) other unusual situations.
- (c) emergency drills—
 - (i) location and use of all emergency and safety equipment carried on the aircraft;
 - (ii) the location and use of all types of exits;
 - (iii) actual donning of a lifejacket where fitted;
 - (iv) actual donning of protective breathing equipment; and

- (v) actual handling of fire extinguishers;
- (d) crew resource management—
 - (i) decision making skills;
 - (ii) briefings and developing open communication;
 - (iii) inquiry, advocacy, and assertion training; and
 - (iv) workload management.
- (e) dangerous goods—
 - (i) recognition of and transportation of dangerous goods;
 - (ii) proper packaging, marking, and documentation; and
 - (iii) instructions regarding compatibility, loading, storage and handling characteristics.
- (f) security—
 - (i) unlawful interference; and
 - (ii) disruptive passengers.

(5) An operator shall establish and maintain a cabin crew training programme that is designed to ensure that persons who receive training acquire the competency to perform their assigned duties and includes or makes reference to a syllabus for the training programme in the company operations manual. The training programme should include Human Factors training.

Arming of automatic emergency exits.

193. No person shall cause an aircraft carrying passengers to be moved on the surface, take-off or land unless each automatically deployable emergency evacuation assisting means installed on the aircraft is ready for evacuation.

Accessibility of emergency exits and equipment

194. No person shall allow carry-on baggage or other items to block access to the emergency exits when the aircraft is moving on the surface, during take-off or landing, or while passengers remain on board.

Stops where passengers remain on board

195 (1) A pilot in command shall ensure that where passengers remain on board the aircraft—

- (a) all engines are shut down;
- (b) at least one floor level exit remains open to provide for the evacuation of passengers where necessary; and
- (c) there is at least one person who is qualified in the emergency evacuation of the aircraft and who has been identified to the passengers on board as responsible for the passenger safety is immediately available.

(2) When refuelling with passengers on board, the pilot in command or a designated AOC holder's representative shall ensure that the AOC holder's operations manual procedures are followed.

Assignment of emergency duties

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

Cabin crew at emergency evacuation stations

197 Each cabin crew member assigned to emergency evacuation duties shall occupy a seat provided in accordance with section 96 during take-off and landing and whenever the pilot-in-command so directs.

Protection of cabin crew during flight

198. Each cabin crew member shall be seated with a seat belt or, when provided, safety harness fastened during take-off and landing and whenever the pilot-in-command so directs.

Training

199 (1) The 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) All Cabin crew members shall complete a recurrent training programme annually and
- (3) The training programmes specified in subsection (1) shall ensure that each person is—
 - (a) competent to execute those safety duties and functions which the cabin crew member is assigned to perform in the event of an emergency or in a situation requiring emergency evacuation;
 - (b) 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;
 - (c) when serving on aeroplanes operated above 3 000 m (10 000 ft), knowledgeable as regards the effect of lack of oxygen and, in the case of pressurized aeroplanes, as regards physiological phenomena accompanying a loss of pressurisation;
 - (d) 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;
 - (e) aware of the types of dangerous goods which may, and may not, be carried in a passenger cabin; and
 - (f) knowledgeable about human performance as related to passenger cabin safety duties including flight crew-cabin crew coordination.

SUB PART XII SECURITY

Security of the flight crew compartment

200 (1) An operator shall ensure that every aeroplane equipped with a flight crew compartment door is capable of being locked and means shall be provided by which cabin crew can discreetly notify the flight crew in the event of suspicious activity or security breaches in the cabin..

(2) The operator shall ensure that in all passenger-carrying aeroplanes of a maximum certificated take-off mass in excess of 54 500 kg or a maximum certificated take-off mass in excess of 45 500 kg with a passenger seating capacity greater than 19 or with a passenger seating capacity greater than 60 shall be equipped with an approved flight crew compartment door that is —

- (a) designed to resist penetration by small arms fire and grenade shrapnel; and
- (b) designed to resist forcible intrusions by unauthorised persons; and
- (c) capable of being locked and unlocked from either pilot's station.

(3) The operator shall ensure that in all aeroplanes which are equipped with a flight crew compartment door in accordance with subsection (2)—

- (a) the door shall be closed and locked from the time all external doors are closed following embarkation until any such door is opened for disembarkation, except when necessary to permit access and egress by authorised persons; and
- (b) means shall be provided for monitoring from either pilot's station the entire door area outside the flight crew compartment to identify persons requesting entry and to detect suspicious behaviour or potential threat.

Aeroplane search procedure checklist

201 (1) Every 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 and for inspecting aeroplanes for concealed weapons, explosives or other dangerous devices when a well-founded suspicion exists that the aeroplane may be the object of an act of unlawful interference.

(2) The checklist referred to in subsection (1) shall be supported by guidance on the appropriate course of action to be taken should a bomb or suspicious object be found and information on the least-risk bomb location specific to the aeroplane.

(3) Specialised means of attenuating and directing the blast shall be provided for use at the least-risk bomb location.

Training programmes

202 (1) Every operator shall establish and maintain—

- (a) an approved security training programme which ensures crew members act in the most appropriate manner to minimise the consequences of acts of unlawful interference;
 - (b) 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 an aeroplane so that they contribute to the prevention of acts of sabotage or other forms of unlawful interference.
- (2) As a minimum, approved security training programme shall include the following elements—
- (a) determination of the seriousness of any occurrence;
 - (b) security of the flight crew compartment
 - (c) crew communication and coordination;
 - (d) appropriate self-defence responses;
 - (e) use of non-lethal protective devices assigned to crew members whose use is authorised by the Authority;
 - (f) understanding of behaviour of terrorists so as to facilitate the ability of crew members to cope with hijacker behaviour and passenger responses;
 - (g) live situational training exercises regarding various threat conditions;
 - (h) aeroplane search procedures and guidance on least-risk bomb locations where practicable;
 - (i) post flight concerns for the crew.

Reporting acts of unlawful interference

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

Stowage of weapons removed from passengers

204. Where the operator accepts the carriage of weapons removed from passengers, the aeroplane shall have provision for stowing such weapons in a place so that they are inaccessible to any person during flight time.

SUB PART XIII
DANGEROUS GOODS

Operators with no specific approval for the transport of dangerous goods as cargo

205 (1) An operator with no specific approval to transport dangerous goods shall —

- (a) establish a dangerous goods training programme that meets—
 - (i) the requirements of Civil Aviation (Dangerous Goods) Regulations, Statutory Instrument 51 of 2018;
 - (ii) the applicable requirements of the Technical Instructions, as appropriate and details of the dangerous goods training programme, shall be included in the operator's operations manuals;
 - (iii) establish dangerous goods policies and procedures in its operations manual to meet, at a minimum, the requirements of Civil Aviation (Dangerous Goods) Regulations, statutory instrument 51 of 2018 and the Technical Instructions to allow operator personnel to—
 - A. identify and reject undeclared dangerous goods, including COMAT classified as dangerous goods; and
 - B. report to the appropriate authorities of the State of the operator and the State in which it occurred any—
 - I. occasions when undeclared dangerous goods are discovered in cargo or mail; and
 - II. dangerous goods accidents and incidents.
- (b) report to the appropriate authorities of the State of the Operator and the State of Origin any occasions when dangerous goods are discovered to have been carried—
 - (i) when not loaded, segregated, separated or secured in accordance with the Technical Instructions; and
 - (ii) without information having been provided to the pilot-in-command;

- (c) accept, handle, store, transport, load and unload dangerous goods, including COMAT classified as dangerous goods as cargo on board an aircraft; and
- (d) provide the pilot-in-command with accurate and legible written or printed information concerning dangerous goods that are to be carried as cargo.

Operators with a specific approval for the transport of dangerous goods as cargo

206. The Authority shall issue a specific approval for the transport of dangerous goods and ensure that the Operator—
- (a) establishes a dangerous goods training programme that meets the requirements in the Technical Instructions, and the requirements of Civil Aviation (Dangerous Goods) Regulations, statutory instrument 51 of 2018 as appropriate;
 - (b) details of the dangerous goods training programme shall be included in the operator's operations manuals;
 - (c) establishes dangerous goods policies and procedures in its operations manual to meet, at a minimum, the requirements of Civil Aviation (Dangerous Goods) Regulations, statutory instrument 51 of 2018 and the Technical Instructions to enable operator personnel to—
 - (i) identify and reject undeclared or misdeclared dangerous goods, including COMAT classified as dangerous goods;
 - (ii) report to the appropriate authorities of the state of the operator and the State in which it occurred any—
 - A. occasions when undeclared or misdeclared dangerous goods are discovered in cargo or mail; and
 - B. dangerous goods accidents and incidents;
 - (d) report to the appropriate authorities of the state operator and the State of Origin any occasions when dangerous goods are discovered to have been carried when not loaded, segregated, separated or secured in accordance with the Technical Instructions; and
 - (e) accept, handle, store, transport, load and unload dangerous goods, including COMAT classified as dangerous goods as cargo on board an aircraft; and
 - (f) provide the pilot-in-command with accurate and legible written or printed information concerning dangerous goods that are to be carried as cargo.

Provision of information

207 (1) The 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.

(2) The provisions relating to Dangerous Goods set forth in this Part shall also apply to domestic commercial air transport operations.

SUB PART XIV
CARGO COMPARTMENT SAFETY

Transport of items in the cargo compartment

208 (1) An Operator shall establish a policy and procedures for the transport of items in the cargo compartment, which include the conduct of a specific safety risk assessment.

(2) The risk assessment specified in subsection (1) shall include at least the—

- (a) hazards associated with the properties of the items to be transported;
- (b) capabilities of the operator;
- (c) operational considerations including area of operations, diversion time;
- (d) capabilities of the aeroplane and its systems including cargo compartment fire suppression capabilities;
- (e) containment characteristics of unit load devices;
- (f) packing and packaging;
- (g) safety of the supply chain for items to be transported; and
- (h) quantity and distribution of dangerous goods items to be transported.

(3) The operator shall comply with the requirements for the transport of dangerous goods as specified in Civil Aviation (Dangerous Goods) Regulations, statutory instrument 51 of 2018.

Fire protection

209 (1) The elements of the cargo compartment fire protection system as approved by the State of design or State of registry, and a summary of the demonstrated cargo compartment fire protection certification standards, shall be provided in the aeroplane flight manual or other documentation supporting the operation of the aeroplane.

(2) The operator shall establish policy and procedures that address the items to be transported in the cargo compartment.

(3) The policy and procedures specified in subsection (2) shall ensure to a reasonable certainty that in the event of a fire involving those items in the cargo compartment, it can be detected and sufficiently suppressed or contained by the elements of the aeroplane design associated with cargo compartment fire protection, until the aeroplane makes a safe landing.

Repeal

210. The Civil Aviation (Aircraft Operations) Regulations, published in Statutory Instrument 121 of 2018 are hereby repealed.

**FIRST SCHEDULE (section 90)
LIGHTS TO BE DISPLAYED BY AEROPLANES**

1. TERMINOLOGY

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

Angles of coverage.

- a) Angle of coverage A is formed by two intersecting vertical planes making angles of 70 degrees to the right and 70 degrees to the left respectively, looking aft along the longitudinal axis to a vertical plane passing through the longitudinal axis.
- b) Angle of coverage F is formed by two intersecting vertical planes making angles of 110 degrees to the right and 110 degrees to the left respectively, looking forward along the longitudinal axis to a vertical plane passing through the longitudinal axis.
- c) Angle of coverage L is formed by two intersecting vertical planes, one parallel to the longitudinal axis of the aeroplane, and the other 110 degrees to the left of the first, when looking forward along the longitudinal axis.
- d) Angle of coverage R is formed by two intersecting vertical planes, one parallel to the longitudinal axis of the aeroplane, and the other 110 degrees to the right of the first, when looking forward along the longitudinal axis.

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

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

Making way. An aeroplane on the surface of the water is “making way” when it is under way and has a velocity relative to the water.

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

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

Vertical planes. Planes perpendicular to the horizontal plane.

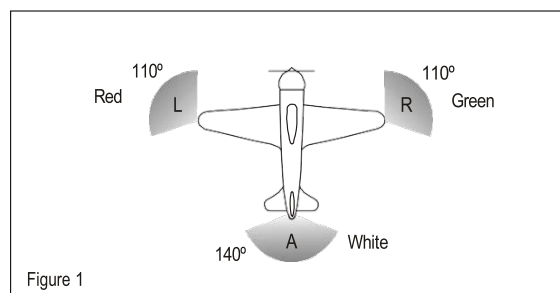
Visible. Visible on a dark night with a clear atmosphere.

1. NAVIGATION LIGHTS TO BE DISPLAYED IN THE AIR

Note.— The lights specified herein are intended to meet the requirements of Civil Aviation (Rules of the Air) Regulations for navigation lights.

As illustrated in Figure 1, the following unobstructed navigation lights shall be displayed:

- a) a red light projected above and below the horizontal plane through angle of coverage L;
- b) a green light projected above and below the horizontal plane through angle of coverage R;
- c) a white light projected above and below the horizontal plane rearward through angle of coverage A.



2. LIGHTS TO BE DISPLAYED ON THE WATER

2.1 General

Note.— The lights specified herein are intended to meet the requirements of Civil Aviation (Rules of the Air) Regulations for lights to be displayed by aeroplanes on the water.

The International Regulations for Preventing Collisions at Sea require different lights to be displayed in each of the following circumstances:

- a) when under way;
- b) when towing another vessel or aeroplane;
- c) when being towed;
- d) when not under command and not making way;
- e) when making way but not under command;
- f) when at anchor;
- g) when aground.

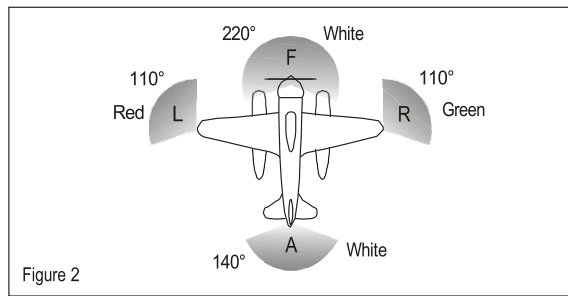
The lights required by aeroplanes in each case are described below.

2.2 When under way

As illustrated in Figure 2, the following appearing as steady unobstructed lights:

- a) a red light projected above and below the horizontal through angle of coverage L;
- b) a green light projected above and below the horizontal through angle of coverage R;
- c) a white light projected above and below the horizontal through angle of coverage A; and
- d) a white light projected through angle of coverage F.

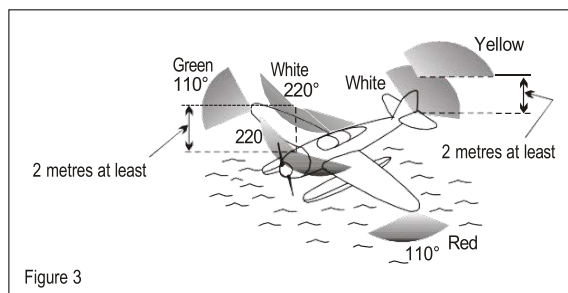
The lights described in 3.2 a), b) and c) should be visible at a distance of at least 3.7 km (2 NM). The light described in 3.2 d) should be visible at a distance of 9.3 km (5 NM) when fitted to an aeroplane of 20 m or more in length or visible at a distance of 5.6 km (3 NM) when fitted to an aeroplane of less than 20 m in length.



3.3 When towing another vessel or aeroplane

As illustrated in Figure 3, the following appearing as steady, unobstructed lights:

- a) the lights described in 3.2;
- b) a second light having the same characteristics as the light described in 3.2 d) and mounted in a vertical line at least 2 m above or below it; and
- c) a yellow light having otherwise the same characteristics as the light described in 3.2 c) and mounted in a vertical line at least 2 m above it.



3.4 When being towed

The lights described in 3.2 a), b) and c) appearing as steady, unobstructed lights.

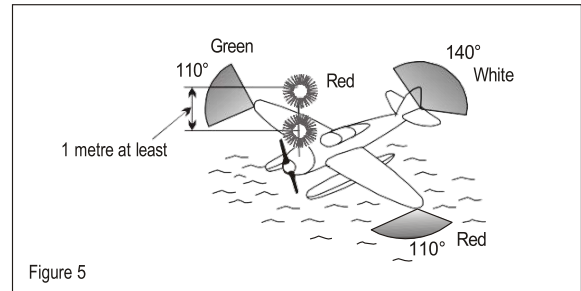
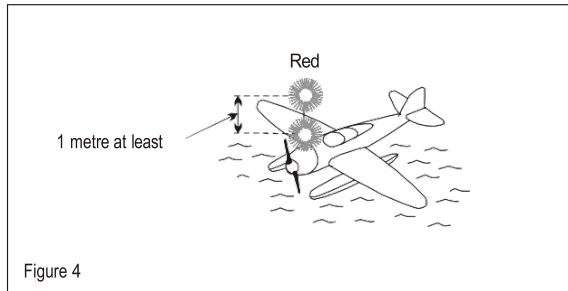
3.5 When not under command and not making way

As illustrated in Figure 4, two steady red lights placed where they can best be seen, one vertically over the other and not less than 1 m apart, and of such a character as to be visible all around the horizon at a distance of at least 3.7 km (2 NM).

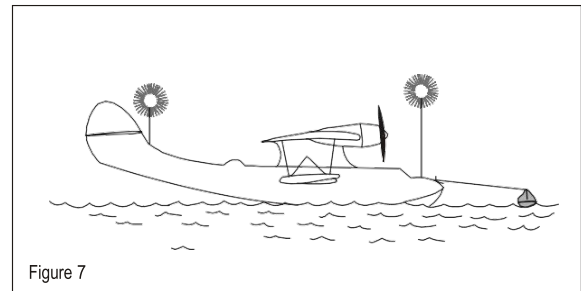
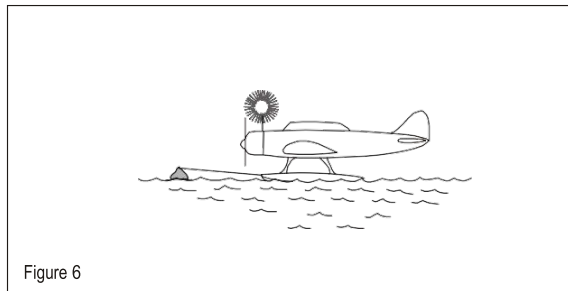
3.6 When making way but not under command

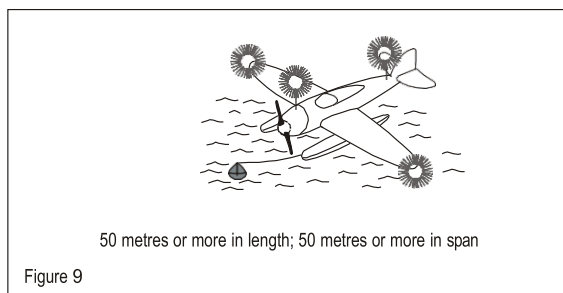
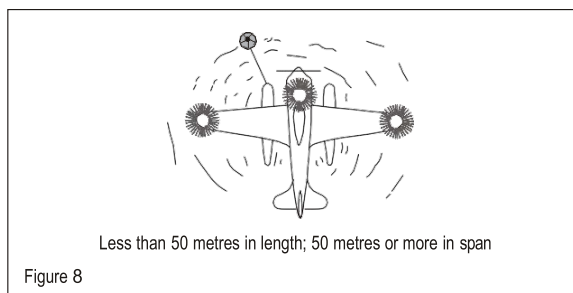
As illustrated in Figure 5, the lights described in 3.5 plus the lights described in 3.2 a), b) and c).

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

**3.7 When at anchor**

- If less than 50 m in length, where it can best be seen, a steady white light (Figure 6), visible all around the horizon at a distance of at least 3.7 km (2 NM).
- If 50 m or more in length, where they can best be seen, a steady white forward light and a steady white rear light (Figure 7) both visible all around the horizon at a distance of at least 5.6 km (3 NM).
- If 50 m or more in span a steady white light on each side (Figures 8 and 9) to indicate the maximum span and visible, so far as practicable, all around the horizon at a distance of at least 1.9 km (1 NM).





3.8 When aground

The lights prescribed in 3.7 and in addition two steady red lights in vertical line, at least 1 m apart so placed as to be visible all around the horizon.

SECOND SCHEDULE (sections 11 and 179)

ORGANISATION AND CONTENTS OF AN OPERATIONS MANUAL

1. ORGANISATION

An operations manual, which may be issued in separate parts corresponding to specific aspects of operations, provided in accordance with section 11, shall be organized with the following structure:

- a) General;
- b) Aircraft operating information;
- c) Areas, routes and aerodromes; and
- d) Training.

2. CONTENTS

The operations manual referred to in 1 shall contain at the least the following:

2.1 General

- 2.1.1 Instructions outlining the responsibilities of operations personnel pertaining to the conduct of flight operations.
- 2.1.2 Information and policy relating to fatigue management including:
 - a) policies pertaining to flight time, flight duty period, duty period limitations and rest requirements for flight and cabin crew members in accordance with Section 51(3); and
 - b) where applicable, policy and documentation pertaining to the operator's FRMS in accordance with Part II (Air Operator Certificate) Section 62.
- 2.1.3 A list of the navigational equipment to be carried including any requirements relating to operations where performance-based navigation is prescribed.
- 2.1.4 Where relevant to the operations, the long-range navigation procedures, engine failure procedure for EDTO and the nomination and utilization of diversion aerodromes.
- 2.1.5 The circumstances in which a radio listening watch is to be maintained.
- 2.1.6 The method for determining minimum flight altitudes.
- 2.1.7 The methods for determining aerodrome operating minima.
- 2.1.8 Safety precautions during refuelling with passengers on board.
- 2.1.9 Ground handling arrangements and procedures.
- 2.1.10 Procedures, as prescribed in Civil Aviation (Search and Rescue) Regulations), for pilots-in-command observing an accident.
- 2.1.11 The flight crew for each type of operation including the designation of the succession of command.
- 2.1.12 Specific instructions for the computation of the quantities of fuel and oil to be carried, taking into account all circumstances of the operation including the possibility of loss of pressurization and the failure of one or more engines while en route.

2.1.13 The conditions under which oxygen shall be used and the amount of oxygen determined in accordance with Section 33(2).

2.1.14 Instructions for mass and balance control.

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

2.1.16 The specifications for the operational flight plan.

2.1.17 Standard operating procedures (SOPs) for each phase of flight.

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

2.1.19 Departure contingency procedures.

2.1.20 Instructions on the maintenance of altitude awareness and the use of automated or flight crew altitude call-out.

2.1.21 Instructions on the use of autopilots and auto-throttles in IMC

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

2.1.23 Departure and approach briefings.

2.1.24 Procedures for familiarization with areas, routes and aerodromes.

2.1.25 Stabilized approach procedure.

2.1.26 Limitation on high rates of descent near the surface.

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

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

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

2.1.30 Instructions and training requirements for the avoidance of controlled flight into terrain and policy for the use of the ground proximity warning system (GPWS).

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

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

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

a) procedures, as prescribed in Civil Aviation (Rules of the Air) Regulations, for pilots-in-command of intercepted aircraft; and

b) visual signals for use by intercepting and intercepted aircraft, as contained in Civil Aviation (Rules of the Air) Regulations.

2.1.33 For aeroplanes intended to be operated above 15 000 m (49 000 ft):

a) information which will enable the pilot to determine the best course of action to take in the event of exposure to solar cosmic radiation; and

b) procedures in the event that a decision to descend is taken, covering:

1) the necessity of giving the appropriate ATS unit prior warning of the situation and of obtaining a provisional descent clearance; and

2) the action to be taken in the event that communication with the ATS unit cannot be established or is interrupted.

Note.— Guidance material on the information to be provided is contained in Circular 126 — Guidance Material on SST Aircraft Operations.

2.1.34 Details of the safety management system (SMS) provided in accordance with Part IX of these Regulations.

2.1.35 Information and instructions on the carriage of dangerous goods, in accordance with Civil Aviation(Dangerous Goods) Regulations.

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

2.1.36 Security instructions and guidance.

2.1.37 The search procedure checklist provided in accordance with Section 201.

2.1.38 Instructions and training requirements for the use of head-up displays (HUD) and enhanced vision systems (EVS) equipment as applicable.

2.1.39 Instructions and training requirements for the use of the EFB, as applicable.

2.2 Aircraft operating information

- 2.2.1 Certification limitations and operating limitations.
- 2.2.2 The normal, abnormal, and emergency procedures to be used by the flight crew and the checklists relating thereto as required by Section 57(5).
- 2.2.3 Operating instructions and information on climb performance with all engines operating, if provided in accordance with Section 12(3).
- 2.2.4 Flight planning data for pre-flight and in-flight planning with different thrust/power and speed settings.
- 2.2.5 The maximum crosswind and tailwind components for each aeroplane type operated and the reductions to be applied to these values having regard to gusts, low visibility, runway surface conditions, crew experience, use of autopilot, abnormal or emergency circumstances, or any other relevant operational factors.
- 2.2.6 Instructions and data for mass and balance calculations.
- 2.2.7 Instructions for aircraft loading and securing of load.
- 2.2.8 Aircraft systems, associated controls and instructions for their use, as required by Section 57(5).
- 2.2.9 The minimum equipment list and configuration deviation list for the aeroplane types operated and specific operations authorized, including any requirements relating to operations where performance-based navigation is prescribed.
- 2.2.10 Checklist of emergency and safety equipment and instructions for its use.
- 2.2.11 Emergency evacuation procedures, including type-specific procedures, crew coordination, assignment of crew's emergency positions and the emergency duties assigned to each crew member.
- 2.2.12 The normal, abnormal and emergency procedures to be used by the cabin crew, the checklists relating thereto and aircraft systems information as required, including a statement related to the necessary procedures for the coordination between flight and cabin crew.
- 2.2.13 Survival and emergency equipment for different routes and the necessary procedures to verify its normal functioning before take-off, including procedures to determine the required amount of oxygen and the quantity available.
- 2.2.14 The ground-air visual signal code for use by survivors, as contained in Civil Aviation (Search and Rescue) Regulations.

2.3 Routes and aerodromes

- 2.3.1 A route guide to ensure that the flight crew will have, for each flight, information relating to communication facilities, navigation aids, aerodromes, instrument approaches, instrument arrivals and instrument departures as applicable for the operation, and such other information as the operator may deem necessary for the proper conduct of flight operations.
- 2.3.2 The minimum flight altitudes for each route to be flown.
- 2.3.3 Aerodrome operating minima for each of the aerodromes that are likely to be used as aerodromes of intended landing or as alternate aerodromes.
- 2.3.4 The increase of aerodrome operating minima in case of degradation of approach or aerodrome facilities.
- 2.3.5 Instructions for determining aerodrome operating minima for instrument approaches using HUD and EVS.
- 2.3.6 The necessary information for compliance with all flight profiles required by regulations, including but not limited to, the determination of:
 - a) take-off runway length requirements for dry, wet and contaminated conditions, including those dictated by system failures which affect the take-off distance;
 - b) take-off climb limitations;
 - c) en-route climb limitations;
 - d) approach climb limitations and landing climb limitations;
 - e) landing runway length requirements for dry, wet and contaminated conditions, including systems failures which affect the landing distance; and
 - f) supplementary information, such as tire speed limitations.

2.4 Training

- 2.4.1 Details of the flight crew training programme, as required by Section 127.
- 2.4.2 Details of the cabin crew duties training programme as required by Section 199.
- 2.4.3 Details of the flight dispatcher training programme when employed in conjunction with a method of flight supervision in accordance with Section 9(1).

THIRD SCHEDULE (section 5(3))

**ADDITIONAL REQUIREMENTS FOR APPROVED OPERATIONS BY SINGLE-ENGINE
TURBINE-POWERED AEROPLANES AT NIGHT AND/OR IN INSTRUMENT
METEOROLOGICAL CONDITIONS (IMC)**

1. TURBINE ENGINE RELIABILITY

1.1 Turbine engine reliability shall be shown to have a power loss rate of less than 1 per 100 000 engine hours.

Note.— Power loss in this context is defined as any loss of power, the cause of which may be traced to faulty engine or engine component design or installation, including design or installation of the fuel ancillary or engine control systems. (See Attachment G.)

1.2 The operator shall be responsible for engine trend monitoring.

1.3 To minimize the probability of in-flight engine failure, the engine shall be equipped with:

- a) an ignition system that activates automatically, or is capable of being operated manually, for take-off and landing, and during flight, in visible moisture;
- b) 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
- c) an emergency engine power control device that permits 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.

2. SYSTEMS AND EQUIPMENT

Single-engine turbine-powered aeroplanes approved to operate at night and/or in IMC shall be equipped with the following systems and equipment intended to ensure continued safe flight and to assist in achieving a safe forced landing after an engine failure, under all allowable operating conditions:

- a) 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 at night and/or in IMC;
- b) a radio altimeter;
- c) an emergency electrical supply system of sufficient capacity and endurance, following loss of all generated power, to as a minimum:
 - 1) maintain the operation of all essential flight instruments, communication and navigation systems during a descent from the maximum certificated altitude in a glide configuration to the completion of a landing;
 - 2) lower the flaps and landing gear, if applicable;
 - 3) provide power to one pitot heater, which must serve an air speed indicator clearly visible to the pilot;
 - 4) provide for operation of the landing light specified in 2 j);
 - 5) provide for one engine restart, if applicable; and
 - 6) provide for the operation of the radio altimeter;
- d) two attitude indicators, powered from independent sources;
- e) a means to provide for at least one attempt at engine re-start;
- f) airborne weather radar;
- g) a certified area navigation system capable of being programmed with the positions of aerodromes and safe forced landing areas, and providing instantly available track and distance information to those locations;
- h) for passenger operations, passenger seats and mounts which meet dynamically-tested performance standards and which are fitted with a shoulder harness or a safety belt with a diagonal shoulder strap for each passenger seat;
- i) in pressurized aeroplanes, sufficient supplemental oxygen for all occupants for descent following engine failure at the maximum glide performance from the maximum certificated altitude to an altitude at which supplemental oxygen is no longer required;
- j) a landing light that is independent of the landing gear and is capable of adequately illuminating the touchdown area in a night forced landing; and
- k) an engine fire warning system.

3. MINIMUM EQUIPMENT LIST

The State of the Operator shall require the minimum equipment list of the operator approved in accordance with section 57(4) 5.4 to specify the operating equipment required for night and/or IMC operations, and for day/VMC operations.

4. FLIGHT MANUAL INFORMATION

The flight manual shall include limitations, procedures, approval status and other information relevant to operations by single-engine turbine-powered aeroplanes at night and/or in IMC.

5. EVENT REPORTING

5.1 The operator approved for operations by single-engine turbine-powered aeroplanes at night and/or in IMC shall report all significant failures, malfunctions or defects to the State of the Operator who in turn will notify the State of Design.

5.2 The State of the Operator shall review the safety data and monitor the reliability information so as to be able to take any actions necessary to ensure that the intended safety level is achieved. The Authority shall notify major events or trends of particular concern to the appropriate Type Certificate Holder and the State of Design.

OPERATOR PLANNING

5.3 Operator route planning shall take account of all relevant information in the assessment of intended routes or areas of operations, including the following:

- a) 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;
- b) weather information, including seasonal and other adverse meteorological influences that may affect the flight; and
- c) other criteria and limitations as specified by the State of the Operator.

5.4 The operator shall identify aerodromes or safe forced landing areas available for use in the event of engine failure, and the position of these shall be programmed into the area navigation system.

6. FLIGHT CREW EXPERIENCE, TRAINING AND CHECKING

6.1 The Authority shall prescribe the minimum flight crew experience required for night/IMC operations by single-engine turbine-powered aeroplanes.

6.2 The operator's flight crew training and checking shall be appropriate to night and/or IMC operations by single-engine turbine-powered aeroplanes, covering normal, abnormal and emergency procedures and, in particular, engine failure, including descent to a forced landing in night and/or in IMC conditions.

7. ROUTE LIMITATIONS OVER WATER

The Authority shall apply route limitation criteria for single-engine turbine-powered aeroplanes operating at night and/or in IMC on over water operations if beyond gliding distance from an area suitable for a safe forced landing/ditching having regard to the characteristics of the aeroplane, seasonal weather influences, including likely sea state and temperature, and the availability of search and rescue services.

8. OPERATOR CERTIFICATION OR VALIDATION

The operator shall demonstrate the ability to conduct operations by single-engine turbine-powered aeroplanes at night and/or in IMC through a certification and approval process specified by the Authority.

FOURTH SCHEDULE

ALTIMETRY SYSTEM PERFORMANCE REQUIREMENTS FOR OPERATIONS IN RVSM AIRSPACE

1. In respect of groups of aeroplanes that are nominally of identical design and build with respect to all details that could influence the accuracy of height-keeping performance, the height-keeping performance capability shall be such that the total vertical error (TVE) for the group of aeroplanes shall have a mean no greater than 25 m (80 ft) in magnitude and shall have a standard deviation no greater than $28 - 0.013z^2$ for $0 \leq z \leq 25$ when z is the magnitude of the mean TVE in metres, or $92 - 0.004z^2$ for $0 \leq z \leq 80$ where z is in feet. In addition, the components of TVE shall have the following characteristics:

- a) the mean altimetry system error (ASE) of the group shall not exceed 25 m (80 ft) in magnitude;
- b) the sum of the absolute value of the mean ASE and of three standard deviations of ASE shall not exceed 75 m (245 ft); and
- c) the differences between cleared flight level and the indicated pressure altitude actually flown shall be symmetric about a mean of 0 m, with a standard deviation no greater than 13.3 m (43.7 ft), and in addition, the decrease in the frequency of differences with increasing difference magnitude shall be at least exponential.

2. In respect of aeroplanes for which the characteristics of the airframe and altimetry system fit are unique and so cannot be classified as belonging to a group of aeroplanes encompassed by paragraph 1, the height-keeping performance capability shall be such that the components of the TVE of the aeroplane have the following characteristics:

- a) the ASE of the aeroplane shall not exceed 60 m (200 ft) in magnitude under all flight conditions; and
- b) the differences between the cleared flight level and the indicated pressure altitude actually flown shall be symmetric about a mean of 0 m, with a standard deviation no greater than 13.3 m (43.7 ft), and in addition, the decrease in the frequency of differences with increasing difference magnitude shall be at least exponential.

**FIFTH SCHEDULE
SAFETY OVERSIGHT OF AIR OPERATORS
1. PRIMARY AVIATION LEGISLATION**

The Authority 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.

Note 1.— The term authority as used in this Appendix refers to the Civil Aviation Authority as well as equivalent organisations, including inspectors and staff.

Note 2.— Guidance on the inspection, certification and continued surveillance of operations is contained in the Manual of Procedures for Operations Inspection, Certification and Continued Surveillance (Doc 8335) and the Airworthiness Manual (Doc 9760).

2. SPECIFIC OPERATING REGULATIONS

The Authority 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.

3. STATE SAFETY OVERSIGHT SYSTEM AND FUNCTIONS

3.1 The Authority shall ensure that the authority is responsible for the safety oversight of air operators.

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

3.3 Recommendation.— The methodology in 3.2 should be documented.

3.4 The Authority shall ensure that authority inspectors have adequate support, credentials and transportation to accomplish, independently, their certification and continued surveillance tasks.

4. QUALIFIED TECHNICAL PERSONNEL

The Authority 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).

5. TECHNICAL GUIDANCE, TOOLS AND PROVISION OF SAFETY-CRITICAL INFORMATION

5.1 The Authority 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.

5.2 The Authority 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.

5.3 The Authority shall ensure that authority inspectors are provided with technical guidance manuals that address ethics, personal conduct and the avoidance of actual or perceived conflicts of interest in the performance of official duties.

6. CERTIFICATION OBLIGATIONS

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

Note.— Attachment D contains further information in this regard.

7. CONTINUED SURVEILLANCE OBLIGATIONS

The Authority 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.

8. RESOLUTION OF SAFETY ISSUES

Note.— Provisions for the resolution of safety issues are contained in Civil Aviation (SMS) Regulations..

SIXTH SCHEDULE (section 9)

The Air Operator Certificate shall be as specified in Part II Third Schedule

SEVENTH SCHEDULE (section 9)

AIR OPERATOR CERTIFICATE OPERATIONS SPECIFICATIONS (AOC)

1. OPERATIONS SPECIFICATIONS FOR EACH AIRCRAFT MODEL

1.1 For each aircraft model in the operator’s fleet, identified by aircraft 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.

1.2 The operations specifications layout referred to in section 9(8) of this Part, shall be as follows:

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

OPERATIONS SPECIFICATIONS				
(Subject to the approved conditions in the operations manual)				
ISSUING AUTHORITY CONTACT DETAILS¹				
Telephone: _____		Fax: _____		Email: _____
AOC# ² : _____		Operator name ³ : _____		Date ⁴ : _____ Signature: _____
Dba trading name ³ : _____				
Aircraft model ⁵ :				
Types of operation: Commercial air transportation <input type="checkbox"/> Passengers <input type="checkbox"/> Cargo <input type="checkbox"/> Other ⁶ : _____				
Area(s) of operation ⁷ :				
Special limitations ⁸ :				
SPECIFIC APPROVAL	YES	NO	DESCRIPTION ⁹	REMARKS
Dangerous goods	<input type="checkbox"/>	<input type="checkbox"/>		
Low visibility operations Approach and landing Take-of Operational credit(s)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	CAT ¹⁰ : ____ RVR: ____ m DH: ____ ft RVR ¹¹ : ____ m 12	

RVSM ¹³ <input type="checkbox"/> N/A	<input type="checkbox"/>	<input type="checkbox"/>		
EDTO ¹⁴ <input type="checkbox"/> N/A	<input type="checkbox"/>	<input type="checkbox"/>	Threshold time ¹⁵ : __ minutes Maximum diversion time ¹⁵ : _ minutes	
AR navigation specifications for PBN operations	<input type="checkbox"/>	<input type="checkbox"/>	16	
Continuing airworthiness	<input type="checkbox"/>	<input type="checkbox"/>	17	
EFB	<input type="checkbox"/>	<input type="checkbox"/>	18	
Other ¹⁹	<input type="checkbox"/>	<input type="checkbox"/>		

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 aircraft make, model and series, or master series, if a series has been designated (e.g. Boeing-737-3K2 or Boeing-777-232). The CAST/ICAO taxonomy is available at: <http://www.intlaviationstandards.org/>.
6. Other type of transportation to be specified (e.g. emergency medical service).
7. List the geographical area(s) of authorized operation (by geographical coordinates or specific routes, flight information region or national or regional boundaries) 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 precision approach category (CAT II or III). 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. "Not applicable (N/A)" box may be checked only if the aircraft maximum ceiling is below FL 290.
14. If extended diversion time operations (EDTO) specific approval does not apply based on the provisions in Chapter 4, 4.7, select "N/A". Otherwise a threshold time and maximum diversion time must be specified.
15. The threshold time and maximum diversion time may also be listed in distance (NM). Details of each particular aeroplane-engine combination for which the threshold time is established and maximum diversion time has been granted may be listed under "remarks". One line per approval may be used if different approvals are granted.
16. 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 "Description" column.
17. Insert the name of the person/organisation responsible for ensuring that the continuing airworthiness of the aircraft 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).
18. List the EFB functions used for the safe operation of aeroplanes and any applicable limitations.
19. Other authorizations or data can be entered here, using one line (or one multi-line block) per authorization (e.g. special approach authorization, approved navigation performance).

**EIGHTH SCHEDULE (sections 61,62,69)
FLIGHT RECORDERS**

Note: The material in this Appendix concerns flight recorders intended for installation in aeroplanes 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 lightweight flight recorder, it is permissible to record it on either the CARS or the ADRS.

1 GENERAL REQUIREMENTS

- 1.1 Non-deployable flight recorder containers shall be painted a distinctive orange colour.
- 1.2 Non-deployable crash-protected flight recorder containers shall:
 - a) carry reflective material to facilitate their location; and
 - b) 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.
- 1.3 Automatic deployable flight recorder containers shall:
 - a) be painted a distinctive orange colour, however the surface visible from outside the helicopter may be of another colour;
 - b) carry reflective material to facilitate their location; and
 - c) have an integrated automatically activated ELT.
- 1.4 The flight recorder systems shall be installed so that:
 - a) the probability of damage to the recordings is minimized;
 - b) there is an aural or visual means for pre-flight checking that the flight recorder systems are operating properly;
 - c) 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
 - d) 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.

1.5 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.

1.6 The lightweight flight recorders shall be connected to a power source having the characteristics which ensure proper and reliable recording in the operational environment.

1.7 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.

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

1.9 The manufacturer usually provides the appropriate certificating authority with the following information in respect of the flight recorder systems:

- a) manufacturer's operating instructions, equipment limitations and installation procedures;
- b) parameter origin or source and equations which relate counts to units of measurement; and
- c) manufacturer's test reports.

2.1 Start and stop logic

- 1.1 Non-deployable flight recorder containers shall be painted a distinctive orange colour.
- 1.2 Non-deployable crash-protected flight recorder containers shall:
- a) carry reflective material to facilitate their location; and
 - b) have securely attached an automatically activated underwater locating device operating at a frequency of 37.5 kHz. At the earliest practicable date, but not later than 1 January 2018, this device shall operate for a minimum of 90 days.
- 1.3 Automatic deployable flight recorder containers shall:
- (a) be painted a distinctive orange colour, however the surface visible from outside the aircraft may be of another colour;
 - (b) carry reflective material to facilitate their location; and
 - (c) have an integrated automatically activated ELT.
- 1.4 The flight recorder systems shall be installed so that:
- a) the probability of damage to the recordings is minimized;
 - b) there is an aural or visual means for pre-flight checking that the flight recorder systems are operating properly; and
 - c) 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
 - d) for aeroplanes 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.*
- 1.5 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.
- 1.6 The lightweight flight recorders shall be connected to a power source having the characteristics which ensure proper and reliable recording in the operational environment.
- 1.7 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.
- 1.8 Means shall be provided for an accurate time correlation between the flight recorder systems recordings.
- 1.9 The manufacturer shall provide the appropriate certificating authority with the following information in respect of the flight recorder systems:
- a) manufacturer's operating instructions, equipment limitations and installation procedures;
 - b) parameter origin or source and equations which relate counts to units of measurement; and
 - c) manufacturer's test reports.

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

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

2.1.1.1 Parameters to be recorded

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

- 2.1.1.1.1 The parameters that satisfy the requirements for FDRs are listed in Table A8-1. The number of parameters to be recorded shall depend on aeroplane complexity. The parameters without an asterisk (*) are mandatory parameters which shall be recorded regardless of aeroplane complexity. In addition, the parameters designated by an asterisk (*) shall be recorded if an information data source for the parameter is used by aeroplane systems or the flight crew to operate the aeroplane. However, other parameters may be substituted with due regard to the aeroplane type and the characteristics of the recording equipment.
- 2.1.1.1.2 If further FDR recording capacity is available, recording of the following additional information shall be considered:
- a) operational information from electronic display systems, such as electronic flight instrument systems (EFIS), electronic centralized aircraft monitor (ECAM) and engine indication and crew alerting system (EICAS). Use the following order of priority:

- 1) parameters selected by the flight crew relating to the desired flight path, e.g. barometric pressure setting, selected altitude, selected airspeed, decision height, and autoflight system engagement and mode indications if not recorded from another source;
 - 2) display system selection/status, e.g. SECTOR, PLAN, ROSE, NAV, WXR, COMPOSITE, COPY, ETC.;
 - 3) warnings and alerts; and
 - 4) the identity of displayed pages for emergency procedures and checklists; and
- b) retardation information including brake application for use in the investigation of landing overruns and rejected take-offs.
- 2.1.1.1.3 The parameters that satisfy the requirements for flight path and speed as displayed to the pilot(s) are listed below. The parameters without an (*) are mandatory parameters which shall be recorded. In addition, the parameters designated by an (*) shall be recorded if an information source for the parameter is displayed to the pilot and is practicable to record:
- 2.1.1.1.3.1 Pressure altitude
 - 2.1.1.1.3.2 Indicated airspeed or calibrated airspeed
 - 2.1.1.1.3.3 Heading (primary flight crew reference)
 - 2.1.1.1.3.4 Pitch attitude
 - 2.1.1.1.3.5 Roll attitude
 - 2.1.1.1.3.6 Engine thrust/power
 - 2.1.1.1.3.7 Landing-gear status*
 - 2.1.1.1.3.8 Total or outside air temperature*
 - 2.1.1.1.3.9 Time*
 - 2.1.1.1.3.10 Navigation data*: drift angle, wind speed, wind direction, latitude/longitude
 - 2.1.1.1.3.11 Radio altitude*
- 2.1.1.1.4 The parameters that satisfy the requirements for ADRS are the first 7 parameters in Table A8-3.
- 2.1.1.1.5 If further ADRS recording capacity is available, the recording of any parameters from 8 onwards defined in Table A8-3 shall be considered.

2.1.1.2 Additional information

- 2.1.1.2.1 The measurement range, recording interval and accuracy of parameters on installed equipment shall be verified by methods approved by the appropriate certificating authority.
- 2.1.1.2.2 Documentation concerning parameter allocation, conversion equations, periodic calibration and other serviceability/maintenance information shall be maintained by the operator. The documentation needs to be sufficient to ensure that accident investigation authorities have the necessary information to read out the data in engineering units.

NINETH SCHEDULE (section 98) LOCATION OF AN AEROPLANE IN DISTRESS

1. PURPOSE AND SCOPE

Location of an aeroplane in distress aims at establishing, to a reasonable extent, the location of an accident site within a 6 NM radius.

2. OPERATION

2.1 An aeroplane in distress shall automatically activate the transmission of information from which its position can be determined by the operator and the position information shall contain a time stamp. It shall also be possible for this transmission to be activated manually. The system used for the autonomous transmission of position information shall be capable of transmitting that information in the event of aircraft electrical power loss, at least for the expected duration of the entire flight.

2.2 An aircraft is in a distress condition when it is in a state that, if the aircraft behaviour event is left uncorrected, can result in an accident. Autonomous transmission of position information shall be active when an aircraft is in a distress condition. This will provide a high probability of locating an accident site to within a 6 NM radius. The operator shall be alerted when an aircraft is in a distress condition with an acceptable low rate of false alerts. In case of a triggered transmission system, initial transmission of position information shall commence immediately or no later than five seconds after the detection of the activation event.

Note 1.— Aircraft behaviour events can include, but are not limited to, unusual attitudes, unusual speed conditions, collision with terrain and total loss of thrust/propulsion on all engines and ground proximity warnings.

Note 2.— A distress alert can be triggered using criteria that may vary as a result of aircraft position and phase of flight. Further guidance regarding in-flight event detection and triggering criteria may be found in the EUROCAE ED-237, Minimum Aviation

System Performance Specification (MASPS) for Criteria to Detect In-Flight Aircraft Distress Events to Trigger Transmission of Flight Information.

2.2 When an aircraft operator or an air traffic service unit (ATSU) has reason to believe that an aircraft is in distress, coordination shall be established between the ATSU and the aircraft operator.

2.4 The Authority shall identify the organisations that will require the position information of an aircraft in an emergency phase. These shall include, as a minimum:

- (a) air traffic service unit(s) (ATSU); and
- (b) SAR rescue coordination centre(s) (RCC) and sub-centres..

2.5 When autonomous transmission of position information has been activated, it shall only be able to be deactivated using the same mechanism that activated it.

2.6 The accuracy of position information shall, as a minimum, meet the position accuracy requirements established for ELTs.

TENTH SCHEDULE (section 58(3))
ARTICLE 83 bis AGREEMENT SUMMARY

ARTICLE 83 bis AGREEMENT SUMMARY		
<i>Title of the Agreement:</i>		
<i>State of Registry:</i>		<i>Focal point:</i>
<i>State of the Operator:</i>		<i>Focal point:</i>
<i>Date of signature:</i>	<i>By State of Registry¹:</i>	
	<i>By State of the Operator¹:</i>	
<i>Duration:</i>	<i>Start Date¹:</i>	<i>End Date (if applicable)²:</i>
<i>Languages of the Agreement:</i>		
<i>ICAO Registration No.:</i>		
<i>Umbrella Agreement (if any) with ICAO Registration number:</i>		

Convention on International Civil Aviation	ICAO Annexes affected by the transfer of responsibility in respect of certain functions and duties to the State of the Operator		
<i>Article 12: Rules of the air</i>	<i>Annex 2, all chapters</i>	<i>Yes</i> <input type="checkbox"/>	
		<i>No</i> <input type="checkbox"/>	
<i>Article 30 a): Aircraft radio equipment</i>	<i>Radio Station Licence</i>	<i>Yes</i> <input type="checkbox"/>	
		<i>No</i> <input type="checkbox"/>	
<i>Articles 30 b)</i>	<i>Annex 1, Chapters 1, 2, 3 and 6; and Annex 6, Part I, Radio Operator; or Annex 6, Part</i>	<i>Yes</i> <input type="checkbox"/>	<i>Annex 6: [Specify Part and paragraph]³</i>
		<i>No</i> <input type="checkbox"/>	

<i>and 32 a): Licenses of personnel</i>	<i>II (qualifications and/or flight crew member licensing); or Annex 6, Part III, Section II (composition of the flight crew) (radio operator); or Annex 6, Part III, Section III (qualifications)</i>		
<i>Article 31: Certificates of airworthiness</i>	<i>Annex 6 Part I or Part III, Section II</i>	<i>Yes</i> <input type="checkbox"/>	<i>[Specify Part and chapters]³</i>
		<i>No</i> <input type="checkbox"/>	
	<i>Annex 6 Part II or Part III, Section III</i>	<i>Yes</i> <input type="checkbox"/>	<i>[Specify Part and chapters]³</i>
		<i>No</i> <input type="checkbox"/>	
	<i>Annex 8 Part II, Chapters 3 and 4</i>	<i>Yes</i> <input type="checkbox"/>	<i>[Specify chapters]³</i>
		<i>No</i> <input type="checkbox"/>	

Aircraft affected by the transfer of responsibilities to the State of the Operator					
<i>Aircraft make, model, series</i>	<i>Nationality and registration marks</i>	<i>Serial No.</i>	<i>AOC No. (Commercial air transport)</i>	<i>Dates of transfer of responsibilities</i>	
				<i>From¹</i>	<i>To (if applicable)²</i>

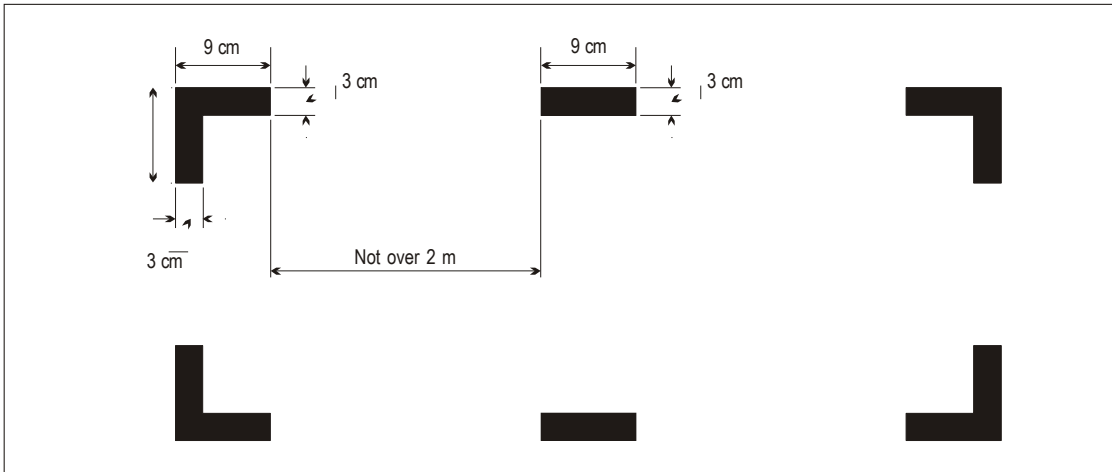
Notes.—

1. *dd/mm/yyyy.*
2. *dd/mm/yyyy or N/A if not applicable.*
3. *Square brackets indicate information that needs to be provided.*

**ELEVENTH SCHEDULE (section 60)
MARKING OF BREAK-IN POINTS**

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

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



MARKING OF BREAK-IN POINTS

TWELFTH SCHEDULE (*section 57(4)*)

ATTACHMENT E. MINIMUM EQUIPMENT LIST (MEL)

1. If deviations from the requirements of the Authority in the certification of aircraft were not permitted an aircraft could not be flown unless all systems and equipment were operable. Experience has proved that some unserviceability can be accepted in the short term when the remaining operative systems and equipment provide for continued safe operations.
2. The Authority shall indicate through approval of a minimum equipment list those systems and items of equipment that may be inoperative for certain flight conditions with the intent that no flight can be conducted with inoperative systems and equipment other than those specified.
3. A minimum equipment list, approved by the Authority, is therefore necessary for each aircraft, based on the master minimum equipment list established for the aircraft type by the organisation responsible for the type design in conjunction with the State of Design.
4. The Authority shall require the operator to prepare a minimum equipment list designed to allow the operation of an aircraft with certain systems or equipment inoperative provided an acceptable level of safety is maintained.
5. The minimum equipment list is not intended to provide for operation of the aircraft for an indefinite period with inoperative systems or equipment. The basic purpose of the minimum equipment list is to permit the safe operation of an aircraft with inoperative systems or equipment within the framework of a controlled and sound programme of repairs and parts replacement.
6. Operators are to ensure that no flight is commenced with multiple minimum equipment list items inoperative without determining that any interrelationship between inoperative systems or components will not result in an unacceptable degradation in the level of safety and/or undue increase in the flight crew workload.
7. The exposure to additional failures during continued operation with inoperative systems or equipment must also be considered in determining that an acceptable level of safety is being maintained. The minimum equipment list may not deviate from requirements of the flight manual limitations section, emergency procedures or other airworthiness requirements of the State of Registry or of the State of the Operator unless the appropriate airworthiness authority or the flight manual provides otherwise.
8. Systems or equipment accepted as inoperative for a flight should be placarded where appropriate, and all such items should be noted in the aircraft technical log to inform the flight crew and maintenance personnel of the inoperative system or equipment.
9. For a particular system or item of equipment to be accepted as inoperative, it may be necessary to establish a maintenance procedure, for completion prior to flight, to de-activate or isolate the system or equipment. It may similarly be necessary to prepare an appropriate flight crew operating procedure.
10. The responsibilities of the pilot-in-command in accepting an aeroplane for operation with deficiencies in accordance with a minimum equipment list are specified in section 57(4).

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PART IV
CIVIL AVIATION OPERATION OF AIRCRAFT – COMMERCIAL AIR TRANSPORT (HELICOPTERS)
SUB PART I
PRELIMINARY PROVISIONS

Sections

1. Title
2. Application

SUB PART II
GENERAL REQUIREMENTS

3. Compliance with laws, regulations and procedures
4. Compliance by a foreign operator with laws regulations and procedures of the Authority
5. Safety management
6. Use of psychoactive substance

SUB PART III
FLIGHT OPERATIONS

7. Operating facilities
8. Operational certification and supervision -Air Operator certificate
9. Surveillance of operations by a foreign operator
10. Operations manual
11. Operating instructions –General
12. In flight simulations of emergency situations
13. Checklists
14. Minimum flight altitudes (operations under IFR)
15. Heliport or landing location operating minima
16. Fuel and oil records
17. Crew-Pilot-in-command
18. Passengers
19. Over water flights
20. Flight preparation
21. Operational flight planning
22. Take-off alternate heliports
23. Destination alternate heliport
24. Offshore alternate heliport
26. Meteorological conditions
27. Visibility
28. Icing Conditions
29. Fuel and oil requirements
30. Refuelling with passengers on board or rotor turning
31. Oxygen supply
32. In-flight procedures –Heliport Operating Minima
33. Meteorological observations
34. Hazardous flight conditions
35. Flight crew members at duty stations
36. Use of oxygen
37. Safeguarding of cabin crew and passengers in pressurized Helicopters in the event of loss of pressurization.
38. Instrument flight procedures
39. Helicopter operating procedures for noise abatement
40. In flight fuel management
41. Duties of pilot-in-command
42. Duties of flight dispatcher

- 43. Carry-on baggage
- 44. Fatigue Management

SUB PART IV

HELICOPTER PERFORMANCE OPERATING LIMITATIONS

- 45. General
- 46. Helicopters for which application for certification was submitted on or after 22 March 1991 but before 13 December 2007
- 47. Mass limitation
- 48. Take-off and initial climb phase
- 49. En route phase
- 50. Approach and landing phase
- 51. Obstacle data
- 52. Additional requirements for operations of helicopters in performance class 3 in IMC, except special VFR flights

SUB PART V

HELICOPTER, INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

- 53. General
- 54. Helicopter operated under an Article 83 bis agreement
- 55. All Helicopters on All Flights
- 56. Marking of break-in points
- 57. Flight Recorders (Flight Data Recorders and Aircraft Data Recording Systems)
- 58. FDR Recording technology
- 59. FDR Duration
- 60. Cockpit voice recorders and cockpit audio recording systems
- 61. CVR Recording technology
- 62. CVR Duration
- 63. Data link recorders
- 64. Data link recorders duration
- 65. Data Link Correlation
- 66. Flight recorders — general
- 67. Flight recorders Operation
- 68. Continued serviceability
- 69. Flight recorders electronic documentation
- 70. Instruments And Equipment For Flights Operated Under VFR And IFR — By Day And Night
- 71. All Helicopters on Flights Over Water- Means Of Flotation
- 72. All Helicopters on Flights Over Water-Emergency Equipment
- 73. All helicopters on flights over designated sea areas
- 74. All Helicopters on Flights Over Designated Land Areas
- 75. Emergency Locator Transmitter (ELT)
- 76. All Helicopters on High Altitude Flights
- 77. All Helicopters in Icing Conditions
- 78. Helicopters When Carrying Passengers — Significant-Weather Detection
- 79. All Helicopters Required to Comply with The Noise Certification Standards in Annex 16, Volume I
- 80. Helicopters Carrying Passengers — Cabin Crew Seats
- 81. Helicopters Required to Be Equipped with A Pressure-Altitude Reporting Transponder
- 82. Microphones
- 83. Vibration Health Monitoring System

- 84. 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)
- 85. Electronic Flight Bags (EFBs)
- 86. EFB Equipment
- 87. EFB functions
- 88. EFB specific approval

SUB PART VI

HELICOPTER COMMUNICATION, NAVIGATION AND SURVEILLANCE EQUIPMENT

- 89. Communication equipment
- 90. Navigation Equipment
- 91. Surveillance Equipment
- 92. Installation
- 93. Electronic Navigation Data Management

SUB PART VII

HELICOPTER CONTINUING AIRWORTHINESS

- 94. Operator's Continuing Airworthiness Responsibilities
- 95. Operator's Maintenance Control Manual
- 96. Maintenance Programme
- 97. Continuing Airworthiness Records
- 98. Continuing Airworthiness Information
- 99. Modifications and Repairs
- 100. Maintenance Release
- 101. Records

SUB PART VIII

HELICOPTER FLIGHT CREW

- 102. Composition of Flight Crew
- 103. Flight Crew Member Emergency Duties
- 104. Flight Crew Member Training Programmes
- 105. Qualifications (Recent Experience PIC and Co-pilot)
- 106. Pilot-in-Command Operational Qualifications
- 107. Pilot Proficiency Checks
- 108. Flight Crew Equipment

SUB PART IX

FLIGHT DISPATCHER

- 109. Qualification and Training

SUB PART X

MANUALS, LOGS AND RECORDS

- 110. Flight Manual
- 111. Operator's Maintenance Control Manual
- 112. Maintenance Programme
- 113. Journey Logbook
- 114. Records of Emergency and Survival Equipment Carried
- 115. Flight Recorder Records

SUB PART XI

CABIN CREW

- 116. Assignment of Emergency Duties
- 117. Protection of Cabin Crew during flight
- 118. Training

SUB PART XII

SECURITY

- 119. Helicopter Search Procedure Checklist
- 120. Training Programmes
- 121. Reporting Acts of Unlawful Interference

SUB PART XIII

DANGEROUS GOODS

- 122. General Applicability
- 123. Operators with no specific approval for the transport of dangerous goods as cargo
- 124. Operators with a specific approval for the transport of dangerous goods as cargo-Overview
- 125. Loading and securing of dangerous goods
- 126. Dispensing or expending of dangerous goods from helicopters
- 127. Provision of Information
- 128. Domestic Commercial Air Transport Operations

SCHEDULES

FIRST SCHEDULE Safety oversight of air operators

SECOND SCHEDULE Additional requirements for operations of helicopters in performance class 3 in instrument meteorological conditions (IMC)

THIRD SCHEDULE Air operator certificate (AOC)

FOURTH SCHEDULE Flight recorders

FIFTH SCHEDULE General aviation specific approvals

SIXTH SCHEDULE Article 83 *bis* agreement summary

SEVENTH SCHEDULE Fatigue risk management system requirements

EIGHTH SCHEDULE Contents of an operations manual

NINTH SCHEDULE Marking of break-in points

SUB PART I

PRELIMINARY PROVISIONS

Title

1. This Part shall be cited as the Operation of Aircraft-Commercial Air Transport (Helicopters).

Application

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

SUB PART II

GENERAL REQUIREMENTS

Compliance with laws, regulations and procedures

3. (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) 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

(6) 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.

(7) 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.

(8) 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.

(9) 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.

(10) 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 Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019.

Compliance by a foreign operator with laws, regulations and procedures of the Authority

4. (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 Zimbabwe, 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.

Safety management

5. (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 Civil Aviation (Safety Management) Regulations.

(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—

- (a) related to a safety-related event identified in the context of a safety management system;
- (b) restricted to the relevant portions of a de-identified transcript of the recording; and are subject to the protections accorded in Civil Aviation (Safety Management) Regulations;
- (c) 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 Civil Aviation (Safety Management) Regulations;
- (d) used for inspections of flight recorder systems as provided in Fourth Schedule to this Part.

(4) 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 Civil Aviation (Safety Management) Regulations 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 required in this Part;
- (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.

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

Use of Psychoactive substances

6. Provisions for use of psychoactive substances are contained in Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019 and Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018.

SUB PART III

FLIGHT OPERATIONS

Operating facilities

7. (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.

Operational Certification and supervision - Air operator certificate

8. (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—

- (a) the State of the Operator and the issuing Authority;
- (b) the air operator certificate number and its expiration date;

- (c) the operator name, trading name (if different) and address of the principal place of business;
- (d) the date of issue and the name, signature and title of the authority representative; and
- (e) the location, in a controlled document carried on board, where the contact details of operational management can be found;

(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—

- (a) each aircraft model in the operator's fleet, identified by aircraft make, model and series including the list of authorisations, conditions and limitations;
- (b) issuing authority contact details;
- (c) operator name and AOC number;
- (d) date of issue and signature of the authority representative;
- (e) types and area of operations; and
- (f) 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 Civil Aviation (Safety Management) Regulations to ensure that the required standards of operations established in this Part are maintained.

Surveillance of operations by a foreign operator

9. (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 Zimbabwe 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.

Operations manual

10. (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.

Operating instructions — General

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

(3) 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.

(4) 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

(5) The information in subsection (4) shall be based on the helicopter manufacturer's or other data, acceptable to the Authority, and shall be included in the operations manual.

In-flight simulation of emergency situations

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

Checklists

13. (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).

Minimum flight altitudes (operations under IFR)

14. (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 the Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018.

(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—

- (a) the accuracy and reliability with which the position of the helicopter can be determined;
- (b) the inaccuracies in the indications of the altimeters used;
- (c) the characteristics of the terrain such as sudden changes in the elevation;
- (d) the probability of encountering unfavourable meteorological conditions, such as severe turbulence and descending air currents;
- (e) possible inaccuracies in aeronautical charts; and
- (f) airspace restrictions.

Heliport or landing location operating minima

15. (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—

- (a) for the purposes of an approach ban, a minima below the heliport or landing location operating minima;
 - (b) reducing or satisfying the visibility requirements; or
 - (c) requiring fewer ground facilities as compensated for by airborne capabilities.
- (7) When issuing a specific approval for the operational credit, the State of the operator 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 is more than one;
 - (c) operator has carried out a safety risk assessment of the operations supported by the equipment;
 - (d) operator has established and documented normal and abnormal procedures and MEL;
 - (e) operator has established a training program for the flight crew members and relevant personnel involved in the flight preparations

- (f) 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.
- (8) 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.
- (9) 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—
- (a) the type, performance and handling characteristics of the helicopter and any conditions or limitations stated in the flight manual;
 - (b) the composition of the flight crew, their competence and experience;
 - (c) the physical characteristics of the heliport, and direction of approach;
 - (d) the adequacy and performance of the available visual and non-visual ground aids;
 - (e) the equipment available on the helicopter for the purpose of navigation, acquisition of visual references and control of the flight path during the approach, landing and missed approach;
 - (f) the obstacles in the approach and missed approach areas and the obstacle clearance altitude or height for the instrument approach procedures;
 - (g) the means used to determine and report meteorological conditions;
 - (h) the obstacles in the climb-out areas and necessary clearance margins;
 - (i) the conditions prescribed in the operations specifications; and
 - (j) any minima that may be promulgated by the State of the aerodrome, heliport or landing location.
- (10) 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:
- (a) Type A- a minimum descent height or decision height at or above 75 m (250 ft); and
 - (b) Type B- a decision height below 75 m (250 ft) which are categorised as follows
 - (i) 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;
 - (ii) 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
 - (iii) 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.
- (11) The Authority shall issue a specific approval for instrument approach operations in low visibility which shall only be conducted when RVR information is provided.
- (12) For take-off in low visibility, the Authority shall issue a specific approval for the minimum take-off RVR.
- (13) 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.
- (14) 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.
- (15) 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.

Fuel and oil records

16. (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.

Crew – Pilot-in- Command

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

Passengers

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

- (a) seat belts or harnesses;
- (b) emergency exits;
- (c) life jackets, where the carriage of life jackets is prescribed;
- (d) oxygen dispensing equipment, where the provision of oxygen for the use of passengers is prescribed; and
- (e) other emergency equipment provided for individual use, including passenger emergency briefing cards.

(2) 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.

Over-water flights

19. (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.

Flight preparation

20. (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—

- (a) the helicopter is airworthy;
 - (b) the instruments and equipment prescribed in subpart VI, for the particular type of operation to be undertaken, are installed and are sufficient for the flight;
 - (c) a maintenance release as prescribed in section 106 has been issued in respect of the helicopter;
 - (d) the mass of the helicopter and centre of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;
 - (e) any load carried is properly distributed and safely secured;
 - (f) a check has been completed indicating that the operating limitations as described in subpart IV can be complied with for the flight to be undertaken; and
 - (g) 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.

Operational flight planning

21. (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.

Take-off alternate heliport

22. (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.

Destination alternate heliport

23. (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—

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

Offshore alternate heliport

24. (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.

25. (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 helicopters 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) 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 planning 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.

Meteorological conditions

26. (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 this Part.

- (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.

Visibility

27. (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.

Icing Conditions

28. (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.

Fuel and oil requirements

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

(3) 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:

- (a) fly to the landing site to which the flight is planned;
- (b) have 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 any of the potential contingencies specified by the operator to the satisfaction of the Authority.

(4) 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:

- (a) 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:
 - (i) 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
 - (ii) 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.
- (b) 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:
 - (i) fly to, and execute an approach at the alternate specified in the flight plan; and then;
 - (ii) 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
 - (iii) 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.
- (c) 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.

(5) In computing the fuel and oil required in section 31, at least the following shall be considered:

- (a) meteorological conditions forecast;
 - (b) expected air traffic control routings and traffic delays;
 - (c) for IFR flight, one instrument approach at the destination heliport, including a missed approach;
 - (d) the procedures prescribed in the operations manual for loss of pressurization, where applicable, or failure of one engine while en route; and
 - (e) any other conditions that may delay the landing of the helicopter or increase fuel or oil consumption.
- (6) 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.

Refuelling with passengers on board or rotors turning

30. (1) No person shall refuel a helicopter, rotors stopped or turning, when—
- (a) passengers are embarking or disembarking; or
 - (b) 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 subsection (2):
- (a) the flight crew shall ensure that the passengers are briefed on what actions to take if an incident occurs during refuelling.
 - (b) 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
 - (c) 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 subsection (2) may be carried out.
- (5) In addition to the requirements of subsection (2), operational procedures shall specify that at least the following precautions are taken—
- (a) doors on the refuelling side of the helicopter remain closed where possible, unless these are the only suitable exits;
 - (b) doors on the non-refuelling side of the helicopter remain open, weather permitting, unless otherwise specified by the helicopter flight manual (HFM);
 - (c) fire-fighting facilities of the appropriate scale are positioned so as to be immediately available in the event of a fire;
 - (d) where the presence of fuel vapour is detected inside the helicopter, or any other hazard arises during refuelling, fuelling shall be stopped immediately;
 - (e) the ground or deck area beneath the exits intended for emergency evacuation shall be kept clear;
 - (f) seat belts shall be unfastened to facilitate rapid egress; and
 - (g) 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—
- (a) passengers remain on board; or
 - (b) passengers are embarking or disembarking; or
 - (c) oxygen is being replenished.

Oxygen supply

31. (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—

- (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; and
- (b) 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.

In-flight procedures –heliport operating minima

32. (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—

- (a) 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.
- (b) 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.

Meteorological Observations

33. 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 Meteorology Services for Air Navigation Regulations.

Hazardous flight conditions

34. 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.

Flight crew members at duty stations

35.(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.

Use of oxygen

36. 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.

Safeguarding of cabin crew and passengers in pressurized helicopter in the event of loss of pressurisation

37. (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.

Instrument flight procedures.

38. (1) The operator shall ensure that one or more instrument approach procedures to serve each final approach and take-off area or heliport utilised 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.

Helicopter operating procedures for noise abatement

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

In-flight fuel management

40.(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.

Duties of pilot-in-command

41. (1) The PIC shall be responsible for—

- (a) the operation and safety of the helicopter;
- (b) 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;
- (c) 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;
- (d) reporting all known or suspected defects in the helicopter, to the operator, at the termination of the flight;

- (e) 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.

Duties of flight dispatcher

42. (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—
- (a) assist the pilot-in-command in flight preparation and provide the relevant information;
 - (b) assist the pilot-in-command in preparing the operational and ATS flight plans, sign when applicable and file the ATS flight plan with the appropriate ATS unit; and
 - (c) furnish the pilot-in-command while in flight, by appropriate means, with information which may be necessary for the safe conduct of the flight.
- (2) In the event of an emergency, a flight dispatcher shall—
- (a) initiate such procedures as outlined in the operations manual while avoiding taking any action that would conflict with ATC procedures; and
 - (b) convey safety-related information to the pilot-in-command that may be necessary for the safe conduct of the flight, including information related to any amendments to the flight plan that become necessary in the course of the flight.
- (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.

Carry-on baggage

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

Fatigue management

44. (1) The Authority has established prescriptive flight time, flight duty period and duty period limitations and rest period requirements as outlined in Part II (Air Operator Certificate).
- (2) The prescriptive limits referred to in subsection (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) An operator, 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 limits established in the Part II (Air Operator Certificate).
- (4) An 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.
- (5) In approving an operator's flight time, flight duty period and duty period limitations and rest period requirements, the Authority—
- (e) shall require that the operator familiarize those personnel involved in managing fatigue with their responsibilities and the principles of fatigue management;
 - (f) may approve, in exceptional circumstances, variations to this Part 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 limitations.
- (6) No operator shall implement non prescriptive fatigue management methods.

SUB PART IV

HELICOPTER PERFORMANCE OPERATING LIMITATIONS

General

45. (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:

- (a) the type and circumstances of the operation;
- (b) the area or terrain over which the operation is being conducted;
- (c) the probability of, and length of exposure to, a critical engine failure and the tolerability of such an event;
- (d) the procedures and systems for monitoring and maintaining the reliability of the engine(s);
- (e) the training and operational procedures to mitigate the consequences of the critical engine failure; and
- (f) 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.

Helicopters to which Part IV of Annex 8 certification standards are applicable

46. (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 Part is maintained under all expected operating conditions, including those not covered specifically by the provisions of this 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 Part, account shall be taken of all factors that significantly affect the performance of the helicopter including —

- (a) mass;
- (b) operating procedures;
- (c) the pressure-altitude appropriate to the elevation of the operating site;
- (d) temperature;
- (e) wind; and
- (f) condition of the surface.

(7) The factors specified in subsection (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.

Mass limitations

47. (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 this Part unless otherwise authorised 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.

Take-off and initial climb phase

48. (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.

En-route phase

49. (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 subsection (1) and (2) shall apply.

Approach and landing phase

50. (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);
 - (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 bailed 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.

Obstacle data

51. 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).

Additional requirements for operations of helicopters in performance class 3 in IMC, except special VFR flights

52. (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 Airworthiness of Aircraft Regulations published in statutory instrument 64 of 2018 is provided by—

- (a) the reliability of the engines;
- (b) the operator's maintenance procedures, operating practices and crew training programmes; and
- (c) 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 utilise 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

General

53.(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 subsection (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.

Helicopter operated under Article 83 bis agreement

54.(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 subsection (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.

All Helicopters on All Flights

55.(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;

(c) the pilot's compartment; and

(d) each passenger compartment that is separate from the pilot's compartment and that is not readily accessible to the flight crew;

(e) 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;

(f) 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;

(g) 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.

(h) means of ensuring that the following information and instructions are conveyed to passengers—

(i) when seat belts or harnesses are to be fastened;

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

(iii) restrictions on smoking;

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

(v) location and method of opening emergency exits; and

(i) 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 Layer*, 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 Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018 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.

Marking of break-in points

56.(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.

Flight Recorders (Flight Data Recorders and Aircraft Data Recording Systems)

57. (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 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 pilots, 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.

(6) 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.

(7) 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.

FDR Recording technology

58. 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.

FDR Duration

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

Cockpit voice recorders and cockpit audio recording systems

60. (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.

CVR Recording technology

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

CVR Duration

62. 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.

Data link recorders

63.(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.

Data link recorders duration

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

Data Link Correlation

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

Flight recorders — general

66. 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.

Flight recorders Operation

67. (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.

Continued serviceability

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

Flight recorders electronic documentation

69. 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.

Instruments and Equipment for Flights Operated Under VFR And IFR — by Day and Night

70. (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 Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018 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) 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 certifying 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).
- (d) 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.
- (e) 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.

All Helicopters on Flights Over Water- Means Of Flotation

71.(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.

All Helicopters on Flights Over Water-Emergency Equipment

72.(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 Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018.

(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 subsection (2) shall be equipped as in subsection (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 subsection (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.

All helicopters on flights over designated sea areas

73.(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.

All Helicopters on Flights Over Designated Land Areas

74. 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.

Emergency Locator Transmitter (ELT)

75. (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 Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019.

All Helicopters on High Altitude Flights

76. (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.
- (2) The total number of oxygen dispensing units shall exceed the number of passenger and cabin crew seats by at least 10 per cent.

All Helicopters in Icing Conditions

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

Helicopters When Carrying Passengers — Significant-Weather Detection

78. 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.

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

79. 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.

Helicopters Carrying Passengers — Cabin Crew Seats

80. An operator shall ensure that —
- (a) a helicopter is 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.

Helicopters required to be Equipped with a Pressure-Altitude Reporting Transponder

81. 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 Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019

Microphones

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

Vibration Health Monitoring System

83. 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.

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)

84.(1) Notwithstanding 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.

Electronic Flight Bags (EFBs)

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

EFB Equipment

86. 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.

EFB functions

87. (1) Where EFBs are used on board a helicopter the operator shall—
- (a) assess the safety risk 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.
- (2) The Authority shall issue a specific approval for the operational use of EFB functions to be used for the safe operation of helicopters.

EFB specific approval

88. 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 functions;
 - (c) the operator has established requirements for redundancy of the information (if appropriate) contained and displayed by the EFB functions;
 - (d) the operator has established and documented procedures for the management of the EFB functions 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 functions.

SUB PART VI

HELICOPTER COMMUNICATION, NAVIGATION AND SURVEILLANCE EQUIPMENT

Communication equipment

89. (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 subsection (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 subsection (1) —
- (a) be provided with communication equipment which will enable it to operate in accordance with the prescribed RCP specifications;
 - (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 Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018 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).

Navigation Equipment

90. (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 specifications; 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.

Surveillance Equipment

91. (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 specifications;
 - (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.
- (4) 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 Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018; and
 - (b) taking immediate corrective action for individual helicopter, helicopter types or operators, identified in such reports as not complying with the RSP specifications.

Installation

92. 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.

Electronic Navigation Data Management

93. (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

Operator's Continuing Airworthiness Responsibilities

94. (1) For the purpose of this 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—

- (a) an organisation complying with the provisions of Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018 that is either approved by the Authority or is approved by another Contracting State and is acceptable to the Authority;

(b) a qualified person or organization in accordance with procedures that are authorised by the State of Registry and

(c) 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.

Operator's maintenance control manual

95. (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.

Maintenance programme

96. (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.

Continuing Airworthiness Records

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

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

(b) the current status of compliance with all mandatory continuing airworthiness information;

(c) appropriate details of modifications and repairs to the helicopter and its major components;

(d) 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;

(e) the current status of the helicopter's compliance with the maintenance programme; and

(f) 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 subsection (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.

Continuing airworthiness information

98. (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 Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018.

(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.

Modifications and Repairs

99. (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.

Maintenance release

100. (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 Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018.

(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 Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019 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:

- (a) basic details of the maintenance carried out including detailed reference of the approved data used;
- (b) the date such maintenance was completed; and
- (c) the identity of the qualified person or persons signing the release.

Records

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

- (a) in respect of the entire helicopter: the total time in service;
- (b) in respect of the major components of the helicopter:
 - (i) the total time in service;
 - (ii) the date of the last overhaul;
 - (iii) the date of the last inspection;
- (c) in respect of those instruments and equipment, the serviceability and operating life of which are determined by their time in service:
 - (i) such records of the time in service as are necessary to determine their serviceability or to compute their operating life;
 - (ii) the date of the last inspection.

(2) The records specified in subsection (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

Composition of the flight crew

102. (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.

Flight Crew Member Emergency Duties

103. (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 subsection (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.

Flight Crew Member Training Programmes

104. (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 subsection (1) shall—
- (a) include ground and flight training facilities and properly qualified instructors as determined by the Authority;
 - (b) consist of ground and flight training for the type of helicopter on which the flight crew member serves;
 - (c) include proper flight crew coordination and training for all types of emergency and abnormal situations or procedures caused by engine, transmission, rotor, airframe or systems malfunctions, fire or other abnormalities;
 - (d) include training in knowledge and skills related to the visual and instrument flight procedures for the intended area of operation, human performance and threat error and management, the transport of dangerous goods and, where applicable, procedures specific to the environment in which the helicopter is to be operated;
 - (e) ensure that all flight crew members know the functions for which they are responsible and the relation of these functions to the functions of other crew members, particularly in regard to abnormal or emergency procedures;
 - (f) 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
 - (g) 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:
- (a) the use, to the extent deemed feasible by the Authority, of flight simulation training devices approved by the Authority for that purpose; or
 - (b) the completion within the appropriate period of the proficiency check required under section 112 in that type of helicopter.

Qualifications (Recent Experience PIC and Co-pilot)

105. (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 subsection (1) for each variant or each type of helicopter can be combined.

Pilot-in-Command Operational Qualifications

106. (1) No operator shall utilise 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 subsections (2) and (3).

- (2) Each pilot referred to in subsection (1) shall demonstrate to the operator an adequate knowledge of:
- (a) the operation to be flown, including knowledge of—

- (i) the terrain and minimum safe altitudes;
 - (ii) the seasonal meteorological conditions;
 - (iii) the meteorological, communication and air traffic facilities, services and procedures;
 - (iv) the search and rescue procedures; and
 - (v) the navigation facilities and procedures associated with the route or area in which the flight is to take place; and
- (b) 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;
- (c) 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 utilise 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 subsections (2) and (3).

Pilot Proficiency Checks

107. (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.
- (6) Pilot proficiency checks shall be performed twice within any period of 1 year.
- (7) Any two pilot proficiency checks which are similar and which occur within a period of four consecutive months shall not alone satisfy this requirement.
- (8) Flight simulation training devices approved by the Authority may be used for those parts of the checks for which they are specifically approved.
- (9) 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.

Flight crew equipment

108. 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

Qualification and training

109. (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 Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019.

(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 Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019 for the dispatcher licence.

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

- (a) 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;
- (b) made, within the preceding 12 months, at least two qualification flights in a helicopter over any area for which that person is authorised to exercise flight supervision and the flight shall include landings at as many heliports as practicable;
- (c) demonstrated to the operator a knowledge of:
 - (i) the contents of the operations manual as prescribed in the Eighth Schedule;
 - (ii) the radio equipment in the helicopters used; and
 - (iii) the navigation equipment in the helicopters used;
- (d) demonstrated to the operator a knowledge of the following details concerning operations for which the officer is responsible and areas in which that individual is authorised to exercise flight supervision:
 - (i) the seasonal meteorological conditions and the sources of meteorological information;
 - (ii) the effects of meteorological conditions on radio reception in the helicopters used;
 - (iii) the peculiarities and limitations of each navigation system which is used by the operation; and
 - (iv) the helicopter loading instructions;
- (e) demonstrated to the operator as to knowledge and skills related to human performance as they apply to dispatch duties; and
- (f) demonstrated to the operator the ability to perform the 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

Flight manual

110. (1) An operator shall ensure that a flight manual contains the information specified in the Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018 and be updated by implementing changes made mandatory by the State of Registry.

Operator's maintenance control manual

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

- (a) a description of the procedures required by section 100 including, where applicable:
 - (i) a description of the administrative arrangements between the operator and the approved maintenance organisation; and

- (ii) 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;
- (b) names and duties of the qualified person or persons required by section 100 (4);
- (c) a reference to the maintenance programme required by section 102;
- (d) a description of the methods used for the completion and retention of the operator's maintenance records required by section 103;
- (e) a description of the procedures for monitoring, assessing and reporting maintenance and operational experience required by section 104.
- (f) a description of the procedures for complying with the service information reporting requirements of Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018;
- (g) a description of procedures for assessing continuing airworthiness information and implementing any resulting actions, as required as required by section 104;
- (h) a description of the procedures for implementing action resulting from mandatory continuing airworthiness information;
- (i) a description of establishing and maintaining a system of analysis and continued monitoring of the performance and efficiency of the maintenance programme, in order to correct any deficiency in that programme;
- (j) a description of helicopter types and models to which the manual applies;
- (k) a description of procedures for ensuring that unserviceability affecting airworthiness are recorded and rectified;
- (l) a description of the procedures for advising the State of Registry of significant in-service occurrences;
- (m) a description of procedures to control the leasing of aircraft and related aeronautical products; and
- (n) a description of the maintenance control manual amendment procedures.

Maintenance programme

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

- (a) maintenance tasks and the intervals at which these are to be performed, taking into account the anticipated utilisation of the helicopter;
- (b) where applicable, a continuing structural integrity programme;
- (c) procedures for changing or deviating from paragraphs (a) and (b); and
- (d) 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 subsection (1) shall be based on maintenance programme information made available by the State of Design or by the organisation responsible for the type design, and any additional applicable experience.

Journey logbook

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

- (a) I — Helicopter nationality and registration.
- (b) II — Date.
- (c) III — Names of crew members.
- (d) IV — Duty assignments of crew members.
- (e) V — Place of departure.
- (f) VI — Place of arrival.
- (g) VII — Time of departure.
- (h) VIII — Time of arrival.
- (i) IX — Hours of flight.
- (j) X — Nature of flight-private, scheduled or non-scheduled.
- (k) XI — Incidents, observations, if any.
- (l) 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.

Records of emergency and survival equipment carried

114. (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 subsection (1) shall include, as applicable—

- (a) the number, colour and type of life rafts and pyrotechnics;
- (b) details of emergency medical supplies;
- (c) water supplies; and
- (d) the type and frequencies of the emergency portable radio equipment.

Flight recorder records

115. 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

Assignment of emergency duties

116. (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.

Protection of cabin crew during flight

117. 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.

Training

118. (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 subsection (1) shall ensure that each person is:

- (a) 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;
- (b) 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;
- (c) 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;
- (d) 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;
- (e) aware of the types of dangerous goods which may, and may not, be carried in a passenger cabin; and

- (f) knowledgeable about human performance as related to passenger cabin safety duties including flight crew cabin crew coordination.

SUB PART XII

SECURITY

Helicopter Search Procedure Checklist

119. (1) In the context of this 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 subsection (1) shall be supported by guidance on the course of action to be taken should a bomb or suspicious object be found.

Training Programmes

120. (1) An operator shall establish and maintain a training programme which enables crew members to act in the most appropriate manner to minimise 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:

- (a) determination of the seriousness of any occurrence
- (b) crew communication and coordination;
- (c) appropriate self-defence responses
- (d) use of non-lethal protective devices assigned to crew members whose use is authorized by the Authority;
- (e) understanding of behaviour of terrorists so as to facilitate the ability of crew members to cope with hijacker behaviour and passenger responses;
- (f) live situational training exercises regarding various threat conditions;
- (g) flight crew compartment procedures to protect the aeroplane; and aeroplane search procedures and guidance on least-risk bomb locations where practicable.

Reporting Acts of Unlawful Interference

121. 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

General Applicability

122. 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.

Operators with no specific approval for the transport of dangerous goods as cargo

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

- (a) established a dangerous goods training programme that meets the requirements of Civil Aviation (Dangerous Goods) Regulations, Statutory Instrument 51 of 2018, 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
- (b) established dangerous goods policies and procedures in their operations manuals to meet, at a minimum, the requirements of Civil Aviation (Dangerous Goods) Regulations, Statutory Instrument 51 of 2018, 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—
 - A. occasions when undeclared dangerous goods are discovered in cargo or mail; and
 - B. dangerous goods accidents and incidents.

Operators with a specific approval for the transport of dangerous goods as cargo - Overview

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

- (a) training programme that meets the requirements in the Technical Instructions, Part 1.4, and Civil Aviation (Dangerous Goods) Regulations, Statutory Instrument 51 of 2018, as appropriate and details of the dangerous goods training programme shall be included in the operator's operations manuals.
- (b) policies and procedures in its operations manual to meet, at a minimum, the requirements of Civil Aviation (Dangerous Goods) Regulations, Statutory Instrument 51 of 2018, the Technical Instructions to enable operator personnel to—
 - (i) identify and reject undeclared or mis-declared dangerous goods in cargo or mail, including COMAT classified as dangerous goods;
 - (ii) report to the Authority, and the State in which it occurred, any—
 - A. occasions when undeclared or mis-declared dangerous goods are discovered in cargo or mail; and
 - B. dangerous goods accidents and incidents;
 - (iii) report to the Authority any occasions when dangerous goods are discovered to have been carried:
 - A. when not loaded, segregated, separated or secured in accordance with the Technical Instructions, Part 7.2; and
 - B. without information having been provided to the pilot-in-command;
 - (iv) accept, handle, store, transport, load and unload dangerous goods, including COMAT classified as dangerous goods as cargo on board an aircraft; and
 - (v) 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.

Loading and securing of dangerous goods

125. 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.

Dispensing or expending of dangerous goods from helicopters

126. (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.

Provision of Information

127. 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.

Domestic Commercial Air Transport Operations

128. The provisions set forth in this Part shall apply to operators, including in the case of domestic commercial air transport operations.

FIRST SCHEDULE (section 8(8))

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.

2. 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.

3. STATE SAFETY OVERSIGHT SYSTEM AND FUNCTION

3.1 The State of the Operator shall ensure that the authority is responsible for the safety oversight of air operators.

3.2 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.

3.3 **Recommendation.**— *The methodology in 3.2 shall be documented.*

3.4 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.

4. 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).*

5. TECHNICAL GUIDANCE, TOOLS AND PROVISION OF SAFETY-CRITICAL INFORMATION

5.1 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.

5.2 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.

5.3 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.

6. CERTIFICATION OBLIGATION

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

7. CONTINUED SURVEILLANCE OBLIGATIONS

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.

RESOLUTION OF SAFETY ISSUES

Note.— *Provisions for the resolution of safety issues are contained in Appendix 1 to Annex 19.*

SECOND SCHEDULE (section 52(2)(c))

ADDITIONAL REQUIREMENTS FOR OPERATIONS OF HELICOPTERS IN PERFORMANCE CLASS

3 IN

INSTRUMENT METEOROLOGICAL CONDITIONS (IMC)

Airworthiness and operations requirements, shall satisfy the following:

1. ENGINE RELIABILITY

1.1 Attaining and maintaining approval for engines used by helicopters operating in performance Class 3 in IMC:

1.1.1 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.

1.1.2 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.

1.1.3 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.

1.2 The operator shall be responsible for a programme for ongoing engine trend monitoring.

1.3 To minimize the probability of in-flight engine failure, the engine shall be equipped with:

- a) 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;
- b) 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
- c) 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.

2. 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:

- a) 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
- b) 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;
- c) a radio altimeter;
 - d) 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;
 - e) a means to provide for at least one attempt at engine re-start;
 - f) an area navigation system approved for use in IFR, capable of being used to locate suitable landing areas in the event of an emergency;
 - g) 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
 - h) an engine fire warning system.

3. 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.

4. OPERATIONS MANUAL INFORMATION

The operations manual shall include limitations, procedures, approval status and other information relevant to operations in performance Class 3 in IMC.

5. EVENT REPORTING

5.1 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.

5.2 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.

6. 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:

- a) 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;
- b) weather information, including seasonal and other adverse meteorological influences that may affect the flight; and
- c) other criteria and limitations as specified by the State of the Operator.

7. FLIGHT CREW EXPERIENCE, TRAINING AND CHECKING

7.1 The Authority shall prescribe the minimum flight crew experience for helicopters operating in performance Class 3 in IMC.

7.2 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.

8. 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 (section 8(7))

AIR OPERATOR CERTIFICATE (AOC)

1. PURPOSE AND SCOPE

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

1.2 The air operator certificate and its associated operations specifications shall define the operations for which the operator is authorized, including specific approvals, conditions and limitations.

1.3 AOC template shall be as specified in Part 2 (Air Operator Certificate) regulations.

2. OPERATIONS SPECIFICATIONS FOR EACH AIRCRAFT MODEL

Note.— Section 56, requires a copy of the operations specifications of this section to be carried aboard.

2.1 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.

2.2 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 name ³ : _____		Date ⁴ : _____ Signature: _____
Dba trading name ³ : _____				
Aircraft model ⁵ : _____				
Types of operation: Commercial air transportation <input type="checkbox"/> Passengers <input type="checkbox"/> Cargo <input type="checkbox"/> Other ⁶ : _____				
Area(s) of operation ⁷ : _____				
Special limitations ⁸ :				
SPECIFIC APPROVAL	YES	NO	DESCRIPTION ⁹	REMARKS
Dangerous goods	<input type="checkbox"/>	<input type="checkbox"/>		
Low visibility operations				
Approach and landing	<input type="checkbox"/>	<input type="checkbox"/>	CAT ¹⁰ : ___ RVR: ___ m DH: _____ ft RVR ¹¹ : ___ m 12	
Take-off	<input type="checkbox"/>	<input type="checkbox"/>		
Operational credit(s)	<input type="checkbox"/>	<input type="checkbox"/>		
RVSM ¹³ <input type="checkbox"/> N/A	<input type="checkbox"/>	<input type="checkbox"/>		
EDTO ¹⁴ <input type="checkbox"/> N/A	<input type="checkbox"/>	<input type="checkbox"/>	Threshold time ¹⁵ : ___ minutes Maximum diversion time ¹⁵ : _ minutes	
AR navigation specifications for PBN operations	<input type="checkbox"/>	<input type="checkbox"/>	16	
Continuing airworthiness			17	
EFB	<input type="checkbox"/>	<input type="checkbox"/>	18	
Other ¹⁹	<input type="checkbox"/>	<input type="checkbox"/>		

Notes.—

2. Telephone contact details of the authority, including the country code. Email and fax to be provided if available.
3. Insert the associated AOC number.
4. Insert the operator's registered name and the operator's trading name, if different. Insert "dba" before the trading name (for "doing business as").
5. Issuance date of the operations specifications (dd-mm-yyyy) and signature of the authority representative.

6. *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>.*
7. *Other type of transportation to be specified (e.g. emergency medical service).*
8. *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.*
9. *List the applicable special limitations (e.g. VFR only, day only).*
10. *List in this column the most permissive criteria for each specific approval (with appropriate criteria).*
11. *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.*
12. *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.*
13. *List the airborne capabilities (i.e. automatic landing, HUD, EVS, SVS, CVS) and associated operational credit(s) granted.*
14. *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.*
15. *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).*
16. *List the EFB functions used for the safe operation of helicopters and any applicable limitations.*
17. *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 (sections 5(3)(d), 57, 63)

FLIGHT RECORDERS

Note: 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

- 1.1 Non-deployable flight recorder containers shall be painted a distinctive orange colour.
- 1.2 Non-deployable crash-protected flight recorder containers shall:
 - c) carry reflective material to facilitate their location; and
 - d) 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.
- 1.3 Automatic deployable flight recorder containers shall:
 - d) be painted a distinctive orange colour, however the surface visible from outside the helicopter may be of another colour;
 - e) carry reflective material to facilitate their location; and

- f) have an integrated automatically activated ELT.
- 1.4 The flight recorder systems shall be installed so that:
 - e) the probability of damage to the recordings is minimized;
 - f) there is an aural or visual means for pre-flight checking that the flight recorder systems are operating properly;
 - g) 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
 - h) 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.

1.5 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.

1.6 The lightweight flight recorders shall be connected to a power source having the characteristics which ensure proper and reliable recording in the operational environment.

1.7 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.

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

1.9 The manufacturer usually provides the appropriate certificating authority with the following information in respect of the flight recorder systems:

- d) manufacturer's operating instructions, equipment limitations and installation procedures;
- e) parameter origin or source and equations which relate counts to units of measurement; and
- f) manufacturer's test reports.

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

2.1 Start and stop logic

The FDR or ADRS shall start to record prior to the 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.

2.2 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.

2.2.1 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.

2.2.2 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*

- 2.2.3 If further FDR recording capacity is available, recording of the following additional information shall be considered:
- 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
 - additional engine parameters (EPR, N1, fuel flow, etc.).

2.2.4 The parameters that satisfy the requirements for ADRS are the first 7 parameters listed in Table A4-3.

2.2.5 If further ADRS recording capacity is available, the recording of any parameters from 8 onwards defined in Table A4-3 shall be considered.

2.3 Additional information

2.3.1 The measurement range, recording interval and accuracy of parameters on installed equipment is usually verified by methods approved by the appropriate certificating authority.

2.3.2 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.

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

3.1 Start and stop logic

The CVR or CARS shall start to record prior to the 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.

3.2 Signals to be recorded

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

- voice communication transmitted from or received in the aircraft by radio;
- aural environment on the flight deck;
- voice communication of flight crew members on the flight deck using the interphone system, if installed;
- voice or audio signals identifying navigation or approach aids introduced in the headset or speaker; and
- voice communication of flight crew members using the passenger address system, if installed.

3.2.2 **Recommendation.**—*The preferred CVR audio allocation should be as follows:*

- pilot-in-command audio panel;*
- co-pilot audio panel;*
- additional flight crew positions and time reference; and*
- cockpit area microphone.*

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

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

3.2.4 **Recommendation.**—*The preferred CARS audio allocation should be as follows:*

- voice communication; and*
- aural environment on the flight deck.*

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

4.1 Start and stop logic

The AIR or AIRS shall start to record prior to the 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.

4.2 Classes

4.2.1 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.*

4.2.2 A Class B AIR or AIRS captures data link message displays.

4.2.3 A Class C AIR or AIRS captures instruments and control panels.

5. DATA LINK RECORDER (DLR)

Applications to be recorded

5.1.1 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.

5.1.2 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.

6. INSPECTIONS OF FLIGHT RECORDER SYSTEMS

6.1 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.

6.2 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.

6.1 Recording inspections shall be carried out as follows:

- a) an analysis of the recorded data from the flight recorders shall ensure that the recorder operates correctly for the nominal duration of the recording;
- b) 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;
- c) 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;
- d) 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;
- e) 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
- f) 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.
- g) an examination of the recorded messages on the DLR or DLRS shall be carried out by replay of the DLR or DLRS recording.

6.2 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.

6.3 A report of the recording inspection shall be made available on request to regulatory authorities for monitoring purposes.

6.4 Calibration of the FDR system:

- a) 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
- b) 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 number	Parameter	Applicability	Measurement range	Maximum sampling and recording Interval (Seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
L	Time (UTC when available, otherwise relative time count or GNSS time sync)		24 hours	4	$\pm 0.125\%$ /h	1 s
2	Pressure altitude		-300 m (-1 000 ft) to maximum certificated altitude of aircraft +1 500 m (+5 000 ft)	1	± 30 m to ± 200 m (± 100 ft to ± 700 ft)	1.5 m (5 ft)
3	Indicated airspeed		As the installed pilot display measuring system	1	$\pm 3\%$	1 kt
4	Heading		360°	1	$\pm 2^\circ$	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		$\pm 75^\circ$ or 100% of useable range whichever is greater	0.5	$\pm 2^\circ$	0.5°
7	Roll attitude		$\pm 180^\circ$	0.5	$\pm 2^\circ$	0.5°
8	Radio transmission Keying		On-off (one discrete)	1	—	—
9	Power on each Engine		Full range	1 (per engine)	$\pm 2\%$	0.1% of full range
10	Main rotor: Main rotor speed		50–130%	0.51	$\pm 2\%$	0.3% of full range
	Rotor brake		Discrete		—	—
11	Pilot input and/or control surface position — primary controls (collective pitch, longitudinal cyclic pitch, lateral cyclic pitch, tail rotor pedal)		Full range	0.5 (0.25 recommended)	$\pm 2\%$ unless higher accuracy uniquely required	0.5% of operating range
12	Hydraulics, each system (low pressure and selection)		Discrete	1	—	—
13	Outside air temperature		Sensor range	2	$\pm 2^\circ$ C	0.3° C

Civil Aviation (Operations of Aircraft) Regulations, 2023

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

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

Civil Aviation (Operations of Aircraft) Regulations, 2023

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

S.I. 78 of 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	Application for type certification is submitted to a Contracting State on or after 1 January 2023	As installed	64	As installed	1% of full range
53*	Helicopter computed weight	Application for type certification is submitted to a Contracting State on or after 1 January 2023	As installed	64	As installed	1% of full range

Table A4-2. Description of Applications for Data Link Recorders

Item No.	Application type	Application description	Recording content
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.	C
2	Controller/pilot communication	This includes any application used to exchange requests, 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.	C
3	Addressed surveillance	This includes any surveillance application in which the ground sets 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.	C
4	Flight information	This includes any service used for delivery of flight information to 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.	C
5	Aircraft broadcast surveillance	This includes elementary and enhanced surveillance systems, as 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.	M*
6	Aeronautical operational control data	This includes any application transmitting or receiving data used for aeronautical operational control purposes (per the ICAO definition of operational control)	M*

*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 ^o	Parameter name	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
1	Heading:					
	a) Heading (Magnetic or True)	±180°	1	±2°	0.5°	*Heading is preferred, if not available, yaw rate shall be recorded
	b) Yaw rate	±300°/s	0.25	±1% + drift of 360°/h	2°/s	
2	Pitch:					
	a) Pitch attitude	±90°	0.25	±2°	0.5°	*Pitch attitude is preferred, if not available, pitch rate shall be Recorded
	b) Pitch rate	±300°/s	0.25	±1% + drift of 360°/h	2°/s	
3	Roll:					
	a) Roll attitude	±180°	0.25	±2°	0.5°	*Roll attitude is preferred, if not available, roll rate shall be recorded
	b) Roll rate	±300°/s	0.25	±1% + drift of 360°/h	2°/s	
4	Positioning system:					
	a) Time	24 hours	1	±0.5°	0.1°	UTC time preferred where available
	b) Latitude/longitude	Latitude:±90° Longitude:±180°	2 (1 if available)	As installed (0.00015° recommended)	0.00005°	
	c) Altitude	-300 m (-1 000 ft) to maximum certificated altitude of aircraft +1 500 m (5 000 ft)	2 (1 if available)	As installed (±15 m (±50 ft) recommended)	1.5 m (5 ft)	
	d) Ground speed	0-1 000 kt	2 (1 if available)	As installed (±5 kt recommended)	1 kt	
	e) Track	0-360°	2 (1 if available)	As installed (± 2° recommended)	0.5°	
	f) Estimated error	Available range	2 (1 if available)	As installed	As installed	Shall be recorded if readily Available

Civil Aviation (Operations of Aircraft) Regulations, 2023

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 (0.125 if available)	As installed (±0.09 g excluding a datum error of ±0.05 g recommended)	0.004 g	
6	Longitudinal acceleration	±1 g	0.25 (0.125 if available)	As installed (±0.015 g excluding a datum error of ±0.05 g recommended)	0.004 g	
7	Lateral acceleration	±1 g	0.25 (0.125 if available)	As installed (±0.015 g excluding a datum error of ±0.05 g recommended)	0.004 g	
8	External static pressure (or pressure altitude)	34.4 hPa (1.02 in-Hg) to 310.2 hPa (9.16 in-Hg) or available sensor range	1	As installed (±1 hPa (0.3 in-Hg) or ±30 m (±100 ft) to ±210 m (±700 ft) recommended)	0.1 hPa (0.03 in-Hg) or 1.5 m (5 ft)	
9	Outside air temperature (or total air temperature)	-50° to +90°C or available sensor range	2	As installed (±2°C recommended)	1°C	
10	Indicated air speed	As the installed pilot display measuring system or available sensor range	1	As installed (±3% recommended)	1 kt (0.5 kt recommended)	
11	Main rotor speed (Nr)	50% to 130% or available sensor range	0.5	As installed	0.3% of full range	
12	Engine RPM (*)	Full range including overspeed condition	Each engine each second	As installed	0.2% of full range	*For piston-Engine Helicopters
13	Engine oil pressure	Full range	Each engine each second	As installed (5% of full range recommended)	2% of full range	
14	Engine oil temperature	Full range	Each engine each second	As installed (5% of full range recommended)	2% of full range	
15	Fuel flow or pressure	Full range	Each engine each second	As installed	2% of full range	
16	Manifold pressure (*)	Full range	Each engine each second	As installed	0.2% of full range	*For piston-engine Helicopters

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

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 Registry ¹ :	
	By State of the principal location of a general aviation operator ¹ :	
Duration:	Start Date ¹ :	End Date (if applicable) ² :
Languages of the Agreement		
ICAO Registration No.:		
Umbrella Agreement (if any) with ICAO Registration number:		

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

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

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*

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

1.1 FRMS policy

1.1.1 The operator shall define its FRMS policy, with all elements of the FRMS clearly identified.

1.1.2 The policy shall require that the scope of the FRMS be clearly defined in the operations manual.

1.1.3 The policy shall:

- a) reflect the shared responsibility of management, flight and cabin crews, and other involved personnel;
- b) clearly state the safety objectives of the FRMS;
- c) be signed by the accountable executive of the organization;
- d) be communicated, with visible endorsement, to all the relevant areas and levels of the organization;
- e) declare management commitment to effective safety reporting;
- f) declare management commitment to the provision of adequate resources for the FRMS;
- g) declare management commitment to continuous improvement of the FRMS;
- h) require that clear lines of accountability for management, flight and cabin crews, and all other involved personnel be identified; and
- i) require periodic reviews to ensure it remains relevant and appropriate.

Note.— Effective safety reporting is described in the Safety Management Manual (Doc 9859).

1.2 FRMS documentation

The operator shall develop and keep current FRMS documentation that describes and records:

- a) FRMS policy and objectives;
- b) FRMS processes and procedures;
- c) accountabilities, responsibilities and authorities for these processes and procedures;
- d) mechanisms for ongoing involvement of management, flight and cabin crew members, and all other involved personnel;
- e) FRMS training programmes, training requirements and attendance records;
- f) 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).

- g) FRMS outputs including findings from collected data, recommendations and actions taken.

2. FATIGUE RISK MANAGEMENT PROCESSES

2.1 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.

2.1.1 The operator shall develop and maintain three fundamental and documented processes for fatigue hazard identification:

Predictive

2.1.1.1 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:

- a) operator or industry operational experience and data collected on similar types of operations;
- b) evidence-based scheduling practices; and
- c) bio-mathematical models.

Proactive

2.1.1.2 The proactive process shall identify fatigue hazards within current flight operations. Methods of examination may include, but are not limited to:

- a) self-reporting of fatigue risks;
- b) crew fatigue surveys;
- c) relevant flight and cabin crew performance data;
- d) available safety databases and scientific studies; and
- e) analysis of planned versus actual time worked.

Reactive

2.1.1.3 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:

- a) fatigue reports;
- b) confidential reports;
- c) audit reports;
- d) incidents; and
- e) flight data analysis events.

2.2 Risk assessment

2.2.1 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.

2.2.2 The risk assessment procedures shall review identified hazards and link them to:

- a) operational processes;
- b) their probability;
- c) possible consequences; and
- d) the effectiveness of existing safety barriers and controls.

2.3 Risk mitigation

The operator shall develop and implement risk mitigation procedures that:

- a) select the appropriate mitigation strategies;
- b) implement the mitigation strategies; and
- c) monitor the strategies' implementation and effectiveness.

3. FRMS SAFETY ASSURANCE PROCESSES

The operator shall develop and maintain FRMS safety assurance processes to:

- a) 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;
- b) 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
- c) 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:

- a) 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
- b) 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

1.1 An operations manual, which may be issued in separate parts corresponding to specific aspects of operations, provided in accordance with Section II, Section 10 shall be organized with the following contents and structure:

- a) general;
- b) aircraft operating information;
- c) routes and aerodromes; and
- d) training.

2. CONTENTS

The operations manual referred to in 1.1 shall contain at the least the following:

2.1 General

- 2.1.1 Instructions outlining the responsibilities of operations personnel pertaining to the conduct of flight operations.
- 2.1.2 Information and policy relating to fatigue management including:
 - a) 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 15; and
 - b) where applicable, policy and documentation pertaining to the operator's FRMS, in accordance with Part II (Air Operator Certificate) Subpart 10.
- 2.1.3 A list of the navigation equipment to be carried, including any requirements relating to operations where performance-based navigation is prescribed.
- 2.1.4 The circumstances in which a radio listening watch is to be maintained.
- 2.1.5 The method for determining minimum flight altitudes.
- 2.1.6 The methods for determining heliport operating minima.
- 2.1.7 Safety precautions during refuelling with passengers on board.
- 2.1.8 Ground handling arrangements and procedures.
- 2.1.9 Procedures, as prescribed in Civil Aviation (Search and Rescue) Regulations, for pilots-in-command observing an accident.
- 2.1.10 The flight crew for each type of operation including the designation of the succession of command.
- 2.1.11 Specific instructions for the computation of the quantities of fuel and oil to be carried, having regard to all circumstances of the operation including the possibility of loss of pressurization and the failure of one or more engines while en-route.

- 2.1.12 The conditions under which oxygen shall be used and the amount of oxygen determined in accordance with Section 31.
- 2.1.13 Instructions for mass and balance control.
- 2.1.14 Instructions for the conduct and control of ground de-icing/anti-icing operations.
- 2.1.15 The specifications for the operational flight plan.
- 2.1.16 Standard operating procedures (SOP) for each phase of flight.
- 2.1.17 Instructions on the use of normal checklists and the timing of their use.
- 2.1.18 Departure contingency procedures.
- 2.1.19 Instructions on the maintenance of altitude awareness.
- 2.1.20 Instructions on the clarification and acceptance of ATC clearances, particularly where terrain clearance is involved.
- 2.1.21 Departure and approach briefings.
- 2.1.22 Route and destination familiarization.
- 2.1.23 Conditions required to commence or to continue an instrument approach.
- 2.1.24 Instructions for the conduct of precision and non-precision instrument approach procedures.
- 2.1.25 Allocation of flight crew duties and procedures for the management of crew workload during night and IMC instrument approach operations.
- 2.1.26 Information and instructions relating to the interception of civil aircraft including:
- procedures, as prescribed in Civil Aviation (Rules of the Air) Regulations, for pilots-in-command of intercepted aircraft; and
 - visual signals for use by intercepting and intercepted aircraft, as contained in Civil Aviation (Rules of the Air) Regulations.
- 2.1.27 Details of the safety management system (SMS) provided in accordance with Civil Aviation SMS) Regulations.
- 2.1.28 Information and instructions on the carriage of dangerous goods, including action to be taken in the event of an emergency.
- Note.— Guidance material on the development of policies and procedures for dealing with dangerous goods incidents on board aircraft is contained in Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (Doc 9481).*
- 2.1.29 Security instructions and guidance.
- 2.1.30 The search procedure checklist provided in accordance with Section 119.
- 2.1.31 Instructions and training requirements for the use of head-up displays (HUD) or enhanced vision systems (EVS) equipment as applicable.
- 2.1.32 Instructions and training requirements for the use of the EFB, as applicable.
- 2.2 Aircraft operating information**
- 2.2.1 Certification limitations and operating limitations.
- 2.2.2 The normal, abnormal and emergency procedures to be used by the flight crew and the checklists relating thereto as required by Section 56.
- 2.2.3 Flight planning data for pre-flight and in-flight planning with different thrust/power and speed settings.
- 2.2.4 Instructions and data for mass and balance calculations.
- 2.2.5 Instructions for aircraft loading and securing of load.
- 2.2.6 Aircraft systems, associated controls and instructions for their use, as required by Section 56.
- 2.2.7 The minimum equipment list for the helicopter types operated and specific operations authorized, including any requirements relating to operations where performance-based navigation is prescribed.
- 2.2.8 Checklist of emergency and safety equipment and instructions for its use.
- 2.2.9 Emergency evacuation procedures, including type-specific procedures, crew coordination, assignment of crew's emergency positions and the emergency duties assigned to each crew member.
- 2.2.10 The normal, abnormal and emergency procedures to be used by the cabin crew, the checklists relating thereto and aircraft systems information as required, including a statement related to the necessary procedures for the coordination between flight and cabin crew.
- 2.2.11 Survival and emergency equipment for different routes and the necessary procedures to verify its normal functioning before take-off, including procedures to determine the required amount of oxygen and the quantity available.
- 2.2.12 The ground-air visual signal code for use by survivors, as contained in Civil Aviation (Search and Rescue) Regulations.

2.3 Routes, aerodromes and heliports

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

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

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

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

2.3.5 Instructions for the use of aerodrome operating minima for instrument approaches applicable to the use of HUD and EVS.

2.4 Training

2.4.1 Details of the flight crew training programme and requirements, as required by Section 63.

2.4.2 Details of the cabin crew duties training programme as required by Section 118.

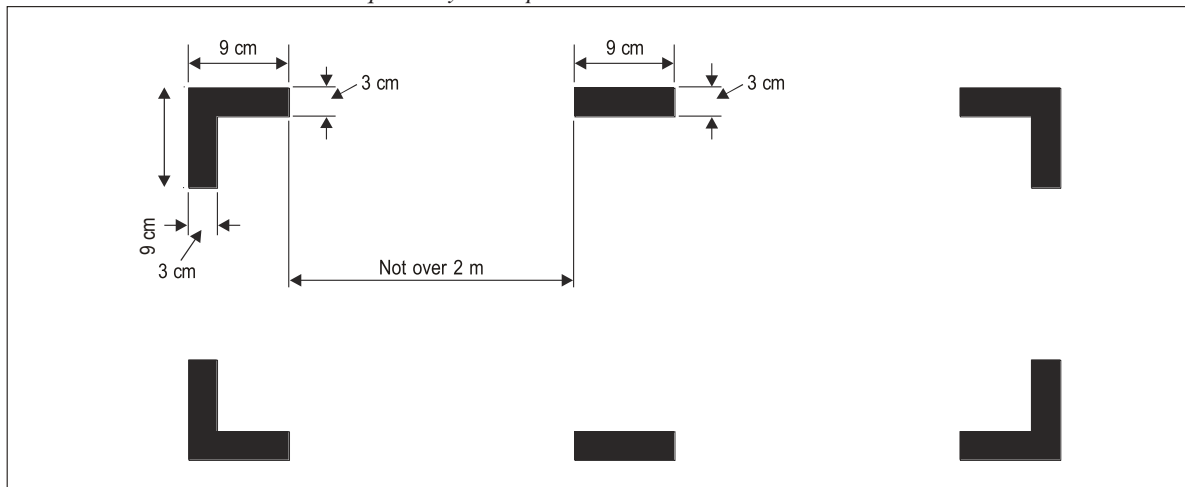
2.4.3 Details of the flight operations officer/flight dispatcher training programme when employed in conjunction with a method of flight supervision in accordance with Section 1

NINTH SCHEDULE

MARKING OF BREAK-IN POINTS

- 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 area



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**PART V
CIVIL AVIATION (OPERATION OF AIRCRAFT - GENERAL AVIATION (AEROPLANES)
ARRANGEMENT OF SECTIONS**

Sections

**SUB PART I
PRELIMINARY PROVISIONS**

1. Title
2. Application

**SUB PART II
GENERAL**

3. Compliance with laws, regulations and procedures
4. Dangerous goods
5. Use of psychoactive substances
6. Specific approval

**SUB PART III
FLIGHT OPERATIONS**

7. Operating facilities
8. Operational management instructions – General
9. Aerodrome Operating Minimum
10. Passengers
11. Flight Preparation
12. Flight Planning
13. Meteorological conditions-VFR Flights
14. Meteorological conditions-IFR Flights
15. Flight in Known Icing Conditions
16. Destination Alternate Aerodromes
17. Fuel and Oil Requirements
18. Refuelling with passengers on board
19. Oxygen Supply
20. In Flight Procedures; Aerodrome Operating Minima
21. Meteorological and operational observations by pilots
22. Hazardous Flight Conditions
23. Aeroplane operating procedures for landing performance
24. Flight Crew members at duty stations, seat belts and safety harnesses
25. Use of Oxygen
26. Safeguarding of cabin crew and passengers in pressurized aircraft
27. In flight fuel management
28. Instrument Approach Procedures
29. Duties of Pilot in Command
30. Cabin baggage-Take-off and Landing

**SUB PART IV
AEROPLANE PERFORMANCE OPERATING LIMITATIONS**

31. General

**SUB PART V
AEROPLANE PERFORMANCE OPERATING LIMITATIONS**

32. General
33. Aeroplanes on all flights
34. Marking of break-in points
35. All aeroplanes on all flights

36. Aeroplanes on flights over water
37. Seaplanes
38. Landplanes- Single-engined landplanes
39. Aeroplanes on extended flights over water
40. Aeroplanes on flights over designated land areas
41. Aeroplanes on high altitude flights
42. All aeroplanes operated in accordance with the instrument flight rules
43. Aeroplanes when operated at night
44. Aeroplanes complying with the noise certification Standards in Annex 16, Volume I
45. Mach number indicator
46. Aeroplanes required to be equipped with ground proximity warning systems (GPWS)
47. Emergency locator transmitter (ELT)
48. Aeroplanes required to be equipped with a pressure-altitude reporting transponder
49. Microphones
50. Aeroplanes equipped with automatic landing systems, a head-up display (HUD) or equivalent displays, enhanced vision systems (EVS), synthetic vision systems (SVS) and/or combined vision systems (CVS)
51. Flight recorders
52. Flight data recorders and aircraft data recording systems
53. Cockpit voice recorders and cockpit audio recording systems
54. Data link recorders
55. Flight recorders — Construction and installation
56. Flight recorders — Operation
57. Flight recorder records
58. Continued serviceability
59. Flight recorder electronic documentation
60. Electronic flight bags (EFBs)-EFB equipment
61. EFB Functions
62. EFB Specific Approval
63. Aeroplane operated under an Article 83 bis agreement

SUB PART VI

AEROPLANE COMMUNICATION, NAVIGATION AND SURVEILLANCE EQUIPMENT

64. Communication equipment
65. Navigation equipment
66. Surveillance equipment

SUB PART VII AEROPLANE CONTINUING AIRWORTHINESS

67. Interpretation
68. Owner's continuing airworthiness responsibilities
69. Continuing Airworthiness Records;
70. Modifications and Repairs
71. Maintenance release

SUB PART VIII AEROPLANE FLIGHT CREW

72. Composition of Flight Crew

74. Pilot proficiency checks

**SUB PART IX
MANUALS, LOGS AND RECORDS**

75. Flight manual
76. Journey Logbook
77. Records of emergency and survival equipment carried

**SUB PART X
SECURITY**

78. Security of Aircraft
79. Reporting acts of unlawful interference

SCHEDULES

First Schedule Penalties
Second Schedule- General Aviation Specific Approvals
Marking of breaking Points

**SUB PART I
PRELIMINARY PROVISIONS**

Titlle

1. These regulations may be cited as Operation of Aircraft – General Aviation (Aeroplanes).

Application

2. These regulations shall be applicable to all operations of aircraft engaged in general aviation.

**SUB PART II
GENERAL**

Compliance with laws, regulations and procedures

3. (1) A pilot in command of an aircraft to which these regulations applies shall comply with the laws, regulations and procedures of any other States in which operations are conducted.

(2) A pilot in Command shall be familiar with the laws, regulations and procedures, pertinent to the performance of his or her duties, prescribed for the areas to be traversed, the aerodromes to be used and the air navigation facilities relating thereto.

(3) The Pilot in Command shall ensure that other members of the flight crew are familiar with such laws, regulations and procedures as are pertinent to the performance of their respective duties in the operation of the aircraft.

(4) The Pilot in Command shall have responsibility for operational control.

(5) Where an emergency situation which endangers the safety or security of the aircraft or persons necessitates the taking of action which involves a violation of local regulations or procedures, the pilot-in-command shall notify the appropriate local authority without delay.

(6) Where 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 Authority.

(7) The report referred to in sub regulation (6) shall be submitted to the State in which the incident occurs and the Authority as soon as possible within ten days.

(8) The pilot-in-command shall have available on board the aircraft the essential information concerning the search and rescue services in the area over which the aeroplane will be flown.

(9) The pilot-in-command shall ensure that flight crew members demonstrate the ability to speak and understand the English language used for aeronautical radiotelephony communications as specified in Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019.

Dangerous goods.

4. Provisions for carriage of Dangerous Goods are contained in Civil Aviation (Dangerous Goods) Regulations, statutory instrument 51 of 2018.

Use of Psychoactive Substances

5. Provisions concerning the use of psychoactive substances are contained in Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019 and Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018.

Specific Approval

6. (1) No pilot-in-command shall conduct operations for which a specific approval is required unless such approval has been issued by the Authority.

(2) Specific approvals referred to in subsection (1) shall follow the layout and contain at least the information listed in the First Schedule.

SUB PART III
FLIGHT OPERATIONS

Operating Facilities

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

(2) The pilot-in-command, in making a decision on the adequacy of facilities and services available at an aerodrome of intended operation, should assess the level of safety risk associated with the aircraft type and nature of the operation, in relation to the availability of rescue and firefighting services (RFFS).

Operational management-operating instructions -general

8. (1) No person shall taxi an aeroplane on the movement area of an aerodrome unless the person is a qualified pilot or the person—

- (a) has been duly authorised by the operator or a designated agent;
- (b) is fully competent to taxi the aeroplane;
- (c) is qualified to use the radiotelephone; and
- (d) has received instruction from a competent person in respect of aerodrome layout, routes, signs, markings, lights, air traffic control (ATC) signals and instructions, phraseology and procedures, and is able to conform to the operational standards required for safe aeroplane movement at the aerodrome.

Aerodrome Operating Minima

9. (1) A pilot- in-command shall establish aerodrome operating minima in accordance with criteria specified by the Authority in the aeronautical information publications, for each aerodrome to be used in operations.

(2) When establishing aerodrome operating minima, any conditions that may be prescribed in the list of specific approvals shall be observed.

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

(4) The Authority shall authorise operational credits for operations with advanced aircraft.

(5) Where the operational credit relates to low visibility operations, the Authority shall issue a specific approval.

(6) The authorizations specified in subsection (4) shall not affect the classification of the instrument approach procedure.

(7) For the purpose of this regulation “Operational credit” includes—

- (a) for the purposes of an approach ban or dispatch considerations, a minimum below the aerodrome operating minima;
- (b) reducing or satisfying the visibility requirements; or
- (c) requiring fewer ground facilities as compensated for by airborne capabilities.

- (8) When issuing a specific approval for the operational credit, the State of the operator 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 is more than one;
 - (c) Operator has carried out a safety risk assessment of the operations supported by the equipment
 - (d) Operator has established and documented normal and abnormal procedures and MEL;
 - (e) Operator has established a training program for the flight crew members and relevant personnel involved in the flight preparations;
 - (f) Operator has established a system for data collection, evaluation and trained monitoring for low visibility operations for which there is an operational credit; and
 - (g) operator has instituted appropriate procedures in respect of continuing airworthiness (maintenance and repair) practices and programmes.
- (9) 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.
- (10) 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—
- (a) Type A- a minimum descent height or decision height at or above 75 m (250 ft); and
 - (b) Type B- a decision height below 75 m (250 ft), where Type B instrument approach operations are categorised as follows:
 - (i) 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;
 - (ii) 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;
 - (iii) 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.
- (11) 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.
- (12) 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.
- (13) The Authority shall issue a specific approval for instrument approach operations in low visibility which shall only be conducted when RVR information is provided.
- (14) For take-off in low visibility, the Authority shall issue a specific approval for the minimum take-off RVR.

Passengers

10. (1) The pilot-in-command shall ensure that passengers are made familiar with the location and use of—
- (a) seat belts
 - (b) emergency exits;
 - (c) life jackets, if the carriage of life jackets is prescribed
 - (d) oxygen dispensing equipment where the use of oxygen is anticipated; and
 - (e) other emergency equipment provided for individual use, including passenger emergency briefing cards.
- (2) 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.
- (3) In an emergency during flight, the pilot-in-command shall ensure that passengers are instructed in such emergency action as may be appropriate to the circumstances.
- (4) The pilot-in-command shall ensure that, during take-off and landing and whenever considered necessary by reason of turbulence or any emergency occurring during flight, all passengers on board an aircraft are secured in their seats by means of the seat belts or harnesses provided.

Flight Preparation

11. (1) No PIC shall commence a flight until the flight preparation forms have been completed certifying that the PIC is satisfied that—

- (a) the aeroplane is airworthy, duly registered and that appropriate certificates with respect thereto are onboard;
- (b) the instruments and equipment prescribed installed in the aeroplane are appropriate, taking into account the expected flight conditions;
- (c) any necessary maintenance has been performed in accordance with these regulations;
- (d) the mass of the aeroplane and centre of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;
- (e) any load carried is properly distributed and safely secured; and
- (f) the aeroplane operating limitations, contained in the flight manual, or its equivalent, will not be exceeded.

(2) The PIC shall have sufficient information on climb performance with all engines operating to enable determination of the climb gradient that can be achieved during the departure phase for the existing take-off conditions and intended take-off technique.

Flight Planning

12. (1) The PIC shall be familiar with all available meteorological information appropriate to the intended flight before commencing a flight.

(2) Preparation for a flight away from the vicinity of the place of departure, and for every flight under the instrument flight rules, shall include—

- (a) a study of available current weather reports and forecasts; and
- (b) 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.

Meteorological conditions-VFR Flights

13. No PIC shall commence a VFR flight 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.

Meteorological conditions-IFR Flights

14. (1) For a flight to be conducted in accordance with the instrument flight rules the PIC shall not—

- (a) take off from the departure aerodrome unless the meteorological conditions, at the time of use, are at or above the aerodrome operating minima for that operation; and
- (b) take off or continue beyond the point of in-flight re-planning unless at the aerodrome of intended landing or at each alternate aerodrome to be selected in compliance with section 16, and the current meteorological reports or a combination of current reports and forecasts indicate that the meteorological conditions will be, at the estimated time of use, at or above the aerodrome operating minima for that operation.

(2) A PIC shall comply with criteria for use of the estimated time of an aerodrome including a margin of time specified by Authority in the aeronautical information publications.

Flight in Known Icing Conditions

15.(1) No PIC shall commence a flight operation into known or expected icing conditions unless the aeroplane 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 take off unless the aircraft has been inspected for icing and, where necessary, has been given appropriate de-icing or anti-icing treatment.

(3) A PIC shall ensure that accumulation of ice or other naturally occurring contaminants shall be removed so that the aircraft is kept in an airworthy condition prior to take-off.

Destination alternate aerodromes

16. (1) For a flight to be conducted in accordance with the instrument flight rules, the PIC shall select and specify in the flight plan at least one destination alternate aerodrome, unless—

- (a) the duration of the flight from the departure aerodrome, or from the point of in-flight re-planning to the destination aerodrome is such that, taking into account all meteorological conditions and operational information relevant to the flight, at the estimated time of use, a reasonable certainty exists that—
 - (i) the approach and landing may be made under visual meteorological conditions; and
 - (ii) separate runways are usable at the estimated time of use of the destination aerodrome with at least one runway having an operational instrument approach procedure; or
- (b) the aerodrome of intended landing is isolated and—
 - (i) a standard instrument approach procedure is prescribed for the aerodrome of intended landing;
 - (ii) a point of no return has been determined; and
 - (iii) a flight shall not continue past the point of no return unless available current meteorological information indicates that the following meteorological conditions will exist at the estimated time of use—
 - A. cloud base of at least 300 m (1 000 ft) above the minimum associated with the instrument approach procedure; and
 - B. visibility of at least 5.5 km (3 NM) or of 4 km (2 NM) more than the minimum associated with the instrument approach procedure.

Fuel and Oil Requirements

17. (1) A PIC shall not commence a flight unless, taking into account both the meteorological conditions and any delays that are expected in flight, the aircraft carries sufficient fuel and oil to ensure that it can safely complete the flight.

- (2) The amount of fuel to be carried must permit—
 - (a) when the flight is conducted in accordance with the instrument flight rules and a destination alternate aerodrome is not required in accordance with section 16, or when the flight is to an isolated aerodrome, flight to the aerodrome of intended landing, and after that, have a final reserve fuel for at least 45 minutes at normal cruising altitude; or
 - (b) when the flight is conducted in accordance with the instrument flight rules and a destination alternate aerodrome is required, flight to the aerodrome of intended landing, then to an alternate aerodrome, and after that, have a final reserve fuel for at least 45 minutes at normal cruising altitude; or
 - (c) when the flight is conducted in accordance with day VFR, flight to the aerodrome of intended landing, and after that, have a final reserve fuel for at least 30 minutes at normal cruising altitude; or
 - (d) when the flight is conducted in accordance with night VFR, flight to the aerodrome of intended landing and thereafter have a final reserve fuel for at least 45 minutes at normal cruising altitude.
- (3) 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.

Refuelling with passengers on board

18. (1) No person shall refuel an aeroplane when passengers are embarking, on board or disembarking unless the aeroplane is properly attended to by qualified personnel ready to initiate and direct an evacuation of the aeroplane by the most practical and expeditious means available.

(2) When refuelling with passengers embarking, on board or disembarking, two-way communication shall be maintained by the aeroplane's inter-communication system or other suitable means between the ground crew supervising the refuelling and the pilot in command or other qualified personnel on board the aeroplane.

(3) Every person shall observe additional precautions required when refuelling with fuels other than aviation kerosene or when refuelling results in a mixture of aviation kerosene with other aviation turbine fuels, or when an open line is used.

Oxygen supply

19. (1) The PIC shall ensure that breathing oxygen is available to crew members and passengers in sufficient quantities for all flights at such altitudes where a lack of oxygen might result in impairment of the faculties of crew members or harmfully affect passengers.

(2) Approximate altitudes in the Standard Atmosphere corresponding to the values of absolute pressure shall be as follows—

Absolute pressure	Metres	Feet
700 hPa	3000	10 000
620 hPa	4000	13 000
376 hPa	7600	25 000

In Flight Procedures-Aerodrome Operating Minima.

20.(1) A PIC shall not continue towards the aerodrome of intended landing, unless the latest available information indicates that at the expected time of arrival, a landing can be effected at that aerodrome or at least one destination alternate aerodrome, in compliance with the operating minima established in [section 9](#).

(2) An instrument approach shall not continue below 300m (1000ft) above the aerodrome elevation or into the final approach segment unless the reported visibility or controlling RVR is at or above the aerodrome operating minima.

(3) After entering the final approach segment or after descending below 300 m or 1 000 f above the aerodrome elevation, and where the reported visibility or controlling RVR falls below the specified minimum, the approach may be continued to DA/H or MDA / H.

(4) An aircraft shall not continue its approach-to-land beyond a point at which the limits of the aerodrome operating minima would be infringed.

Meteorological and operational observations by pilots

21. (1) When meteorological conditions likely to affect the safety of other aircraft are encountered, the PIC shall report the weather condition as soon as possible.

(2) The PIC shall report runway braking action when the runway braking action encountered is not as good as reported

Hazardous flight conditions

22. (1) The PIC shall report to the appropriate aeronautical station, hazardous flight conditions encountered other than those associated with meteorological conditions as soon as possible.

(2) The reports specified in subsection (1) shall give such details as may be pertinent to the safety of other aircraft.

Aeroplane operating procedures for landing performance

23. The PIC shall not continue an approach to land below 300 m (1 000 ft) above aerodrome elevation unless he or she is satisfied that, with the runway surface condition information available, the aeroplane performance information indicates that a safe landing can be made.

Flight crew members at duty stations, seat belts and safety harnesses

24. (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 aircraft 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 whilst all other flight crew members shall keep their safety harnesses 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.

Use of Oxygen

25. All flight crew members, when engaged in performing duties essential to the safe operation of an aeroplane in flight, shall use breathing oxygen continuously whenever the circumstances prevail for which its supply has been prescribed in section 21 of these regulations.

Safeguarding of cabin crew and passengers in pressurized aeroplanes in the event of loss of pressurisation

26. 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.

In-flight fuel management

27. (1) The pilot-in-command shall monitor the amount of usable fuel remaining on board is not less than the fuel required to proceed to an aerodrome 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 aerodrome, the pilot calculates that any change to the existing clearance to that aerodrome may result in landing with less than the planned final reserve fuel. The declaration of MINIMUM FUEL informs ATC that all planned aerodrome options have been reduced to a specific aerodrome of intended landing and any change to the existing clearance may result in landing with less than the planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.

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

Instrument approach procedures

28. (1) The Authority shall approve and publish one or more instrument approach procedures designed to support instrument approach operations to serve each instrument runway or aerodrome utilised for instrument flight operations.

(2) The PIC operating aircraft in accordance with the instrument flight rules shall comply with the instrument approach procedures approved by the State in which the aerodrome is located.

Duties of Pilot in Command

29. (1) The PIC shall be responsible for the operation, safety and security of the aeroplane and the safety of all crew members, passengers and cargo on board.

(2) The PIC shall be responsible for ensuring that a flight—

- (a) will not be commenced when any flight crew member is incapacitated from performing duties by any cause such as injury, sickness, fatigue, the effects of any psychoactive substance; and
- (b) will not be continued beyond the nearest suitable aerodrome 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.

(3) The PIC shall be responsible for notifying the nearest appropriate Authority by the quickest available means of any accident involving the aeroplane, resulting in serious injury or death of any person or substantial damage to the aircraft or property.

Cabin baggage-Take-off and Landing

30. The PIC shall ensure that all baggage carried onto an aeroplane and taken into the passenger cabin is securely stowed.

SUB PART IV
AEROPLANE PERFORMANCE OPERATING LIMITATIONS

General

31. (1) The PIC shall operate an aeroplane—
- (a) in compliance with the terms of its airworthiness certificate or equivalent documents;
 - (b) within the operating limitations prescribed by the Authority; and
 - (c) where applicable, within the mass limitations imposed by compliance with the applicable noise certificate requirements specified by the Authority, unless otherwise authorised in exceptional circumstances for a certain aerodrome or a runway where there is no noise disturbance problem, by the competent authority of the State in which the aerodrome is situated.
- (2) Placards, listings, instrument markings, or combinations thereof, containing those operating limitations prescribed by the Authority for visual presentation, shall be displayed in the aeroplane.
- (3) The pilot-in-command shall determine that aeroplane performance will permit the take-off and departure to be carried out safely.

SUB PART V
AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

General

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

Aeroplanes on all flights

33. (1) An aeroplane shall be equipped with instruments which will enable the flight crew to—
- (a) control the flight path of the aeroplane;
 - (b) carry out any required procedural manoeuvres; and
 - (c) observe the operating limitations of the aeroplane in the expected operating conditions.
- (2) An aeroplane shall be equipped with or carry onboard—
- (a) an accessible first-aid kit;
 - (b) portable fire extinguishers of a type which, when discharged, will not cause dangerous contamination of the air within the aeroplane. At least one shall be located in—
 - (i) the pilot's compartment; and
 - (ii) 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 over an age to be determined by the State of Registry; and
 - (d) a seat belt for each seat and restraining belts for each berth;
 - (e) the following manuals, charts and information—
 - (i) the flight manual or other documents or information concerning any operating limitations prescribed for the aeroplane by the certifying authority of the State of Registry in section 33;
 - (ii) any specific approval issued by the State of Registry, if applicable, for the operation(s) to be conducted;
 - (iii) current and suitable charts for the route of the proposed flight and all routes along which it is reasonable to expect that the flight may be diverted;

- (iv) procedures, as prescribed in Civil Aviation (Rules of the Air) Regulations, for pilots-in-command of intercepted aircraft;
 - (v) visual signals for use by intercepting and intercepted aircraft, as contained in Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018; and
 - (vi) the journey log book for the aeroplane;
- (f) where the aeroplane is fitted with fuses that are accessible in flight, spare electrical fuses of appropriate ratings for replacement of those fuses.

(3) Any agent used in a built-in fire extinguisher for each lavatory disposal receptacle for towels, paper or waste in an aeroplane for which the individual certificate of airworthiness is first issued on or after 31 December 2011 and any extinguishing agent used in a portable fire extinguisher in an aeroplane 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 Layer*, Annex A, Group II.

(4) The PIC shall ensure that an aeroplane on all flights is equipped with the ground-air signal codes for search and rescue purposes.

(5) The PIC shall ensure that an aeroplane on all flights is equipped with a safety harness for each flight crew member seat of which the safety harness includes shoulder straps and a seat belt which may be used independently

Marking of break-in points

34.(1) Where areas of the fuselage suitable for break-in by rescue crews in an emergency are marked on an aeroplane, such areas shall be marked as in the Second Schedule, and the colour of the markings shall be red or yellow and, if necessary, they shall be outlined in white contrast with the background.

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

All aeroplanes operated as VFR flights

35. (1) The PIC shall ensure that an aeroplane when operated as VFR flight shall be—

- (a) equipped with a means of measuring and displaying:
 - (i) magnetic heading;
 - (ii) barometric altitude;
 - (iii) indicated airspeed;
- (b) equipped with, or shall carry, a means of measuring and displaying time in hours, minutes and seconds; and
- (c) (c)equipped with such additional equipment as may be prescribed by the appropriate authority.

(2) VFR flights which are operated as controlled flights should be equipped in accordance with section 48.

Aeroplanes on flights over water

Seaplanes

37. (1) Seaplanes for all flights shall be equipped with—

- (a) one life jacket, or equivalent individual floatation device, for each person on board, stowed in a position readily accessible from the seat or berth;
- (b) equipment for making the sound signals prescribed in the *International Regulations for Preventing Collisions at Sea*, where applicable;
- (c) one anchor; and
- (d) one sea anchor (drogue), when necessary to assist in manoeuvring.

Landplanes- Single-engined landplanes

38. (1) All single-engined landplanes—

- (a) when flying en-route over water beyond gliding distance from the shore; or
- (b) when taking off or landing at an aerodrome where, in the opinion of the pilot-in-command, the take-off or approach path is so disposed over water that in the event of a mishap there would be a likelihood of a ditching;
- (c) should carry one life jacket or equivalent individual floatation 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.

Aeroplanes on extended flights over water

39. (1) The PIC shall ensure that an aeroplane operated on extended flights over water is equipped with, at a minimum, one life jacket or equivalent individual floatation 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.

(2) The PIC of an aeroplane operated on an extended flight over water shall determine the risks to survival of the occupants of the aeroplane in the event of a ditching.

(3) The PIC shall take into account the operating environment and conditions such as, but not limited to, sea state and sea and air temperatures, the distance from land suitable for making an emergency landing, and the availability of search and rescue facilities.

(4) Based upon the assessment of these risks, the PIC shall, in addition to the equipment required in (1), ensure that the aeroplane is equipped with—

- (a) 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
- (b) equipment for making the distress signals described in Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018.

Aeroplanes on flights over designated land areas

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

Aeroplanes on high altitude flights

41. (1) The PIC shall ensure that an aeroplane intended to be operated at high altitudes is equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the oxygen supplies required in section 21.

(2) Pressurised aeroplanes intended to be operated at flight altitudes at which the atmospheric pressure is less than 376 hPa shall be equipped with a device to provide positive warning to the flight crew of any dangerous loss of pressurisation.

All aeroplanes operated in accordance with the instrument flight rules

42. The PIC shall ensure that an aeroplane when operated in accordance with the instrument flight rules, or when the aeroplane cannot be maintained in a desired attitude without reference to one or more flight instruments is—

- (a) equipped with a means of measuring and displaying—
 - (i) magnetic heading (standby compass);
 - (ii) barometric altitude;
 - (iii) indicated airspeed, with a means of preventing malfunctioning due to either condensation or icing;
 - (iv) turn and slip;
 - (v) aircraft attitude;
 - (vi) stabilized aircraft heading; The requirements of 4), 5) and 6) may be met by combinations of instruments or by integrated flight director systems provided that the safeguards against total failure, inherent in the three separate instruments, are retained.
 - (vii) whether the supply of power to the gyroscopic instruments is adequate;
 - (viii) the outside air temperature;

- (ix) rate-of-climb and descent;
- (b) equipped with, or shall carry, a means of measuring and displaying time in hours, minutes and seconds; and
- (c) equipped with such additional instruments or equipment as may be prescribed by the appropriate authority.

Aeroplanes when operated at night

43. (1) Aeroplanes, when operated at night, shall be equipped with—
- (a) the equipment specified in section 48 ; and
 - (b) the lights required by Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018 for aircraft in flight or operating on the movement area of an aerodrome;
 - (c) a landing light;
 - (d) illumination for all flight instruments and equipment that are essential for the safe operation of the aeroplane that are used by the flight crew;
 - (e) lights in all passenger compartments; and
 - (f) an independent portable light for each crew member station.

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

44. An aeroplane shall carry a document attesting noise certification which may be contained in any document carried onboard and approved by the State of Registry.

Mach number indicator

45. Aeroplanes with speed limitations expressed in terms of Mach number shall be equipped with a means of displaying Mach number.

Aeroplanes required to be equipped with ground proximity warning systems (GPWS)

46. (1) All turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg or authorised to carry more than nine passengers shall be equipped with a ground proximity warning system which has a forward-looking terrain avoidance function.

(2) All turbine-engined aeroplanes of a maximum certificated take-off mass of 5 700 kg or less and authorized to carry more than five but not more than nine passengers should be equipped with a ground proximity warning system which has a forward-looking terrain avoidance function.

(3) All piston-engined aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg or authorized to carry more than nine passengers should be equipped with a ground proximity warning system which has a forward-looking terrain avoidance function.

(4) A ground proximity warning system shall provide automatically a timely and distinctive warning to the flight crew when the aeroplane is in potentially hazardous proximity to the earth's surface.

(5) A ground proximity warning system shall provide, at a minimum, warnings of at least the following circumstances—

- (a) excessive descent rate;
- (b) excessive altitude loss after take-off or go-around; and
- (c) unsafe terrain clearance.

(6) A ground proximity warning system should provide, as a minimum, warnings of at least the following circumstances—

- (a) excessive descent rate;
- (b) excessive terrain closure rate;
- (c) excessive altitude loss after take-off or go-around;
- (d) unsafe terrain clearance while not in landing configuration—
 - (i) gear not locked down;
 - (ii) flaps not in a landing position; and

(e) excessive descent below the instrument glide path.

(7) A ground proximity warning system installed in turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg or authorised to carry more than nine passengers for which the individual certificate of airworthiness was first issued after 1 January 2011 shall provide, as a minimum, warnings of at least the following circumstances—

- (a) excessive descent rate;
- (b) excessive terrain closure rate;
- (c) excessive altitude loss after take-off or go-around;
- (d) *unsa*
- (e) *fe* terrain clearance while not in landing configuration;
 - (i) gear not locked down;
 - (ii) flaps not in a landing position; and
- (f) excessive descent below the instrument glide path.

Emergency locator transmitter (ELT)

47. (1) All aeroplanes operated under this Sub Part shall carry an automatic ELT;

(2) The ELT equipment carried to satisfy the requirements of subsection (1) shall operate in accordance with the relevant provisions of the Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019.

aeroplanes required to be equipped with a pressure-altitude reporting transponder

48. (1) All aeroplanes operated under these regulations shall be equipped with a pressure-altitude reporting transponder which operates in accordance with the relevant provisions of Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019.

(2) Unless exempted by the Authority, aeroplanes operating as VFR flights shall be equipped with a pressure-altitude reporting transponder which operates in accordance with the relevant provisions of Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019.

Microphones

49. When operating under the instrument flight rules all flight crew members required to be on flight deck duty should communicate through boom or throat microphones below the transition level/altitude

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

50. Notwithstanding Section 11(4) to (9) where aeroplanes are equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, or any combination of those systems into a hybrid system, criteria for the use of such systems for the safe operation of an aeroplane shall be established by the Authority.

Flight recorders

51. (1) Aircraft to which the crash protected flight recorders are used, the Crash-protected flight recorders comprise one or more of the following—

- (a) a flight data recorder (FDR);
- (b) a cockpit voice recorder (CVR);
- (c) an airborne image recorder (AIR);
- (d) a data link recorder (DLR);

and the image and data link information may be recorded on either the CVR or the FDR (As per Appendix 2.3).

(2) Aircraft in which lightweight recorders are used, lightweight flight recorders comprise one or more of the following—

- (a) an aircraft data recording system (ADRS);

- (b) a cockpit audio recording system (CARS);
- (c) an airborne image recording system (AIRS);
- (d) a data link recording system (DLRS).

and image and data link information may be recorded on either the CARS or the ADRS.

Flight data recorders and aircraft data recording systems

52. (1) All aeroplanes of a maximum certificated take-off mass of over 5 700 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 82 parameters as listed in Table A2.3-1 of Schedule 3 to these regulations.

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

(3) All FDRs shall retain the information recorded during at least the last 25 hours of their operation.

Cockpit voice recorders and cockpit audio recording systems

53. (1) The PIC shall ensure that a turbine-engined aeroplane with a seating configuration of more than five passenger seats and a maximum certificated take-off mass of 5 700 kg or less for which the individual certificate of airworthiness is first issued on or after 1 January 2016 and required to be operated by more than one pilot shall be equipped with either a CVR or a CARS.

(2) Recording technology -CVRs and CARS shall not use magnetic tape or wire.

(3) The PIC shall ensure that all CVRs shall retain the information recorded during at least the last 2 hours of their operation.

(4) The PIC shall ensure that an aeroplane that are required to be equipped with CARS, and for which the individual certificate of airworthiness is first issued on or after 1 January 2025, shall be equipped with a CARS which shall retain the information recorded during at least the last two hours of their operation.

Data link recorders

54. (1) The PIC shall ensure that an aeroplane for which the individual certificate of airworthiness is first issued on or after 1 January 2016, which use any of the data link communications applications referred to in the Third Schedule and are required to carry a CVR, shall record the data link communications messages on a crash-protected flight recorder.

(2) The PIC shall ensure that an aeroplane for which the individual certificate of airworthiness was first issued before 1 January 2016, that are required to carry a CVR and are modified on or after 1 January 2016 to use any of the data link communications applications referred to in the Third Schedule (Flight Recorders) should record the data link communications messages on a crash-protected flight recorder.

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

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

Flight recorders — Construction and installation

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

Flight recorders — Operation

56. (1) No person shall switch off any flight recorder during flight time.

(2) To preserve flight recorder records, The PIC shall ensure that flight recorders are deactivated upon completion of flight time following an accident or incident. The flight recorders shall not be reactivated before their disposition as determined in accordance with the Civil Aviation (Aircraft Accident and Incident Investigation) Regulation.

Flight recorder records

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

Continued serviceability

58. The owner or operator shall conduct operational checks and evaluations of recordings from the flight recorder systems to ensure the continued serviceability of the recorders.

Flight recorder electronic documentation

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

Electronic flight bags (EFBs)-EFB equipment

60. (1) Where portable EFBs are used on board an aeroplane, the PIC or the operator or the owner shall ensure that they do not affect the performance of the aeroplane systems, equipment or the ability to operate the aeroplane.

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

EFB Functions

61. (1) Where EFBs are used on board of an aeroplane the PIC or the owner or operator shall—

- (a) assess the safety risks associated with each EFB function;
- (b) establish 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.

(2) The Authority shall issue a specific approval for the operational use of EFB functions to be used for the safe operation of aeroplanes

EFB Specific Approval

62. (1) When issuing a specific approval for the use of EFBs, the Authority shall ensure that—

- (a) the EFB equipment and its associated installation hardware, including interaction with aeroplane systems if applicable, meet the appropriate airworthiness certification requirements;
- (b) the operator or owner has assessed the risks associated with the operations supported by the EFB functions;
- (c) the operator or owner has established requirements for redundancy of the information (if appropriate) contained in and displayed by the EFB functions;
- (d) the operator or owner has established and documented procedures for the management of the EFB functions including any databases it may use; and
- (e) the operator or owner has established and documented the procedures for the use of, and training requirements for, the EFB functions.

Aeroplane operated under an Article 83 bis agreement

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

(2) The agreement summary of an Article 83 bis agreement shall be accessible to a civil aviation safety inspector to determine which functions and duties are transferred under the agreement by the State of Registry to the State of the principal location of a general aviation operator, when conducting surveillance activities such as ramp checks.

(3) 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 the principal location of the general aviation operator.

(4) The agreement summary shall contain the information as specified in Fourth Schedule to these regulations.

SUB PART VI
AEROPLANE COMMUNICATION,
NAVIGATION AND SURVEILLANCE EQUIPMENT

Communication equipment

64. (1) The PIC shall ensure that an aeroplane to be operated in accordance with the instrument flight rules or at night is provided with radio communication equipment.

(2) The equipment in subsection (1) shall be capable of conducting two-way communication with those aeronautical stations and on those frequencies prescribed by the appropriate authority.

(2) When compliance with section 48 requires that more than one communication equipment unit be provided, each shall be independent of the other or others to the extent that a failure in any one will not result in failure of any other.

(3) The PIC shall ensure that an aeroplane to be operated in accordance with VFR, but as a controlled flight, is provided with radio communication equipment capable of conducting two-way communication at any time during flight with such aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

(4) The PIC shall ensure that an aeroplane to be operated on a flight to which the provisions of section 45 apply, is provided with radio communication equipment capable of conducting two-way communication at any time during flight with such aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

(5) The radio communication equipment required in accordance with subsections (1) to (4) shall provide for communication on the aeronautical emergency frequency 121.5 MHz.

(6) For operations where communication equipment is required to meet an RCP specification for performance-based communication (PBC), an aeroplane shall, in addition to the requirements specified in section 68—

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

(7) The Authority shall establish criteria for operations where an RCP specification for PBC has been prescribed.

(8) In establishing criteria for operations where an RCP specification for PBC has been prescribed, the Authority shall require that the operator or owner establish—

- (a) normal and abnormal procedures, including contingency procedures;
- (b) flight crew qualification and proficiency requirements, in accordance with the 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.

(9) The Authority shall ensure that, in respect of those aeroplanes mentioned in subsection (6), adequate provisions exist for—

- (a) receiving the reports of observed communication performance issued by monitoring programmes established in accordance with Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018; and
- (b) taking immediate corrective action for individual aircraft, aircraft types or operators, identified in such reports as not complying with the RCP specifications.

Navigation equipment

65. (1) An aeroplane shall be provided with navigation equipment which will enable it to proceed—
- (a) in accordance with its flight plan; and
 - (b) in accordance with the requirements of air traffic services;
- except where, if not so precluded by the Authority, navigation for flights under VFR is accomplished by visual reference to landmarks.
- (2) For operations where a navigation specification for performance-based navigation (PBN) has been prescribed, an aeroplane shall, in addition to the requirements specified in subsection (1)—
- (a) be provided with navigation equipment which will enable it to operate in accordance with the prescribed navigation specifications; and
 - (b) have information relevant to the aeroplane navigation specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of Design or State of Registry; and
 - (c) where the aeroplane is operated in accordance with a MEL, have information relevant to the aeroplane navigation specification capabilities included in the MEL.
- (3) The Authority shall establish criteria for operations where a navigation specification for PBN has been prescribed.
- (4) In establishing criteria for operations where a navigation specification for PBN has been prescribed, the Authority shall require that the operator or owner to establish—
- (a) normal and abnormal procedures including contingency procedures;
 - (b) flight crew qualification and proficiency requirements, in accordance with the appropriate navigation specifications;
 - (c) training for relevant personnel consistent with the intended operations; and
 - (d) appropriate maintenance procedures to ensure continued airworthiness, in accordance with the appropriate navigation specifications.
- (5) The Authority shall issue a specific approval for operations based on PBN authorisation required (AR) navigation specifications.
- (6) For flights in defined portions of airspace where, based on Regional Air Navigation Agreement, minimum navigation performance specifications (MNPS) are prescribed, an aeroplane shall be provided with navigation equipment which—
- (a) continuously provides indications to the flight crew of adherence to or departure from track to the required degree of accuracy at any point along that track; and
 - (b) has been authorised by the Authority for the MNPS operations concerned.
- (7) For flights in defined portions of airspace where, based on Regional Air Navigation Agreement, a reduced vertical separation minimum (RVSM) of 300 m (1 000 ft) is applied between FL 290 and FL 410 inclusive—
- (a) the PIC shall ensure that an aeroplane is provided with equipment which is capable of—
 - (i) indicating to the flight crew the flight level being flown;
 - (ii) automatically maintaining a selected flight level;
 - (iii) providing an alert to the flight crew when a deviation occurs from the selected flight level.
The threshold for the alert shall not exceed ± 90 m (300 ft); and
 - (iv) automatically reporting pressure-altitude;
 - (b) the Authority shall issue a specific approval for RVSM operations.
- (8) Prior to granting the RVSM specific approval required in accordance with subsection (7) the Authority shall be satisfied that—
- (a) the vertical navigation performance capability of the aeroplane satisfies the requirements specified in Fifth Schedule to these regulations.
 - (b) the owner or operator has instituted appropriate procedures in respect of continued airworthiness (maintenance and repair) practices and programmes; and
 - (c) the owner or operator has instituted appropriate flight crew procedures for operations in RVSM airspace.
- (9) The Authority shall ensure that, in respect of those aeroplanes mentioned in subsection (7), adequate provisions exist for—

- (a) receiving the reports of height-keeping performance issued by the monitoring agencies established in accordance with the Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018; and
- (b) taking immediate corrective action for individual aircraft, or aircraft type groups, identified in such reports as not complying with the height-keeping requirements for operation in airspace where RVSM is applied.

(10) The Authority, after issuing an RVSM specific approval to an owner or operator shall establish a requirement which ensures that a minimum of two aeroplanes of each aircraft type grouping of the owner or operator have their height-keeping performance monitored, at least once every two years or within intervals of 1 000 flight hours per aeroplane, whichever period is longer.

(11) If an owner or operator aircraft type grouping consists of a single aeroplane, monitoring of that aeroplane shall be accomplished within the period specified in subsection (10).

(12) All States that are responsible for airspace where RVSM has been implemented, or that have issued RVSM specific approvals to owners or operators within their State, shall establish provisions and procedures which ensure that appropriate action will be taken in respect of aircraft and owners or operators found to be operating in RVSM airspace without a valid RVSM specific approval.

(13) The PIC shall ensure that an aeroplane is provided with sufficient navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment will enable the aeroplane to navigate in accordance with subsection (1) and where applicable subsections (6) and (7).

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

Surveillance equipment

66. (1) The PIC shall ensure that an aeroplane is provided with surveillance equipment which will enable it to operate in accordance with the requirements of air traffic services.

(2) For operations where surveillance equipment is required to meet an RSP specification for performance-based surveillance (PBS), an aeroplane 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 specifications;
- (b) have information relevant to the aeroplane RSP specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of Design or State of Registry; and
- (c) where the aeroplane is operated in accordance with a MEL, have information relevant to the aeroplane RSP specification capabilities included in the MEL.

(3) The Authority shall establish criteria for operations where an RSP specification for PBS has been prescribed.

(4) In establishing criteria for operations where an RSP specification for PBS has been prescribed, the Authority shall require that the operator or owner establish—

- (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.

(5) The Authority shall ensure that, in respect of those aeroplanes mentioned in subsection (2), adequate provisions exist for—

- (a) receiving the reports of observed surveillance performance issued by monitoring programmes established in accordance with Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018; and
- (b) taking immediate corrective action for individual aircraft, aircraft types or operators, identified in such reports as not complying with the RSP specifications.

SUB PART VII

AEROPLANE CONTINUING AIRWORTHINESS

Interpretation

67. For the purpose of these regulations—

“aeroplane” includes engines, propellers, components, accessories, instruments, equipment and apparatus including emergency equipment.

Owner’s continuing airworthiness responsibilities

68. (1) An owner of an aeroplane, or in the case where it is leased, the lessee, shall ensure that, in accordance with procedures acceptable to the Authority—

- (a) the aeroplane is maintained in an airworthy condition;
- (b) the operational and emergency equipment necessary for an intended flight is serviceable; and
- (c) the certificate of airworthiness of the aeroplane remains valid.

(2) The owner or the lessee shall not operate an aircraft unless maintenance on the aircraft, including any associated engine, propeller and part, is carried out:

- (a) by an organisation complying with the Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018 that is approved by the Authority or by another Contracting State, and the organisation is acceptable to the Authority; or
- (b) by a qualified person or organisation in accordance with procedures that are authorised by the Authority;

and there is a maintenance release in relation to the maintenance carried out.

(3) The owner or the lessee shall not operate an aeroplane unless it is maintained and released to service under a system acceptable to the Authority.

Continuing Airworthiness Records;

69. (1) The owner of an aircraft, or in the case where it is leased, the lessee, shall ensure that the following records are kept for the periods mentioned in subsection (2)—

- (a) the total time in service -hours, calendar time and cycles, as appropriate of the aircraft and all life-limited components;
- (b) the current status of compliance with all applicable mandatory continuing airworthiness information;
- (c) appropriate details of modifications and repairs;
- (d) the time in service -hours, calendar time and cycles, as appropriate since the last overhaul of the aircraft or its components subject to a mandatory overhaul life;
- (e) the current status of the aircraft's compliance with the maintenance programme; and
- (f) the detailed maintenance records to show that all requirements for the signing of a maintenance release have been met.

(2) The records in subsection 1(a) to(e) shall be kept for a minimum period of 180 days after the unit to which they refer has been permanently withdrawn from service and the records in subsection (1)(f) for a minimum period of 2 years after the signing of the maintenance release.

(3) In the event of a temporary change of owner or lessee, the records shall be made available to the new owner or lessee, and notice of the change shall be made to the Authority.

(4) In the event of any permanent change of owner or lessee, the records shall be transferred to the new owner or lessee, and notice of the change shall be made to the Authority.

(5) 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.

Modifications and Repairs

70. (1) An Owner shall ensure that all modifications and repairs comply with airworthiness requirements acceptable to the Authority.

(2) The owner or lessee shall establish procedures to ensure that the substantiating data supporting compliance with the airworthiness requirements are retained.

Maintenance release

71. (1) When maintenance is carried out by an approved maintenance organization, the maintenance release shall be issued by the approved maintenance organisation in accordance with Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018.

(2) When 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 with Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019 to certify that the maintenance work performed has been completed satisfactorily and in accordance with data and procedures acceptable to the Authority.

(3) When maintenance is not carried out by an approved maintenance organization, the maintenance release shall include the following—

- (a) basic details of the maintenance performed;
- (b) the date such maintenance was completed; and
- (c) the identity of the authorized person or persons signing the release.

SUB PART VIII

AEROPLANE FLIGHT CREW

Composition of Flight Crew

72. An owner or operator shall ensure that the number and composition of the flight crew is not less than that specified in the flight manual or other documents associated with the certificate of airworthiness.

Qualifications

73. (1) The pilot-in-command shall—

- (a) ensure that each flight crew member holds a valid licence issued by the State of Registry, or if issued by another Contracting State, rendered valid by the State of Registry;
- (b) ensure that flight crew members are properly rated; and
- (c) be satisfied that flight crew members have maintained competency.

(2) The pilot-in-command of an aircraft equipped with an airborne collision avoidance system (ACAS II) shall ensure that each flight crew member has been appropriately trained to competency in the use of ACAS II equipment and the avoidance of collision.

Pilot proficiency checks

74. (1) In this section “eligibility period” means the three month period including the month prior, the month due, and the month after any due date specified in this section.

(2) A crew member who is required to take a proficiency check or recurrent training to maintain a qualification for shall complete those requirements at any time during the eligibility period.

(3) For calculation of the next due date, completion of the requirement in subsection (2) at any time during the period shall be considered as completed in the month due.

(4) An owner or 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 aeroplane.

(5) Where the operation may be conducted under the instrument flight rules, the owner or operator shall ensure that the pilot's competence to comply with such rules is demonstrated to either a check pilot of the operator or a representative of the State issuing the pilot licence.

(6) Pilot proficiency checks shall be performed once every year within the eligibility period as defined in subsection (1).

(7) No pilot shall undertake a proficiency check outside the eligibility period without an approval from the Authority.

SUB PART IX

MANUALS, LOGS AND RECORDS

Flight manual

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

Journey Logbook

76. (1) A journey log book shall be maintained for every aeroplane in which shall be entered particulars of the aeroplane, its crew and each journey.

(2) The aeroplane journey log shall contain the following items—

- (a) aeroplane nationality and registration;
- (b) date;
- (c) crew member names and duty assignments;
- (d) departure and arrival points and times;
- (e) purpose of flight;
- (f) observations regarding the flight; and
- (g) signature of the pilot-in-command

Records of emergency and survival equipment carried

77. (1) The owner of the aircraft, or in the case where it is leased, the lessee, 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 the aircraft.

(2) The information specified in subsection (1) shall include, as applicable—

- (a) the number, colour and type of life rafts and pyrotechnics;
- (b) details of emergency medical supplies;
- (c) water supplies; and
- (d) the type and frequencies of the emergency portable radio equipment.

SUB PART X

SECURITY

Security of Aircraft

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

Reporting acts of unlawful interference

79. Following an act of unlawful interference, the pilot-in-command shall submit a report of such an act to the designated local authority.

FIRST SCHEDULE
GENERAL AVIATION SPECIFIC APPROVALS
PURPOSE AND SCOPE

1.1 Specific approvals shall have a standardized format which contains the minimum information required in the specific approval template.

Note.— When the operations to be conducted require a specific approval, a copy of the document(s) needs to be carried on board

SPECIFIC APPROVAL TEMPLATE

SPECIFIC APPROVAL				
ISSUING AUTHORITY and CONTACT DETAILS¹				
Issuing Authority ¹ _____				
Address _____				
Signature: _____		Date ² : _____		
Telephone: _____		Fax: _____		Email: _____
OWNER/OPERATOR				
Name ³ : _____		Address: _____		
Telephone: _____		Fax: _____		Email: _____
Aircraft model ⁴ and registration marks:				
SPECIFIC APPROVAL	YES	NO	DESCRIPTION ⁵	REMARKS
Low visibility operations				
Approach and landing	<input type="checkbox"/>	<input type="checkbox"/>	CAT ⁶ : _____ RVR: _____ m DH: _____ ft	
Take-off	<input type="checkbox"/>	<input type="checkbox"/>	RVR ⁷ : _____ m	
Operational credit(s)	<input type="checkbox"/>	<input type="checkbox"/>	⁸	
RVSM	<input type="checkbox"/>	<input type="checkbox"/>		
AR navigation specifications for PBN operations	<input type="checkbox"/>	<input type="checkbox"/>	⁹	
EFB	<input type="checkbox"/>	<input type="checkbox"/>	¹⁰	
Other ¹¹	<input type="checkbox"/>	<input type="checkbox"/>		

Notes.—

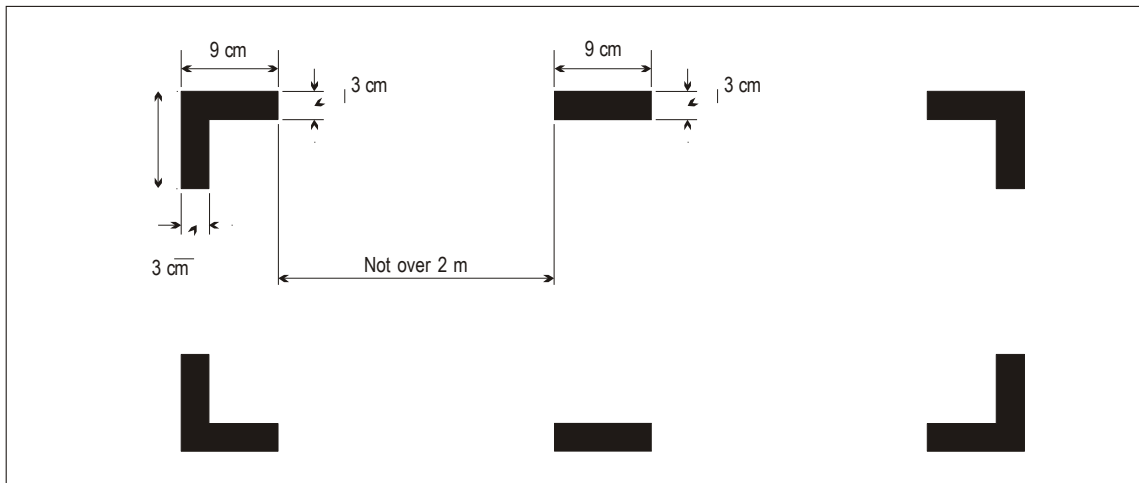
1. Civil Aviation Authority name and contact details, including the telephone country code and email if available.
2. Issuance date of the specific approval (dd-mm-yyyy) and signature of the authority representative.
3. Owner or operator's name and address.
4. Insert the aeroplane make, model and series, or master series, if a series has been designated. The CAST/ICAO taxonomy is available at: <http://www.intlaviationstandards.org/>.
5. List in this column the most permissive criteria for each specific approval (with appropriate criteria).
6. Insert the applicable precision approach category (CAT II, III). Insert the minimum RVR in metres and decision height in feet. One line is used per listed approach category.
7. 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.
8. List the airborne capabilities (i.e. automatic landing, HUD, EVS, SVS, CVS) and associated operational credit(s) granted.
9. 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 "Description" column.
10. List the EFB functions used for the safe operation of aeroplanes and any applicable limitations
11. Other specific approvals or data can be entered here, using one line (or one multi-line block) per approval (e.g. specific approach operations approval).

SECOND SCHEDULE

Marking of break-in points

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

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



MARKING OF BREAK-IN POINTS

THIRD SCHEDULE

Flight Recorders

The material in this Appendix concerns flight recorders intended for installation in aeroplanes 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 lightweight flight recorder, it is permissible to record it on either the CARS or the ADRS.

GENERAL REQUIREMENTS

- 1.1 Non-deployable flight recorder containers shall be painted a distinctive orange colour.
- 1.2 Non-deployable crash-protected flight recorder containers shall:
 - a) carry reflective material to facilitate their location; and
 - b) have securely attached an automatically activated underwater locating device operating at a frequency of 37.5 kilohertz (kHz). At the earliest practical date, but not later than 1 January 2018, this device shall operate for a minimum of 90 days.
- 1.3 Automatic deployable flight recorder containers shall:
 - a) be painted a distinctive orange colour, however the surface visible from outside the aircraft may be of another colour;
 - b) carry reflective material to facilitate their location; and
 - c) have an integrated automatically activated ELT.
- 1.4 The flight recorder systems shall be installed so that:
 - a) the probability of damage to the recordings is minimized;
 - b) there is an aural or visual means for pre-flight checking that the flight recorder systems are operating properly; and
 - c) 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
 - d) aeroplanes 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.

1.5 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.

1.6 The lightweight flight recorders shall be connected to a power source having the characteristics which ensure proper and reliable recording in the operational environment.

1.7 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.

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

1.9 The manufacturer shall provide the appropriate certificating authority with the following information in respect of the flight recorder systems:

- a) manufacturer's operating instructions, equipment limitations and installation procedures;
- b) parameter origin or source and equations which relate counts to units of measurement; and
- c) manufacturer's test reports.

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

1.10 Start and stop logic

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

1.11 Parameters to be recorded

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

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

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

- a) operational information from electronic display systems, such as electronic flight instrument systems (EFIS), electronic centralized aircraft monitor (ECAM) and engine indication and crew alerting system (EICAS). Use the following order of priority:
 - 1) parameters selected by the flight crew relating to the desired flight path, e.g. barometric pressure setting, selected altitude, selected airspeed, decision height, and autoflight system engagement and mode indications if not recorded from another source;
 - 2) display system selection/status, e.g. SECTOR, PLAN, ROSE, NAV, WXR, COMPOSITE, COPY;
 - 3) warnings and alerts; and
 - 4) the identity of displayed pages for emergency procedures and checklists;
- b) retardation information including brake application for use in the investigation of landing overruns and rejected take-offs.

2.2.2.3 The parameters that satisfy the recommendations for flight path and speed as displayed to the pilot(s) are listed below. The parameters without an (*) are mandatory parameters which shall be recorded. In addition, the parameters designated by an (*) are to be recorded if an information source for the parameter is displayed to the pilot and is practicable to record:

- Pressure altitude
- Indicated airspeed or calibrated airspeed
- Heading (primary flight crew reference)
- Pitch attitude
- Roll attitude
- Engine thrust/power
- Landing gear status*
- Total or outside air temperature*
- Time*
- Navigation data*: Drift angle, wind speed, wind direction, latitude/longitude
- Radio altitude*

2.2.4 The parameters that satisfy the requirements for ADRS are the first 7 parameters listed in Table A2.3-3.

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

1.12 Additional information

1.12.1 The measurement range, recording interval and accuracy of parameters on installed equipment shall be verified by methods approved by the appropriate certificating authority.

1.12.2 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

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

2.1 Start and stop logic

The CVR or CARS shall start to record prior to the aeroplane moving under its own power and record continuously until the termination of the flight when the aeroplane 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.

2.2 Signals to be recorded

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

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

2.2.2 The preferred CVR audio allocation should be as follows:

- a) pilot-in-command audio panel;
- b) co-pilot audio panel;
- c) additional flight crew positions and time reference; and
- d) cockpit area microphone.

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

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

2.2.4 The preferred CARS audio allocation should be as follows:

- a) voice communication; and
- b) aural environment on the flight deck.

2.3 IMAGE RECORDER (AIR) AND AIRBORNE IMAGE RECORDING SYSTEM (AIRS) AIRBORNE

2.4 Start and stop logic

The AIR or AIRS shall start to record prior to the aeroplane moving under its own power and record continuously until the termination of the flight when the aeroplane 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.

2.5 Classes

2.5.1 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 AIR or AIRS in this document.

2.5.2 A Class B AIR or AIRS captures data link message displays.

2.5.3 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 an ADRS, or where an FDR is not required.

DATA LINK RECORDER (DLR)

2.6 Applications to be recorded

2.6.1 Where the aircraft flight path is authorized or controlled through the use of data link messages, all data link messages, both uplinks (to the aircraft) and downlinks (from the aircraft), shall be recorded on the aircraft. As far as practicable, the time the messages were displayed to the flight crew and the time of the responses shall 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.

2.6.2 Messages applying to the applications listed in Table A2.3-2 shall be recorded. Applications without the asterisk (*) are mandatory applications which shall be recorded regardless of the system complexity. Applications with an (*) shall be recorded only as far as is practicable given the architecture of the system.

3. INSPECTIONS OF FLIGHT RECORDER SYSTEMS

3.1 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.

3.2 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.

3.3 Recording inspections shall be carried out as follows:

- a) an analysis of the recorded data from the flight recorders shall ensure that the recorder operates correctly for the nominal duration of the recording;
- b) 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;
- c) 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;
- d) 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;
- e) 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;
- f) 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; and
- g) an examination of the recorded messages on the DLR or DLRS shall be carried out by replay of the DLR or DLRS recording.

3.4 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.

3.5 A report of the recording inspection shall be made available on request to regulatory authorities for monitoring purposes.

3.6 Calibration of the FDR system:

- a) 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
- b) 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 A2.3-1 Parameter characteristics for flight data recorders

Serial number	Parameter	Applicability	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
1	Time (UTC when available, otherwise relative time count or GNSS time sync)		24 hours	4	±0.125%/h	1 s
2	Pressure altitude		-300 m (-1 000 ft) to maximum certificated altitude of aircraft +1 500 m (+5 000 ft)	1	±30 m to ±200 m (±100 ft to ±700 ft)	1.5 m (5 ft)

3	Indicated airspeed or calibrated airspeed				
4	Heading (primary flight crew reference)	360°	1	±2°	0.5°
5	Normal acceleration	-3 g to +6 g	0.125	±1% of maximum range excluding datum error of ±5%	0.004 g
6	Pitch attitude	±75° or usable range whichever is greater	0.25	±2°	0.5°
7	Roll attitude	±180°	0.25	±2°	0.5°
8	Radio transmission keying	On-off (one discrete)	1		
9	Power on each engine (Note 3)	Full range	1 (per engine)	±2%	0.2% of full range or the resolution required to operate the aircraft
10*	Trailing edge flap and cockpit control selection	Full range or each discrete position	2	±5% or as pilot's indicator	0.5% of full range or the resolution required to operate the aircraft
11*	Leading edge flap and cockpit control selection	Full range or each discrete position	2	±5% or as pilot's indicator	0.5% of full range or the resolution required to operate the aircraft
12*	Thrust reverser position	Stowed, in transit, and reverse	1 (per engine)		
13*	Ground spoiler/speed brake selection (selection and position)	Full range or each discrete position	1	±2% unless higher accuracy uniquely required	0.2% of full range
14	Outside air temperature	Sensor range	2	±2°C	0.3°C
15*	Autopilot/auto throttle/AFCS mode and engagement status	A suitable combination of discretes	1		
16	Longitudinal acceleration	±1 g	0.25	±0.015 g excluding a datum error of ±0.05 g	0.004 g
17	Lateral acceleration (Note 3)	±1 g	0.25	±0.015 g excluding a datum error of ±0.05 g	0.004 g

Civil Aviation (Operations of Aircraft) Regulations, 2023

18	Pilot input and/or control surface position-primary controls (pitch, roll, yaw) (Notes 4 and 8)	Application for type certification submitted to a Contracting State before 1 January 2016	Full range	0.25	±2° unless higher accuracy uniquely required	0.2% of full range or as installed
		Application for type certification submitted to a Contracting State on or after 1 January 2016	Full range	0.125	±2° unless higher accuracy uniquely required	0.2% of full range or as installed
19	Pitch trim position		Full range	1	±3% unless higher accuracy uniquely required	0.3% of full range or as installed
20*	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)
1*	2 Vertical beam deviation (ILS/GNSS/GLS glide path MLS elevation, IRNAV/IAN vertical deviation)		Signal range	1	±3%	0.3% of full range
22*	Horizontal beam deviation (ILS/GNSS/GLS localizer, MLS azimuth, IRNAV/IAN lateral deviation)		Signal range	1	±3%	0.3% of full range
23	Marker beacon passage		Discrete	1		
24	Master warning		Discrete	1		
25	Each NAV receiver frequency selection (Note 5)		Full range	4	As installed	
26*	DME 1 and 2 distance (includes distance to runway threshold (GLS) and distance to missed approach point (IRNAV/IAN) (Notes 5 and 6)		0-370 km (0-200 NM)	4	As installed	1 852 m (1 NM)
27	Air/ground status		Discrete	1		
28*	GPWS/TAWS/GCAS status (selection of terrain display mode including pop-up display status) and		Discrete	1		

	(terrain alerts, both cautions and warnings, and advisories) and (on/off switch position)					
29*	Angle of attack		Full range	0.5	As installed	0.3% of full range
30*	Hydraulics, each system (low pressure)		Discrete	2		0.5% of full range
31*	Navigation data (latitude/longitude, ground speed and drift angle) (Note 7)		As installed	1	As installed	
32*	Landing gear and gear selector position		Discrete	4	As installed	
33*	Groundspeed		As installed	1	Data should be obtained from the most accurate system	1 kt
34	Brakes (left and right brake pressure, left and right brake pedal position)		(Maximum metered brake range, discretises or full range)	1	±5%	2% of full range
35*	Additional engine parameters (EPR, N ₁ , indicated vibration level, N ₂ , EGT, fuel flow, fuel cut-off lever position, N ₃ engine fuel metering valve position)	Engine fuel metering valve position: Application for type certification is submitted to a Contracting State on or after 1 January 2023	As installed	Each engine each second	As installed	2% of full range
36*	TCAS/ACAS (traffic alert and collision avoidance system)		Discrete(s)	1	As installed	
37*	Wind shear warning		Discrete	1	As installed	
38*	Selected barometric setting (pilot, co-pilot)		As installed	64	As installed	0.1 mb (0.01 in-Hg)
39*	Selected altitude (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection
40*	Selected speed (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection
41*	Selected Mach (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection
42*	Selected vertical speed (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection
43*	Selected heading (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient for crew selection

Civil Aviation (Operations of Aircraft) Regulations, 2023

44*	Selected flight path (all pilot selectable modes of operation) (course/DSTRK, path angle, final approach path (IRNAV/IAN))		1	As installed	As installed
45*	Selected decision height	As installed	64	As installed	Sufficient to determine crew selection
46*	EFIS display format (pilot, co-pilot)	Discrete(s)	4	As installed	
47*	Multi-function/engine/alerts display format	Discrete(s)	4	As installed	
48*	AC electrical bus status	Discrete(s)	4	As installed	
49*	DC electrical bus status	Discrete(s)	4	As installed	
50*	Engine bleed valve position	Discrete(s)	4	As installed	
51*	APU bleed valve position	Discrete(s)	4	As installed	
52*	Computer failure	Discrete(s)	4	As installed	
53*	Engine thrust command	As installed	2	As installed	2% of full range
54*	Engine thrust target	As installed	4	As installed	2% of full range
55*	Computed centre of gravity	As installed	64	As installed	1% of full range
56*	Fuel quantity in CG trim tank	As installed	64	As installed	1% of full range
57*	Head-up display in use	As installed	4	As installed	
58*	Para-visual display on/off	As installed	1	As installed	
59*	Operational stall protection, stick shaker and pusher activation	As installed	1	As installed	
60*	Primary navigation system reference (GNSS, INS, VOR/DME, MLS, Loran C, localizer glide slope)	As installed	4	As installed	
61*	Ice detection	As installed	4	As installed	
62*	Engine warning each engine vibration	As installed	1	As installed	
63*	Engine warning each engine over temperature	As installed	1	As installed	

64*	Engine warning each engine oil pressure low		As installed	1	As installed	
65*	Engine warning each engine over speed		As installed	1	As installed	
66*	Yaw trim surface position		Full range	2	±3% unless higher accuracy uniquely required	0.3% of full range
67*	Roll trim surface position		Full range	2	±3% unless higher accuracy uniquely required	0.3% of full range
68*	Yaw or sideslip angle		Full range	1	±5%	0.5°
69*	De-icing and/or anti-icing systems selection		Discrete(s)	4		
70*	Hydraulic pressure (each system)		Full range	2	±5%	100 psi
71*	Loss of cabin pressure		Discrete	1		
72*	Cockpit trim control input position, Pitch		Full range	1	±5%	0.2% of full range or as installed
73*	Cockpit trim control input position, Roll		Full range	1	±5%	0.2% of full range or as installed
74*	Cockpit trim control input position, Yaw		Full range	1	±5%	0.2% of full range or as installed
75	All cockpit flight control input forces (control wheel, control column, rudder pedal)		Full range (±311 N (±70 lbf), ±378 N (±85 lbf), ±734 N (±165 lbf))	1	±5%	0.2% of full range or as installed
76*	Event marker		Discrete	1		
77*	Date		365 days	64		
78*	Actual navigation performance or estimated position error or estimated position uncertainty		As installed	4	As installed	
79*	Cabin pressure altitude	Application for type certification submitted to a Contracting State on or after 1 January 2023	As installed (0 ft to 40 000 ft recommended)	1	As installed	100 ft
80*	Aeroplane computed weight	Application for type certification submitted to a Contracting State on or after 1 January 2023	As installed	64	As installed	1% of full range
81*	Flight director command (left flight director pitch command, left flight	Application for type certification submitted to a Contracting State on or after 1 January 2023	Full range	1	± 2°	0.5°

	director roll command, right flight director pitch command, right flight director roll command)					
82*	Vertical speed	Application for type certification submitted to a Contracting State on or after 1 January 2023	As installed	0.25	As installed (32 ft/min recommended)	16 ft/min

Notes.—

1. V_{s_0} stalling speed or minimum steady flight speed in the landing configuration is in Section “Abbreviations and Symbols”.
2. VD design diving speed.
3. Record sufficient inputs to determine power.
4. For aeroplanes with control systems in which movement of a control surface will back drive the pilot’s control, “or” applies. For aeroplanes with control systems in which movement of a control surface will not back drive the pilot’s control, “and” applies. In aeroplanes with split surfaces, a suitable combination of inputs is acceptable in lieu of recording each surface separately. In aeroplanes with independent pilot input on primary controls, each pilot input on primary controls needs to be recorded separately.
5. If signal available in digital form.
6. Recording of latitude and longitude from INS or other navigation system is a preferred alternative.
7. If signals readily available.
8. It is not intended that aeroplanes issued with an individual certificate of airworthiness before 1 January 2016 be modified to meet the measurement range, maximum sampling and recording intervals, accuracy limits or recording resolution guidance description detailed in this Schedule.

Table A2.3-2. Description of applications for data link recorders

Item No.	Application type	Application description	Recording content
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.	C
2	Controller-pilot communication	This includes any application used to exchange requests, 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.	C
3	Addressed surveillance	This includes any surveillance application in which the ground sets 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.	C

4	Flight information	This includes any service used for delivery of flight information to 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	C
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Table A2.3-3. Parameter characteristics for aircraft data recording systems

No.	Parameter name	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
1	Heading:					
±	a) Heading (Magnetic or True)	±180°	1	±2°	0.5°	* Heading is preferred, if not available, yaw rate shall be recorded
	b) Yaw rate	±300°/s	0.25	±1% + drift of 360°/h	2°/s	
2	Pitch:					
	a) Pitch attitude	±90°	0.25	±2°	0.5°	* Pitch attitude is preferred, if not available, pitch rate shall be recorded
	b) Pitch rate	300°/s	0.25	±1% + drift of 360°/h	2°/s	
3	Roll:					
	a) Roll attitude	±180°	0.25	±2°	0.5°	* If not available, roll rate shall be recorded
	b) Roll rate	300°/s	0.25	±1% + drift of 360°/h	2°/s	
4	Positioning system:					
	a) Time	24 hours	1	±0.5 s	0.1 s	UTC time preferred where available
	b) Latitude/longitude	Latitude: ±90° Longitude: ±180°	2 (1 if available)	As installed (0.00015° recommended)	0.00005°	

Civil Aviation (Operations of Aircraft) Regulations, 2023

c) Altitude	–300 m (–1 000 ft) to maximum certificated altitude of aircraft + 1 500 m (5 000 ft)	2 (1 if available)	As installed (±15 m (±50 ft) recommended)	1.5 m (5 ft)	
d) Ground speed	0–1 000 kt	2 (1 if available)	As installed (±5 kt recommended)	1 kt	
e) Track	0–360°	2 (1 if available)	As installed (±2° recommended)	0.5°	
f) Estimated error	Available range	2 (1 if available)	As installed	As installed	Shall be recorded if readily available
5	Normal acceleration	–3 g to +6 g (*)	0.25 (0.125 if available)	As installed (±0.09 g excluding a datum error of ±0.45 g recommended)	0.004 g
6	Longitudinal acceleration	±1 g (*)	0.25 (0.125 if available)	As installed (±0.015 g excluding a datum error of ±0.05 g recommended)	0.004 g
7	Lateral acceleration	±1 g (*)	0.25 (0.125 if available)	As installed (±0.015 g excluding a datum error of ±0.05 g recommended)	0.004 g
8	External static pressure (or pressure altitude)	34.4 mb (3.44 in-Hg) to 310.2 mb (31.02 in-Hg) or available sensor Range	1	As installed (±1 mb (0.1 in-Hg) or ±30 m (±100 ft) to ±210 m (±700 ft) recommended)	0.1 mb (0.01 in-Hg) or 1.5 m (5 ft)
9	Outside air temperature (or total air temperature)	–50° to +90°C or available sensor Range	2	As installed (±2°C recommended)	1°C
10	Indicated air speed	As the installed pilot display measuring system or available sensor range	1	As installed (±3% recommended)	1 kt (0.5 kt recommended)
11	Engine RPM	Full range including overspeed condition	Each engine each second	As installed	0.2% of full range
12	Engine oil pressure	Full range	Each engine each second	As installed (5% of full range recommended)	2% of full range

No.	Parameter name	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
13	Engine oil temperature	Full range	Each engine each second	As installed (5% of full range recommended)	2% of full range	
14	Fuel flow or pressure	Full range	Each engine each second	As installed	2% of full range	
15	Manifold pressure	Full range	Each engine each second	As installed	0.2% of full range	
16	Engine thrust/power/torque parameters required to determine propulsive thrust/power*	Full range	Each engine each second	As installed	0.1% of full range	* Sufficient parameters e.g. EPR/N ₁ or torque/N _p as appropriate to the particular engine shall be recorded to determine power in both normal and reverse thrust. A margin for possible overspeed should be provided.
17	Engine gas generator speed (N _g)	0–150%	Each engine each second	As installed	0.2% of full range	
18	Free power turbine speed (N _f)	0–150%	Each engine each second	As installed	0.2% of full range	
19	Coolant temperature	Full range	1	As installed (±5°C recommended)	1°C	
20	Main voltage	Full range	Each engine each second	As installed	1 Volt	
21	Cylinder head temperature	Full range	Each cylinder each second	As installed	2% of full range	
22	Flaps position	Full range or each discrete position	2	As installed	0.5°	
23	Primary flight control surface position	Full range	0.25	As installed	0.2% of full range	
24	Fuel quantity	Full range	4	As installed	1% of full range	
25	Exhaust gas temperature	Full range	Each engine each second	As installed	2% of full range	

Civil Aviation (Operations of Aircraft) Regulations, 2023

No.	Parameter name	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
26	Emergency voltage	Full range	Each engine each second	As installed	1 Volt	
27	Trim surface position	Full range or each discrete position	1	As installed	0.3% of full range	
28	Landing gear position	Each discrete position*	Each gear every two seconds	As installed		* Where available, record up-and-locked and down-and-locked position
29	Novel/unique aircraft features	As required	As required	As required	As required	

FOURTH SCHEDULE

ARTICLE 83 bis AGREEMENT SUMMARY

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

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

Article 31: Certificates of Airworthiness	Annex 6 Part I or Part III, Section II	Yes <input type="checkbox"/>	[Specify Part and chapters] ³
		No <input type="checkbox"/>	
	Annex 6 Part II or Part III, Section III	Yes <input type="checkbox"/>	[Specify Part and chapters] ³
		No <input type="checkbox"/>	
	Annex 8 Part II, Chapters 3 and 4	Yes <input type="checkbox"/>	[Specify chapters] ³
		No <input type="checkbox"/>	

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

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.

FIFTH SCHEDULE

ALTIMETRY SYSTEM PERFORMANCE REQUIREMENTS FOR OPERATIONS IN RVSM AIRSPACE

1. In respect of groups of aeroplanes that are nominally of identical design and build with respect to all details that could influence the accuracy of height-keeping performance, the height-keeping performance capability shall be such that the total vertical error (TVE) for the group of aeroplanes shall have a mean no greater than 25 m (80 ft) in magnitude and shall have a standard deviation no greater than $28 - 0.013z^2$ for $0 \leq z \leq 25$ when z is the magnitude of the mean TVE in metres, or $92 - 0.004z^2$ for $0 \leq z \leq 80$ where z is in feet. In addition, the components of TVE shall have the following characteristics:

- a) the mean altimetry system error (ASE) of the group shall not exceed 25 m (80 ft) in magnitude;
- b) the sum of the absolute value of the mean ASE and of three standard deviations of ASE shall not exceed 75 m (245 ft); and
- c) the differences between cleared flight level and the indicated pressure altitude actually flown shall be symmetric about a mean of 0 m, with a standard deviation no greater than 13.3 m (43.7 ft), and in addition, the decrease in the frequency of differences with increasing difference magnitude shall be at least exponential.

2. In respect of aeroplanes for which the characteristics of the airframe and altimetry system fit are unique and so cannot be classified as belonging to a group of aeroplanes encompassed by paragraph 1, the height-keeping performance capability shall be such that the components of the TVE of the aeroplane have the following characteristics:

- a) the ASE of the aeroplane shall not exceed 60 m (200 ft) in magnitude under all flight conditions; and
- b) the differences between the cleared flight level and the indicated pressure altitude actually flown shall be symmetric about a mean of 0 m, with a standard deviation no greater than 13.3 m (43.7 ft), and in addition, the decrease in the frequency of differences with increasing difference magnitude shall be at least exponential.

PART VI
CIVIL AVIATION (OPERATION OF AIRCRAFT - GENERAL AVIATION (CORPORATE, LARGE AND TURBOJET
AEROPLANES)

ARRANGEMENT OF SECTIONS

Sections

SUB PART I
PRELIMINARY PROVISIONS

1. Title.
2. Application

SUB PART II
GENERAL

3. Compliance with laws, regulations and procedures
4. Safety Management

SUB PART III
FLIGHT OPERATIONS

5. Operating Facilities
6. Operational Management- operator notification
7. Operations Manual
8. Operating Instructions General
9. In Flight Simulation of Emergency Situations
10. Checklists
11. Minimum Flight Altitudes
12. Aerodrome Operating Minima
13. Fatigue Management Programme.
14. Passengers
15. Flight Preparation.
16. Operational Flight Planning
17. Alternate aerodromes.
18. Fuel requirements
19. In-Flight Fuel Management
20. Additional requirements for operations beyond 60 minutes to an en-route alternate aerodrome.
21. Refuelling with Passengers on board
22. Oxygen Supply
23. In flight procedures- Instrument Approaches
24. Use of Oxygen
25. Aeroplane operating procedures for noise abatement
26. Aeroplane operating procedures for rates of climb and descent.
27. Aeroplane operating procedures for landing performance
28. Duties of Pilot in Command (PIC)
29. Cabin Baggage (Take-off and Landing)

SUB PART IV
AEROPLANE PERFORMANCE OPERATING LIMITATIONS

30. General
31. Applicable aeroplanes certificated in accordance with Parts IIIA and IIIB of Annex 8
32. Mass Limitations

SUB PART V
AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

33. General
34. Aeroplanes on all flights
35. Flight recorders – FDR
36. Cockpit voice recorders

- 37. Duration (CVR)
- 38. Combination recorders
- 39. Aeroplanes on long-range over-water flights
- 40. Aeroplanes for which the individual certificate of airworthiness was first issued before 1 January 1990

- 41. Aeroplanes in icing conditions
- 42. Aeroplanes operated in accordance with the instrument flight rules
- 43. Aeroplanes over 5 700 kg — emergency power supply for electrically operated attitude indicating instruments
- 44. Pressurized aeroplanes when carrying passengers — weather-detecting equipment
- 45. Aeroplanes operated above 15 000 m or 49 000 ft — radiation indicator
- 46. Aeroplanes carrying passengers — cabin crew seats
- 47. Aeroplanes required to be equipped with an airborne collision avoidance system (ACAS)
- 48. Aeroplanes required to be equipped with pressure-altitude reporting transponder
- 49. Microphones

SUB PART VI

AEROPLANE COMMUNICATION, NAVIGATION AND SURVEILLANCE EQUIPMENT

- 50. Communication equipment
- 51. Installation
- 52. Electronic navigation data management

SUB PART VII

AEROPLANE CONTINUING AIRWORTHINESS

- 53. Operator's Continuing Airworthiness Responsibilities
- 54. Operator's maintenance control manual
- 55. Maintenance Programme
- 56. Continuing Airworthiness Information
- 57. Maintenance Release

SUB PART VIII

AEROPLANE FLIGHT CREW

- 58. Composition of the Flight Crew
- 59. Flight Engineer
- 60. Flight Crew member Emergency duties
- 61. Flight Crew Member Training Programmes
- 62. Qualifications (Flight Crew Member Licensing)
- 63. Recent Experience
- 64. Proficiency checks.

SUB PART IX

FLIGHT DISPATCHER

- 65. Flight Dispatcher

SUB PART X

MANUALS, LOGS AND RECORDS

- 66. Operator's Maintenance Control Manual
- 67. Maintenance Programme
- 68. Flight Recorder Records

SUB PART XI

CABIN CREW

- 69. Cabin Crew Assignment of Emergency Duties
- 70. Cabin Crew at emergency evacuation stations

- 71. Protection of cabin Crew during Flight
- 72. Cabin Crew Training

SUB PART XII
SECURITY

- 73. Security Programme
- 74. Reporting Acts of unlawful Interference

SUB PART I

Title

1. This Part may be cited as the Operation of Aircraft — General Aviation- Corporate, Large and Turbojet Aeroplanes.

Application

2. (1) The applicable provisions of Civil Aviation (General Aviation-Aeroplanes) Regulations and this Part, shall apply to general aviation operations with respect to—

- (a) aeroplanes with a maximum certificated take-off mass exceeding 5700 kg;
- (b) aeroplanes equipped with one or more turbojet engines;
- (c) aeroplanes with a seating configuration of more than 9 passenger seats; and
- (d) aeroplanes engaged in corporate aviation operations

(2) A “corporate aviation operation” is an operation involving one or more aircraft that are operated by pilots employed for the purpose of flying the aircraft.

(3) The operations in subsection (4) shall be conducted in accordance with Civil Aviation (General Aviation-Aeroplanes) Regulations and this Part.

(4) The term “aircraft” when used with regards to corporate aviation, is used to indicate that a corporate aviation operation using a mix of aeroplanes and helicopters and is subject to this Part where at least one aeroplane is involved.

SUB PART II

GENERAL

Compliance with laws, regulations and procedures;

3 (1) An operator shall ensure that all employees comply with the laws, regulations and procedures of those States in which operations are conducted.

(2) An 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 aerodromes to be used and the air navigation facilities relating thereto.

(3) An operator shall ensure that other members of the flight crew are familiar with such laws, regulations and procedures as are pertinent to the performance of their respective duties in the operation of the aeroplane.

(4) The PIC is responsible for operational control.

(5) An operator shall describe the operational control system in the operations manual and identify the roles and responsibilities of those involved with the system.

(6) An operator shall ensure that the PIC has available on board the aeroplane, all the essential information concerning the search and rescue services in the area over which the aeroplane will be flown.

(7) An operator shall ensure that flight crew members demonstrate the ability to speak and understand the English language used for aeronautical radiotelephony communications as specified in Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019.

Safety Management

4.(1) No person shall 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 the Civil Aviation (Aeroplane Accidents and Incidents Investigations) Regulations, except where the recordings or transcripts are—

- (a) 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 Civil Aviation (Safety Management) Regulations;
- (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 Civil Aviation (Safety Management) Regulations; or
- (c) used for inspections of flight recorder systems as provided in the First Schedule to this Part.

(2) No person shall 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 in accordance with Civil Aviation (Aeroplane Accidents and Incidents Investigations) Regulations, except where the recordings or transcripts are subject to the protections accorded by Civil Aviation (Safety Management) Regulations and are—

- (a) used by the operator for airworthiness or maintenance purposes;
- (b) sought for use in proceedings not related to an event involving an accident or incident investigation;
- (c) de-identified; or
- (d) disclosed under secure procedures.

SUB PART III
FLIGHT OPERATIONS

Operating Facilities

5. (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 or water facilities including communication facilities and navigation aids available and directly required on such flight, for the safe operation of the aeroplane, are adequate for the type of operation under which the flight is to be conducted.

(2) An operator shall, as part of its safety management system, assess the level of rescue and firefighting service (RFFS) protection available at any aerodrome intended to be specified in the operational flight plan in order to ensure that an acceptable level of protection is available for the aeroplane intended to be used.

Operational Management- operator notification

6. (1) Where the operator has an operating base in a State other than in Zimbabwe, the operator shall notify the State in which the operating base is located.

(2) Upon notification in accordance with subsection (1), safety and security oversight shall be coordinated between the State in which the operating base is located and in Zimbabwe

Operations Manual

7.(1) The operator shall provide, for the use and guidance of personnel concerned, an operations manual containing all the instructions and information necessary for operations personnel to perform their duties.

(2) The operations manual shall be amended or revised as is necessary to ensure that the information contained therein is kept up to date.

(3) All amendments or revisions referred to in subsection (2) shall be issued to all personnel that are required to use this manual.

Operating Instructions - General

8.(1) The 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) The operator shall issue operating instructions and provide information on aeroplane climb performance with all engines operating to enable the pilot-in-command to determine the climb gradient that can be achieved during the departure phase for the existing take-off conditions and intended take-off technique and the information shall be included in the operations manual.

In Flight Simulation of Emergency Situations.

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

Checklists

10. (1) The operator shall ensure that checklists are used by flight crew prior to, during and after all phases of operations, and in emergencies, to ensure compliance with the operating procedures contained in the aeroplane operating manual and the aeroplane flight manual or other documents associated with the certificate of airworthiness and otherwise in the operations manual.

(2) The design and utilisation of checklists in subsection (1) shall observe Human Factors principles.

Minimum Flight Altitudes

11. The operator shall specify, for flights which are to be conducted in accordance with the instrument flight rules, the method of establishing terrain clearance altitudes.

Aerodrome Operating Minima

12. (1) The operator shall establish aerodrome operating minima, in accordance with criteria specified by the Authority in the aeronautical information publications for each aerodrome to be used in operations.

(2) When establishing aerodrome operating minima as specified in subsection (1), any conditions prescribed in the list of specific approvals shall be observed.

(3) The operating minima referred to in subsection (1) shall not be lower than any that may be established for such aerodromes by the State of the Aerodrome, except when specifically approved by that State.

Fatigue Management Programme

13. (1) The operator shall establish and implement a fatigue management programme that ensures that all operator personnel involved in the operation and maintenance of aeroplane do not carry out their duties when fatigued.

(2) The programme in subsection (1) shall address flight and duty times and be included in the operations manual.

Passengers

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

- (a) seat belts;
- (b) emergency exits;
- (c) life jackets, where the carriage of life jackets is prescribed;
- (d) oxygen dispensing equipment, where the provision of oxygen for the use of passengers is prescribed;
- and
- (e) other emergency equipment provided for individual use, including passenger emergency briefing cards.

(2) The operator 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.

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

(4) The operator shall ensure that during take-off and landing and whenever considered necessary, by reason of turbulence or any emergency occurring during flight, all passengers on board an aeroplane are secured in their seats by means of the seat belts or harnesses provided.

Flight Preparation.

15. (1) Every operator shall develop procedures to ensure that a flight is not commenced unless—

- (a) the aeroplane is airworthy, duly registered and that appropriate certificates with respect thereto are aboard the aeroplane;
- (b) the instruments and equipment installed in the aeroplane are appropriate, taking into account the expected flight conditions;
- (c) any necessary maintenance has been performed in accordance with SUB PART VI of this Part;
- (d) the mass of the aeroplane and centre of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;
- (e) any load carried is properly distributed and safely secured; and

- (f) the aeroplane operating limitations, contained in the flight manual, or its equivalent, shall not be exceeded.

(2) The operator shall make available sufficient information on climb performance with all engines operating to enable determination of the climb gradient that can be achieved during the departure phase for the existing take-off conditions and intended take-off technique.

Operational Flight Planning

16. An operator shall specify flight planning procedures to provide for the safe conduct of the flight based on considerations of aeroplane performance, other operating limitations and relevant expected conditions on the route to be followed and at the aerodromes concerned and these procedures shall be included in the operations manual.

Alternate aerodromes.

17. (1) An operator shall select a take-off alternate and specify in the flight plan where either the meteorological conditions at the aerodrome of departure are below the applicable aerodrome landing minima for that operation or where it would not be possible to return to the aerodrome of departure for other reasons.

(2) The take-off alternate aerodrome referred to in subsection (1) shall be located within the following flight time from the aerodrome of departure:

- (a) for aeroplanes with two engines, one hour of flight time at a one-engine-inoperative cruising speed, determined from the aeroplane operating manual, calculated in ISA and still-air conditions using the actual take-off mass; or
- (b) for aeroplanes with three or more engines two hours of flight time at an all-engines operating cruising speed, determined from the aeroplane operating manual, calculated in ISA and still-air conditions using the actual take-off mass.

(3) For an aerodrome to be selected as a take-off alternate the available information shall indicate that, at the estimated time of use, the conditions will be at or above the applicable aerodrome operating minima for that operation.

Fuel requirements

18 (1) An operator shall ensure that an aeroplane carry sufficient amount of usable fuel to complete the planned flight safely and to allow for deviations from the planned operation.

(2) The amount of usable fuel to be carried shall, as a minimum, be based on—

- (a) fuel consumption data—
 - (i) provided by the aeroplane manufacturer; or
 - (ii) where available, current aeroplane-specific data derived from a fuel consumption monitoring system; and
- (b) the operating conditions for the planned flight including—
 - (i) anticipated aeroplane mass;
 - (ii) Notices to Airmen;
 - (iii) current meteorological reports or a combination of current reports and forecasts;
 - (iv) air traffic services procedures, restrictions and anticipated delays; and
 - (v) the effects of deferred maintenance items or configuration deviations.
- (c) Where no specific fuel consumption data exist for the precise conditions of the flight, the aeroplane may be operated in accordance with estimated fuel consumption data.
- (3) The pre-flight calculation of usable fuel required shall include—
 - (a) taxi fuel, which shall be the amount of fuel expected to be consumed before take-off taking into account local conditions at the departure aerodrome and auxiliary power unit (APU) fuel consumption;
 - (b) trip fuel, which shall be the amount of fuel required to enable the aeroplane to fly from take-off until landing at the destination aerodrome taking into account the operating conditions of subsection (2)(b);
 - (c) contingency fuel, which shall be the amount of fuel required to compensate for unforeseen factors and shall not be less than five per cent of the planned trip fuel
 - (d) destination alternate fuel- which shall be—
 - (i) where a destination alternate aerodrome is required, the amount of fuel required to enable the aeroplane to—
 - A. perform a missed approach at the destination aerodrome;
 - B. climb to the expected cruising altitude;

- C. fly the expected routing;
- D. descend to the point where the expected approach is initiated; and
- E. conduct the approach and landing at the destination alternate aerodrome; or
- (ii) where a flight is operated without a destination alternate aerodrome, the amount of fuel required to enable the aeroplane to fly for 15 minutes at holding speed at 450 m (1 500 ft) above destination aerodrome elevation in standard conditions; or
- (iii) where the aerodrome of intended landing is an isolated aerodrome:
 - A. for a reciprocating engine aeroplane, the amount of fuel required to fly for 45 minutes plus 15 per cent of the flight time planned to be spent at cruising level, including final reserve fuel, or two hours, whichever is less; or
 - B. for a turbine-engine aeroplane, the amount of fuel required to fly for two hours at normal cruise consumption above the destination aerodrome, including final reserve fuel;
- (e) final reserve fuel, which shall be the amount of fuel on arrival at the destination alternate aerodrome, or the destination aerodrome when no destination alternate aerodrome is required—
 - (i) for a reciprocating engine aeroplane, the amount of fuel required to fly for 45 minutes; or
 - (ii) for a turbine-engine aeroplane, the amount of fuel required to fly for 30 minutes at holding speed at 450 m (1 500 ft) above aerodrome elevation in standard conditions;
- (f) additional fuel, which shall be the supplementary amount of fuel required to enable the aeroplane to descend as necessary and proceed to land at an alternate aerodrome in the event of engine failure or loss of pressurisation based on the assumption that such a failure occurs at the most critical point along the route;
- (g) discretionary fuel, which shall be the extra amount of fuel to be carried at the discretion of the pilot-in-command.

(4) The operator shall determine one final reserve fuel value for each aeroplane type and variant in their fleet rounded up to an easily recalled figure.

(5) 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.

(6) Nothing in this section precludes the in-flight amendment of a flight plan to re-plan that flight to another aerodrome, provided that the requirements of this section can be complied with from the point where the flight is re-planned.

In-Flight Fuel Management

19. (1) An operator shall establish policies and procedures to ensure that in-flight fuel checks and fuel management are performed.

(2) The PIC shall continually ensure that the amount of usable fuel remaining on board is not less than the fuel required to proceed to an aerodrome where a safe landing can be made with the planned final reserve fuel remaining upon landing.

(3) The PIC shall request delay information from ATC when unanticipated circumstances may result in landing at the destination aerodrome with less than the final reserve fuel plus any fuel required to proceed to an alternate aerodrome or the fuel required to operate to an isolated aerodrome.

(4) The PIC shall advise ATC of a minimum fuel state by declaring MINIMUM FUEL when, having committed to land at a specific aerodrome, the pilot calculates that any change to the existing clearance to that aerodrome may result in landing with less than the planned final reserve fuel.

(5) The PIC shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL when the calculated usable fuel estimated to be available upon landing at the nearest aerodrome where a safe landing can be made is less than the planned final reserve fuel.

Additional requirements for operations beyond 60 minutes to an en-route alternate aerodrome

20. (1) When conducting operations beyond 60 minutes from a point on a route to an en-route alternate aerodrome an operator shall ensure that—

- (a) en-route alternate aerodromes are identified; and
- (b) the PIC has access to current information on the identified en-route alternate aerodromes, including operational status and meteorological conditions.

Refuelling with Passengers on board

21.(1) No operator shall refuel an aeroplane when passengers are embarking, on board or disembarking unless it is properly attended by qualified personnel ready to initiate and direct an evacuation of the aeroplane by the most practical and expeditious means available.

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

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

Oxygen Supply

22.(1) No PIC 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—

(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; and

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

(2) No PIC shall commence a flight to be operated with a pressurised aeroplane unless a sufficient quantity of stored breathing oxygen is carried to supply all the crew members and passengers, as is appropriate to the circumstances of the flight being undertaken, in the event of loss of pressurization, for any period that the atmospheric pressure in any compartment occupied by them would be less than 700 hPa.

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

In flight procedures-Instrument Approaches

23. An operator shall include operating procedures for conducting instrument approaches in the aeroplane operating manual.

Use of Oxygen

24. (1) All flight crew members, when engaged in performing duties essential to the safe operation of an aeroplane in flight, shall use breathing oxygen continuously whenever the circumstances prevail for which its supply has been required in section 22.

(2) All flight crew members of pressurized aeroplane operating above an altitude where the atmospheric pressure is less than 376 hPa shall have available at the flight duty station a quick-donning type of oxygen mask which will readily supply oxygen upon demand.

Aeroplane operating procedures for noise abatement

25(1) Aeroplane operating procedures for noise abatement shall comply with the provisions of the noise abatement procedures as published in the AIP.

(2) Noise abatement procedures specified by the operator for any one aeroplane type shall be the same for all aerodromes.

Aeroplane operating procedures for rates of climb and descent

26. Unless otherwise specified in an air traffic control instruction, to avoid unnecessary airborne collision avoidance system or ACAS II resolution advisories in aeroplane at or approaching adjacent altitudes or flight levels, pilots shall consider using appropriate procedures to ensure that a rate of climb or descent of less than 8 m/s or] 1 500 ft/min, depending on the instrumentation available, is achieved throughout the last 300 m or 1 000 ft of climb or descent to the assigned altitude or flight level, when made aware of another aeroplane at or approaching an adjacent altitude or flight level.

Aeroplane operating procedures for landing performance

27. An approach to land shall not be continued below 300 m (1 000 ft) above aerodrome elevation unless the PIC is satisfied that, with the runway surface condition information available, the aeroplane performance information indicates that a safe landing can be made.

Duties of Pilot in Command (PIC)

- 28.(1) The PIC shall ensure that the checklists specified in section 10 are complied with in detail.
- (2) The PIC shall be responsible for notifying the nearest appropriate authority by the quickest available means of any accident involving the aeroplane, resulting in serious injury or death of any person or substantial damage to the aeroplane or property.
- (3) In the event that the PIC is incapacitated the operator shall take the action specified in subsection (2).
- (5) The PIC shall be responsible for reporting all known or suspected defects in the aeroplane, to the operator, at the termination of the flight.
- (6) The pilot-in-command shall be responsible for the journey logbook or the general declaration containing the information listed in Civil Aviation (General Aviation-Aeroplanes) Regulations.

Cabin Baggage (Take-off and Landing)

29. The operator shall specify procedures to ensure that all baggage carried onto an aeroplane and taken into the passenger cabin is adequately and securely stowed.

SUB PART IV
AEROPLANE PERFORMANCE OPERATING LIMITATIONS

General

30. (1) For aeroplanes for which Parts IIIA and IIIB of Annex 8 are not applicable because of the exemption provided for in Article 41 of the Convention, the Authority shall ensure that the level of performance specified in section 31 shall be met as far as practicable.

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

31. (1) Section 31(2) and section 32(8) are applicable to the aeroplanes to which Parts IIIA and IIIB of Annex 8 are applicable.
- (2) Every operator shall operate an aeroplane in compliance with the terms of its certificate of airworthiness and within the approved operating limitations contained in its flight manual.
- (3) The Authority shall take such precautions as are reasonably possible to 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 this PART.
- (4) An operator shall ensure that a flight is not commenced unless the performance information provided in the flight manual indicates that the requirements of section 31(4) and 32(8) can be complied with for the flight to be undertaken.
- (5) In applying the requirements of this SUB PART an operator shall take into account all factors that significantly affect the performance of an aeroplane including—
- (a) mass,
 - (b) operating procedures,
 - (c) the pressure altitude appropriate to the elevation of the aerodrome,
 - (d) runway slope,
 - (e) the ambient temperature,
 - (f) wind, and
 - (g) surface conditions of the runway at the expected time of use- including presence of slush, water and/or ice, for landplanes, water surface condition for seaplanes.
- (6) The factors specified in subsection (5) shall be taken into account directly as operational parameters or indirectly by means of allowances or margins, which may be provided in the scheduling of performance data or in the comprehensive and detailed code of performance in accordance with which the aeroplane is being operated.

Mass limitations

32. (1) The PIC shall ensure that the mass of the aeroplane at the start of take-off shall not exceed the mass at which the requirements of subsection (5) are complied with, or the mass at which subsections (6) and (7) are complied

with, allowing for expected reductions in mass as the flight proceeds, and for such fuel jettisoning as is envisaged and, in applying subsection (6) and (7) and, in respect of alternate aerodromes, as specified in subsections (3) and (7)

(2) The PIC shall ensure that the mass of the aeroplane at the start of take-off shall not exceed the maximum take-off mass specified in the flight manual for the pressure altitude appropriate to the elevation of the aerodrome, and if used as a parameter to determine the maximum take-off mass, any other local atmospheric condition.

(3) The PIC shall ensure that the estimated mass for the expected time of landing at the aerodrome of intended landing and at any destination alternate aerodrome, shall not exceed the maximum landing mass specified in the flight manual for the pressure altitude appropriate to the elevation of those aerodromes, and when used as a parameter to determine the maximum landing mass, any other local atmospheric condition.

(4) The PIC shall ensure that the mass at the start of take-off, or at the expected time of landing at the aerodrome of intended landing and at any destination alternate aerodrome, shall not exceed the relevant maximum masses at which compliance has been demonstrated with the applicable noise certification requirements specified by the Authority unless otherwise authorized in exceptional circumstances for a certain aerodrome or a runway where there is no noise disturbance problem, by the competent authority of the State in which the aerodrome is situated.

(5) Take-off-The PIC shall ensure that the aeroplane is able, in the event of a critical engine failing at any point in the take-off, either to discontinue the take-off and stop within either the accelerate-stop distance available (ASDA) or the runway available, or to continue the take-off and clear all obstacles along the flight path by an adequate margin until the aeroplane is in a position to comply with subsection (7).

(6) In determining the length of the runway available, account shall be taken of the loss, of runway length due to alignment of the aeroplane prior to take-off.

(7) En route one engine inoperative, the PIC shall ensure that the aeroplane is able, in the event of the critical engine becoming inoperative at any point along the route or planned diversions therefrom, to continue the flight to an aerodrome at which provisions of subsection (8) can be met, without flying below the minimum obstacle clearance altitude at any point.

(8) Landing, the PIC shall ensure that the aeroplane, at the aerodrome of intended landing and at any alternate aerodrome, after clearing all obstacles in the approach path by a safe margin, be able to land, with assurance that it can come to a stop or, for a seaplane, to a satisfactorily low speed, within the landing distance available and allowance shall be made for expected variations in the approach and landing techniques, when such allowance has not been made in the scheduling of performance data.

SUB PART V

AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

General

33. (1) Where a master minimum equipment (MMEL) list is established for the aircraft type, the operator shall include in the operations manual a minimum equipment list (MEL) approved by the State of Registry of the aeroplane which will enable the PIC to determine whether a flight may be commenced or continued from any intermediate stop should any instrument, equipment or systems become inoperative.

(2) The operator shall provide operations staff and flight crew with an aircraft operating manual, for each aircraft type operated, containing the normal, abnormal and emergency procedures relating to the operation of the aircraft.

(3) The operating manual in subsection (2) shall be consistent with the aircraft flight manual and checklists to be used and its design shall observe human factors principles.

Aeroplanes on all flights

34.(1) In addition to the requirements contained in Civil Aviation (General Aviation – Aeroplanes) Regulations Section 33 an aeroplane operated under this Part shall be equipped with:

- (a) accessible and adequate medical supplies appropriate to the number of passengers the aeroplane is authorised to carry;
- (b) medical supplies shall comprise one or more first-aid kits;
- (c) a safety harness for each flight crew seat incorporating a device which shall automatically restrain the occupant's torso in the event of rapid deceleration;

- (d) The safety harness referred to in paragraph (1)(c) for each pilot seat shall incorporate a device to prevent a suddenly incapacitated pilot from interfering with the flight controls;
 - (e) means of ensuring that the following information and instructions are conveyed to passengers:
 - (i) when seat belts are to be fastened;
 - (ii) when and how oxygen equipment is to be used where the carriage of oxygen is required;
 - (iii) restrictions on smoking;
 - (iv) location and use of life jackets or equivalent individual flotation devices where their carriage is required
 - (v) location of emergency equipment; and
 - (vi) location and method of opening emergency exits.
- (2) An operator shall ensure that an aeroplane carries—
- (a) the operations manual prescribed in this Part, or those parts of it that pertain to flight operations;
 - (b) the flight manual for the aeroplane, or other documents containing performance data required for the application of Aeroplane Performance Operating Limitations as prescribed in this Part and any other information necessary for the operation of the aeroplane within the terms of its certificate of airworthiness, unless these data are available in the operations manual; and
 - (c) the checklists required by this Part.

Flight recorders – FDR

35. (1) All aeroplanes of a maximum certificated take-off mass of over 5 700 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2005 shall be equipped with an FDR which shall record at least 78 parameters listed in table A2.3-1 First Schedule to this Part.

(2) All aeroplanes of a maximum certificated take-off mass of over 27 000 kg 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 32 parameters listed in table A2.3-1 of the First Schedule to this Part.

(3) All aeroplanes of a maximum certificated take-off mass of over 5 700 kg, up to and including 27 000 kg, 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 16 parameters listed in table A2.3-1 of the First Schedule to this Part.

Cockpit voice recorders

36. (1) All aeroplanes of a maximum certificated take-off mass of over 27 000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 1987 shall be equipped with a CVR;

(2) All aeroplanes of a maximum certificated take-off mass of over 5 700 kg, up to and including 27 000 kg, for which the individual certificate of airworthiness is first issued on or after 1 January 1987, shall be equipped with a CVR.

Duration (CVR)

37. All aeroplanes of a maximum certificated take-off mass of over 27 000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2022 shall be equipped with a CVR capable of retaining the information recorded during at least the last 25 hours of its operation.

Combination recorders

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

Aeroplanes on long-range over-water flights

39. (1) The operator of an aeroplane operated on an extended flight over water shall determine the risks to survival of the occupants of the aeroplane in the event of a ditching.

(2) The operator shall take into account the operating environment and conditions such as, but not limited to, sea state and sea and air temperatures, the distance from land suitable for making an emergency landing, and the availability of search and rescue facilities.

(3) Subject to subsection (2), based upon the assessment of the risks, the operator shall, in addition to the equipment required in Part 10 General Aviation - Aeroplanes, ensure that the aeroplane is appropriately equipped with—

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 lifesaving equipment, including means of sustaining life, as is appropriate to the flight to be undertaken; and

(a) equipment for making the distress signals described in Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018.

(4) 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, except where the requirement of this Part is met by the provision of individual flotation devices other than life jackets.

Pressurised Aeroplanes

40. (1) No operator shall operate a pressurised aeroplane at flight altitudes where the atmospheric pressure is less than 376 hPa unless that the aeroplane is equipped with a device to provide positive warning to the flight crew of any dangerous loss of pressurisation.

(2) No operator shall operate an aeroplane at flight altitudes where the atmospheric pressure is less than 700 hPa in personnel compartments unless the aeroplane is equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the oxygen supplies required in section 22.

(3) No operator shall operate an aeroplane operated at flight altitudes at which the atmospheric pressure is less than 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 the section 22.

Aeroplanes in icing conditions

41. Every operator shall ensure that an aeroplane is equipped with suitable de-icing or anti-icing devices when operated in circumstances in which icing conditions are reported to exist or are expected to be encountered.

Aeroplanes operated in accordance with the instrument flight rules

42. In addition to the requirements contained in the Civil Aviation (General Aviation – Aeroplanes) Regulations, aeroplanes when operated in accordance with the instrument flight rules, or when the aeroplane cannot be maintained in a desired attitude without reference to one or more flight instruments, shall be equipped with two independent altitude measuring and display systems.

Aeroplanes over 5 700 kg — emergency power supply for electrically operated attitude indicating instruments

43. (1) An operator of an aeroplane of a maximum certificated take-off mass of over 5 700 kg introduced into service after 1 January 1975 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 pilot-in-command.

(2) The emergency power supply referred to in subsection (1) 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 indicators are being operated by emergency power.

(3) Aircraft with advanced cockpit automation systems, glass cockpits, shall have system redundancy that provides the flight crew with attitude, heading, airspeed and altitude indications in case of failure of the primary system or display.

(4) Instruments that are used by any one pilot shall be so arranged as to permit the pilot to see their indications readily from his or her station, with the minimum practicable deviation from the position and line of vision normally assumed when looking forward along the flight path.

Pressurised aeroplanes when carrying passengers —weather-detecting equipment

44. An operator of pressurised aeroplanes when carrying passengers shall ensure that the aeroplane is equipped with operative weather-detecting equipment capable of detecting thunderstorms whenever such aeroplanes are being operated in areas where such conditions may be expected to exist along the route either at night or under instrument meteorological conditions.

Aeroplanes operated above 15 000 m (49 000 ft) —radiation indicator

45. (1) An operator shall ensure that an aeroplane intended to be primarily operated above 15 000 m (49 000 ft) shall carry equipment to measure and indicate continuously the dose rate of total cosmic radiation being received, the total of ionizing and neutron radiation of galactic and solar origin and the cumulative dose on each flight.
- (2) The display unit of the equipment in subsection (1) shall be readily visible to a flight crew member.

Aeroplanes carrying passengers — cabin crew seats

46. (1) Every operator shall ensure that an aeroplane is equipped with a forward or rearward facing seat, within 15 degrees of the longitudinal axis of the aeroplane, fitted with a safety harness for the use of each cabin crew member in compliance with section 69 of this Part in respect of emergency evacuation.
- (2) Cabin crew seats provided in accordance with subsection (1) shall be located near floor level and other emergency exits as required by the State of Registry for emergency evacuation.

Aeroplanes required to be equipped with an airborne collision avoidance system (ACAS)

47. (1) Every operator of a turbine-engined aeroplane of a maximum certificated take-off mass in excess of 15 000 kg, or authorized to carry more than 30 passengers, for which the individual airworthiness certificate is first issued after 24 November 2005, shall ensure that it is equipped with ACAS II.
- (2) Every operator of a turbine-engined aeroplane of a maximum certificated take-off mass in excess of 5 700 kg but not exceeding 15 000 kg, or authorized to carry more than 19 passengers, for which the individual airworthiness certificate is first issued after 1 January 2007, shall ensure that it is equipped with ACAS II.

Aeroplanes required to be equipped with pressure-altitude reporting transponder

48. Every operator shall ensure that an aeroplane is equipped with a pressure-altitude reporting transponder which operates in accordance with Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019.

Microphones

49. The PIC shall ensure that all flight crew members required to be on flight deck duty shall communicate through boom or throat microphones below the transition level or altitude.

SUB PART VI

AEROPLANE COMMUNICATION, NAVIGATION AND SURVEILLANCE EQUIPMENT

Communication equipment

50. (1) In addition to the requirements of the Civil Aviation (General Aviation – Aeroplanes), an aeroplane shall be provided with radio communication equipment capable of—
- (a) conducting two-way communication for aerodrome 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.

Installation

51. The equipment installation shall be such that the failure of any single unit required for communications, navigation or surveillance purposes or any combination thereof shall not result in the failure of another unit required for communications or surveillance purposes.

Electronic navigation data management

52. (1) No operator of an aeroplane shall 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.

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

SUB PART VII
AEROPLANE CONTINUING AIRWORTHINESS

Operator's Continuing Airworthiness Responsibilities

53. (1) An operator shall comply with all the requirements of Section 72 of Civil Aviation (General Aviation – Aeroplanes).

(2) The operator shall ensure that all maintenance personnel receive initial and continuation training acceptable to the Authority and appropriate to their assigned tasks and responsibilities, including human factors principles and coordination with other maintenance personnel and flight crew.

Operator's maintenance control manual

54. (1) The operator shall provide a maintenance control manual, as specified in Section 66, for the use and guidance of maintenance and operations personnel.

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

Maintenance Programme

55.(1) An operator shall provide, for the use and guidance of maintenance and operational personnel concerned, a maintenance programme, acceptable to the Authority, containing the information required by section 67.

(2) The design and application of the operator's maintenance programme in subsection (1) shall observe human factors principles.

(3) The operator shall promptly furnish all organizations or persons to whom the maintenance programme has been issued, with copies of all amendments to the maintenance programme.

Continuing Airworthiness Information

56. An operator of an aeroplane of a maximum certificated take-off mass in excess of 5700 kg shall ensure that the information resulting from maintenance and operational experience with respect to continuing airworthiness, is transmitted as required by Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018.

Maintenance release

57. (1) Where maintenance is carried out by an approved maintenance organisation, the maintenance release shall be issued by the approved maintenance organization in accordance with Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018.

(2) When maintenance is not carried out by an approved maintenance organisation, the maintenance release shall be completed and signed by a person appropriately licensed in accordance with Annex 1 to certify that the maintenance work has been performed in accordance with the maintenance programme or other data and procedures acceptable to the Authority.

(3) When maintenance is not carried out by an approved maintenance organization, the maintenance release shall include the following—

- (a) basic details of the maintenance performed;
- (b) the date such maintenance was completed; and
- (c) the identity of the person or persons signing the release.

SUB PART VIII
AEROPLANE FLIGHT CREW

Composition of the Flight Crew (Designation of Pilot in Command)

58. For each flight the operator shall designate a pilot to act as pilot in command.

Flight Engineer

59. When a separate flight engineer's station is incorporated in the design of an aeroplane, the flight crew shall include at least one flight engineer especially assigned to that station, unless the duties associated with that station can be satisfactorily performed by another flight crew member, holding a flight engineer licence, without interference with regular duties.

Flight Crew member Emergency duties

60.(1) An operator shall, for each type of aeroplane, assign to all flight crew members the necessary functions they are to perform in an emergency or in a situation requiring emergency evacuation.

(2) Recurrent training in accomplishing functions referred to in sub regulation (1) 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 aeroplane.

Flight Crew Member Training Programmes

61.(1) An operator shall establish and maintain a training programme that is designed to ensure that a person who receives training acquires and maintains the competency to perform assigned duties, including skills related to human performance.

(2) Ground and flight training programmes shall be established, either through internal programmes or through a training services provider, and shall include or make reference to a syllabus for those training programmes in the company operations manual.

(3) The training programme shall include training to competency for all equipment installed.

(2) Where applicable, flight simulators shall be used to the maximum extent practicable for initial and Bi - Annual recurrent training.

Qualifications - flight crew member- licensing

62.(1) An Operator shall ensure that—

(a) each flight crew member assigned to duty holds a valid licence issued by the State of Registry, or if issued by another State, rendered valid by the State of Registry;

(b) flight crew members are properly rated; and

(c) flight crew members are competent to carry out assigned duties.

(2) The operator of an aeroplane equipped with an airborne collision avoidance system or ACAS II shall ensure that each flight crew member has been appropriately trained to competency in the use of ACAS II equipment and the avoidance of collisions.

Recent Experience

63.(1) The operator shall not assign a pilot to act as PIC of an aeroplane unless that pilot has made at least three take-offs and landings within the preceding 90 days on the same type of aeroplane or in a flight simulator approved for that purpose.

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

Pilot proficiency checks

64. (1) The operator shall ensure that piloting technique and the ability to execute emergency procedures is checked periodically in such a way as to demonstrate the pilot's competence.

(2) Where the operation may be conducted under the instrument flight rules, 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 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) 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.

SUB PART IX FLIGHT DISPATCHER

Flight dispatcher

65. An operator shall ensure that any person assigned as a flight dispatcher is trained and maintains familiarisation with all features of the operation which are pertinent to their duties, including knowledge and skills related to Human Factors.

SUB PART X MANUALS, LOGS AND RECORDS

Operator's Maintenance Control Manual

66. (1) An operator's maintenance control manual provided in accordance with section 54, which may be issued in separate parts, shall be developed according to industry codes of practice or to the State of Registry's guidance material, and shall at a minimum contain information about—
- (a) the means for complying with the procedures required by section 53;
 - (b) the means of recording the names and duties of the person or persons required by section 53;
 - (c) the maintenance programme required by section 55;
 - (d) the methods used for the completion and retention of the operator's continuing airworthiness records required by section 57;
 - (e) the procedures for complying with the service information reporting requirements of Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018;
 - (f) the procedures for implementing action resulting from mandatory continuing airworthiness information;
 - (g) 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;
 - (h) the aircraft types and models to which the manual applies;
 - (i) the procedures for ensuring that unserviceabilities affecting airworthiness are recorded and rectified; and
 - (j) procedures for advising the State of Registry of significant in-service occurrences.

Maintenance Programme

67. (1) An operator shall provide a maintenance programme for each aeroplane as required by section 60 and such program shall contain the following information—
- (a) maintenance tasks and the intervals at which these are to be performed, taking into account the anticipated utilization of the aeroplane;
 - (b) where applicable, a continuing structural integrity programme;
 - (c) procedures for changing or deviating from paragraphs (a) and (b) as approved by the State of Registry; and where applicable and approved by the State of Registry, condition monitoring and reliability programme descriptions for aeroplane systems, components and engines

(2) Maintenance tasks and intervals that have been specified as mandatory in approval of the type design, or approved changes to the maintenance programme shall be identified as such.

(3) The maintenance programme 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.

Flight Recorder Records

68. An owner of an aeroplane, or in the case where it is leased, the lessee, shall ensure, to the extent possible, in the event the aeroplane becomes involved in an accident or incident, the preservation of all related flight recorder records and, where necessary, the associated flight recorders, and their retention in safe custody pending their disposition as determined in accordance with Civil Aviation (Aeroplane Accident and Incident Investigation) Regulations.

SUB PART XI
CABIN CREW

Cabin Crew Assignment of Emergency Duties

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

Cabin Crew at emergency evacuation stations

70. An owner, lessee or operator shall ensure that, each cabin crew member assigned to emergency evacuation duties shall occupy a seat provided in accordance this Part during take-off and landing and whenever the PIC so directs.

Protection of cabin Crew during Flight

71. 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.

Cabin Crew Training

72. (1) An operator shall ensure that a training programme is completed by all persons before being assigned as a cabin crew member.

(2) The operator shall establish and maintain a cabin crew training programme that is designed to ensure that persons who receive training acquire the competency to perform their assigned duties, and the operator shall include or make reference to a syllabus for the training programme in the company operations manual and such training programme shall include Human Factors training.

SUB PART XII
SECURITY

Security Programme

73. (1) Any entity conducting general aviation operations, including corporate aviation operations, using an aeroplane with a maximum take-off mass greater than 5 700 kg, shall establish, implement and maintain an approved written operator security programme that meets the requirements of the National Civil Aviation Security Programme (NCASP) of Zimbabwe.

Reporting Acts of unlawful Interference

74. Following an act of unlawful interference, the pilot-in-command shall submit a report of such an act to the designated local authority.

FIRST SCHEDULE*Flight Recorders*

Note 1: The material in this Appendix concerns flight recorders intended for installation in aeroplanes 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.

Note 2: 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 lightweight flight recorder, it is permissible to record it on either the CARS or the ADRS.

GENERAL REQUIREMENTS

2. Non-deployable flight recorder containers shall be painted a distinctive orange colour.

Non-deployable crash-protected flight recorder containers shall:

- (a) carry reflective material to facilitate their location; and
- (b) have securely attached an automatically activated underwater locating device operating at a frequency of 37.5 kilohertz (kHz). At the earliest practical date, but not later than 1/1/18, this device shall operate for a minimum of 90 days.
- (c) Automatic deployable flight recorder containers shall:
- (d) be painted a distinctive orange colour, however the surface visible from outside the aircraft may be of another colour;
- (e) carry reflective material to facilitate their location; and
- (f) have an integrated automatically activated ELT.

3. The flight recorder systems shall be installed so that:

- (a) the probability of damage to the recordings is minimized;
- (b) there is an aural or visual means for pre-flight checking that the flight recorder systems are operating properly; and
- (c) 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
- (d) aeroplanes 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.

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.

The lightweight flight recorders shall be connected to a power source having the characteristics which ensure proper and reliable recording in the operational environment.

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.

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

4The manufacturer shall provide the appropriate certificating authority with the following information in respect of the flight recorder systems:

- (a) manufacturer's operating instructions, equipment limitations and installation procedures;
- (b) parameter origin or source and equations which relate counts to units of measurement; and
- (c) manufacturer's test reports.

FLIGHT DATA RECORDER (FDR) AND AIRCRAFT DATA RECORDING SYSTEM (ADRS)*Start and stop logic*

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

4.1.1.1 Parameters to be recorded

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

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

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

(a) operational information from electronic display systems, such as electronic flight instrument systems (EFIS), electronic centralized aircraft monitor (ECAM) and engine indication and crew alerting system (EICAS). Use the following order of priority:

- 1) parameters selected by the flight crew relating to the desired flight path, e.g. barometric pressure setting, selected altitude, selected airspeed, decision height, and autoflight system engagement and mode indications if not recorded from another source;
- 2) display system selection/status, e.g. SECTOR, PLAN, ROSE, NAV, WXR, COMPOSITE, COPY;
- 3) warnings and alerts; and
- 4) the identity of displayed pages for emergency procedures and checklists;

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

2.2.2.4 The parameters that satisfy the recommendations for flight path and speed as displayed to the pilot(s) are listed below. The parameters without an (*) are mandatory parameters which shall be recorded. In addition, the parameters designated by an (*) are to be recorded if an information source for the parameter is displayed to the pilot and is practicable to record:

- Pressure altitude
- Indicated airspeed or calibrated airspeed
- Heading (primary flight crew reference)
- Pitch attitude
- Roll attitude
- Engine thrust/power
- Landing gear status*
- Total or outside air temperature*
- Time*
- Navigation data*: Drift angle, wind speed, wind direction, latitude/longitude
- Radio altitude*

2.2.6 The parameters that satisfy the requirements for ADRS are the first 7 parameters listed in Table A2.3-3.

2.2.7 If further ADRS recording capacity is available, the recording of any parameters from 8 onwards defined in Table A2.3-3 shall be considered.

4.1.1.2 Additional information

4.1.1.2.1 The measurement range, recording interval and accuracy of parameters on installed equipment shall be verified by methods approved by the appropriate certificating authority.

4.1.1.2.2 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.

4.1.1.3 COCKPIT VOICE RECORDER (CVR) AND COCKPIT AUDIO RECORDING SYSTEM (CARS)*4.1.1.4 Start and stop logic*

The CVR or CARS shall start to record prior to the aeroplane moving under its own power and record continuously until the termination of the flight when the aeroplane 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 flight until the cockpit checks immediately following engine shutdown at the end of the flight.

4.1.1.5 Signals to be recorded

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

- (a) voice communication transmitted from or received in the aeroplane by radio;
- (b) aural environment on the flight deck;
- (c) voice communication of flight crew members on the flight deck using the aeroplane's interphone system, if installed;
- (d) voice or audio signals identifying navigation or approach aids introduced in the headset or speaker; and
- (e) digital communications with ATS, unless recorded by the FDR.

4.1.1.5.2 The preferred CVR audio allocation shall be as follows:

- (a) pilot-in-command audio panel;
- (b) co-pilot audio panel;
- (c) additional flight crew positions and time reference; and
- (d) cockpit area microphone.

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

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

4.1.1.5.4 The preferred CARS audio allocation shall be as follows:

- (a) voice communication; and
- (b) aural environment on the flight deck.

4.1.1.6 AIRBORNE IMAGE RECORDER (AIR) AND AIRBORNE IMAGE RECORDING SYSTEM (AIRS)*4.1.1.7 Start and stop logic*

The AIR or AIRS shall start to record prior to the aeroplane moving under its own power and record continuously until the termination of the flight when the aeroplane 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.

4.1.1.8 Classes

4.1.1.8.1 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 AIR or AIRS in this document.

4.1.1.8.2 A Class B AIR or AIRS captures data link message displays.

4.1.1.8.3 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 an ADRS, or where an FDR is not required.

4.1.2 DATA LINK RECORDER (DLR)*4.1.2.1 Applications to be recorded*

4.1.2.1.1 Where the aircraft flight path is authorized or controlled through the use of data link messages, all data link messages, both uplinks (to the aircraft) and downlinks (from the aircraft), shall be recorded on the aircraft. As far as practicable, the time the messages were displayed to the flight crew and the time of the responses shall be recorded.

4.1.2.1.2 Messages applying to the applications listed in Table A2.3-2 shall be recorded. Applications without the asterisk (*) are mandatory applications which shall be recorded regardless of the system complexity. Applications with an (*) shall be recorded only as far as is practicable given the architecture of the system.

4.1.3 INSPECTIONS OF FLIGHT RECORDER SYSTEMS

4.1.3.1 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.

4.1.3.2 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.

4.1.3.3 Recording inspections shall be carried out as follows:

- (a) an analysis of the recorded data from the flight recorders shall ensure that the recorder operates correctly for the nominal duration of the recording;
- (b) 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;
- (c) 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;
- (d) 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;
- (e) 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;
- (f) 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; and
- (g) an examination of the recorded messages on the DLR or DLRS shall be carried out by replay of the DLR or DLRS recording.

4.1.3.4 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.

4.1.3.5 A report of the recording inspection shall be made available on request to regulatory authorities for monitoring purposes.

4.1.3.6 Calibration of the FDR system:

- (a) 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
- (b) 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 A2.3-1 Parameter characteristics for flight data recorders

Serial number	Parameter	Applicability	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
1	Time (UTC when available, otherwise relative time count or GNSS time sync)		24 hours	4	±0.125%/h	1 s
2	Pressure altitude		–300 m (–1 000 ft) to maximum certificated altitude of aircraft +1 500 m (+5 000 ft)	1	±30 m to ±200 m (±100 ft to ±700 ft)	1.5 m (5 ft)
3	Indicated airspeed or calibrated airspeed		95 km/h (50 kt) to max V_{s_0} (Note 1) V_{s_0} to 1.2 V_D (Note 2)	1	±5% ±3%	1 kt (0.5 kt recommended)

4	Heading (primary flight crew reference)	360°	1	±2°	0.5°
5	Normal acceleration	-3 g to +6 g	0.125	±1% of maximum range excluding datum error of ±5%	0.004 g
6	Pitch attitude	±75° or usable range whichever is greater	0.25	±2°	0.5°
7	Roll attitude	±180°	0.25	±2°	0.5°
8	Radio transmission Keying	On-off (one discrete)	1		
9	Power on each engine (Note 3)	Full range	1 (per engine)	±2%	0.2% of full range or the resolution required to operate the aircraft
10*	Trailing edge flap and cockpit control Selection	Full range or each discrete position	2	±5% or as pilot's indicator	0.5% of full range or the resolution required to operate the aircraft
11*	Leading edge flap and cockpit control selection	Full range or each discrete position	2	±5% or as pilot's indicator	0.5% of full range or the resolution required to operate the aircraft
12*	Thrust reverser position	Stowed, in transit, and reverse	1 (per engine)		
13*	Ground spoiler/speed brake selection (selection and position)	Full range or each discrete position	1	±2% unless higher accuracy uniquely required	0.2% of full range
14	Outside air temperature	Sensor range	2	±2°C	0.3°C
15*	Autopilot/auto throttle/AFCS mode and engagement status	A suitable combination of discretes	1		
16	Longitudinal acceleration	±1 g	0.25	±0.015 g excluding a datum error of ±0.05 g	0.004 g
17	Lateral acceleration (Note 3)	±1 g	0.25	±0.015 g excluding a datum error of ±0.05 g	0.004 g

Civil Aviation (Operations of Aircraft) Regulations, 2023

18	Pilot input and/or control surface position-primary controls (pitch, roll, yaw) (Notes 4 and 8)	Application for type certification submitted to a Contracting State before 1 January 2016	Full range	0.25	$\pm 2^\circ$ unless higher accuracy uniquely required	0.2% of full range or as installed
		Application for type certification submitted to a Contracting State on or after 1 January 2016	Full range	0.125	$\pm 2^\circ$ unless higher accuracy uniquely required	0.2% of full range or as installed
19	Pitch trim position		Full range	1	$\pm 3\%$ unless higher accuracy uniquely required	0.3% of full range or as installed
20*	Radio altitude		-6 m to 750 m (-20 ft to 2 500 ft)	1	± 0.6 m (± 2 ft) or $\pm 3\%$ whichever is greater below 150 m (500 ft) and $\pm 5\%$ 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)
21*	Vertical beam Deviation (ILS/GNSS/GLS glide path MLS elevation, IRNAV/IAN vertical deviation)		Signal range	1	$\pm 3\%$	0.3% of full range
22*	Horizontal beam deviation (ILS/GNSS/GLS localizer, MLS azimuth, IRNAV/IAN lateral deviation)		Signal range	1	$\pm 3\%$	0.3% of full range
23	Marker beacon passage		Discrete	1		
24	Master warning		Discrete	1		
25	Each NAV receiver frequency selection (Note 5)		Full range	4	As installed	
26*	DME 1 and 2 distance (includes distance to runway threshold (GLS) and distance to missed approach point (IRNAV/IAN) (Notes 5 and 6)		0-370 km (0-200 NM)	4	As installed	1 852 m (1 NM)
27	Air/ground status		Discrete	1		
28*	GPWS/TAWS/GCAS status (selection of terrain display mode including pop-up display status) and (terrain alerts, both cautions and		Discrete	1		

	warnings, and advisories) and (on/off switch position)					
29*	Angle of attack		Full range	0.5	As installed	0.3% of full range
30*	Hydraulics, each system (low pressure)		Discrete	2		0.5% of full range
31*	Navigation data (latitude/longitude, ground speed and drift angle) (Note 7)		As installed	1	As installed	
32*	Landing gear and gear selector position		Discrete	4	As installed	
33*	Groundspeed		As installed	1	Data should be obtained from the most accurate system	1 kt
3 4	Brakes (left and right brake pressure, left and right brake pedal position)		(Maximum metered brake range, discretises or full range)	1	±5%	2% of full range
35*	Additional engine parameters (EPR, N ₁ , indicated vibration level, N ₂ , EGT, fuel flow, fuel cut-off lever position, N ₃ engine fuel metering valve position)	Engine fuel metering valve position: Application for type certification is submitted to a Contracting State on or after 1 January 2023	As installed	Each engine each second	As installed	2% of full range
36*	TCAS/ACAS (traffic alert and collision avoidance system)		Discrete(s)	1	As installed	
37*	Wind shear warning		Discrete	1	As installed	
38*	Selected barometric setting (pilot, co-pilot)		As installed	64	As installed	0.1 mb (0.01 in-Hg)
39*	Selected altitude (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection
40*	Selected speed (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection
41*	Selected Mach (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection
42*	Selected vertical speed (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection
43*	Selected hdg (all pilot selectable modes of operation)		As installed	1	As installed	Sufficient to determine crew selection

Civil Aviation (Operations of Aircraft) Regulations, 2023

Serial number	Parameter	Applicability	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
44*	Selected flight path (all pilot selectable modes of operation) (course/DSTRK, path angle, final approach path (IRNAV/IAN))			1	As installed	As installed
45*	Selected decision height		As installed	64	As installed	Sufficient to determine crew selection
46*	EFIS display format (pilot, co-pilot)		Discrete(s)	4	As installed	
47*	Multi-function/engine/alerts display format		Discrete(s)	4	As installed	
48*	AC electrical bus status		Discrete(s)	4	As installed	
49*	DC electrical bus status		Discrete(s)	4	As installed	
50*	Engine bleed valve position		Discrete(s)	4	As installed	
51*	APU bleed valve position		Discrete(s)	4	As installed	
52*	Computer failure		Discrete(s)	4	As installed	
53*	Engine thrust command		As installed	2	As installed	2% of full range
54*	Engine thrust target		As installed	4	As installed	2% of full range
55*	Computed centre of gravity		As installed	64	As installed	1% of full range
56*	Fuel quantity in CG trim tank		As installed	64	As installed	1% of full range
57*	Head-up display in use		As installed	4	As installed	
58*	Para-visual display on/off		As installed	1	As installed	
59*	Operational stall protection, stick shaker and pusher activation		As installed	1	As installed	
60*	Primary navigation system reference (GNSS, INS, VOR/DME, MLS, Loran C, localizer glide slope)		As installed	4	As installed	
61*	Ice detection		As installed	4	As installed	

Serial number	Parameter	Applicability	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
62*	Engine warning each engine vibration		As installed	1	As installed	
63*	Engine warning each engine over Temperature		As installed	1	As installed	
64*	Engine warning each engine oil pressure low		As installed	1	As installed	
65*	Engine warning each engine over speed		As installed	1	As installed	
66*	Yaw trim surface Position		Full range	2	±3% unless higher accuracy uniquely required	0.3% of full range
67*	Roll trim surface Position		Full range	2	±3% unless higher accuracy uniquely required	0.3% of full range
68*	Yaw or sideslip angle		Full range	1	±5%	0.5°
69*	De-icing and/or anti-icing systems selection		Discrete(s)	4		
70*	Hydraulic pressure (each system)		Full range	2	±5%	100 psi
71*	Loss of cabin pressure		Discrete	1		
72*	Cockpit trim control input position, Pitch		Full range	1	±5%	0.2% of full range or as installed
73*	Cockpit trim control input position, Roll		Full range	1	±5%	0.2% of full range or as installed
74*	Cockpit trim control input position, Yaw		Full range	1	±5%	0.2% of full range or as installed
75	All cockpit flight control input forces (control wheel, control column, rudder pedal)		Full range (±311 N (±70 lbf), ±378 N (±85 lbf), ±734 N (±165 lbf))	1	±5%	0.2% of full range or as installed
76*	Event marker		Discrete	1		
77*	Date		365 days	64		
78*	Actual navigation performance or estimated position error or estimated position Uncertainty		As installed	4	As installed	

Civil Aviation (Operations of Aircraft) Regulations, 2023

Serial number	Parameter	Applicability	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
79*	Cabin pressure altitude	Application for type certification submitted to a Contracting State on or after 1 January 2023	As installed (0 ft to 40 000 ft recommended)	1	As installed	100 ft
80*	Aeroplane computed weight	Application for type certification submitted to a Contracting State on or after 1 January 2023	As installed	64	As installed	1% of full range
81*	Flight director command (left flight director pitch command, left flight director roll command, right flight director pitch command, right flight director roll command)	Application for type certification submitted to a Contracting State on or after 1 January 2023	Full range	1	± 2°	0.5°
82*	Vertical speed	Application for type certification submitted to a Contracting State on or after 1 January 2023	As installed	0.25	As installed (32 ft/min recommended)	16 ft/min

Notes.—

2. V_s *stalling speed or minimum steady flight speed in the landing configuration is in Section “Abbreviations and Symbols”.*
 3. V_D *design diving speed.*
 4. *Record sufficient inputs to determine power.*
 5. *For aeroplanes with control systems in which movement of a control surface will back drive the pilot’s control, “or” applies. For aeroplanes with control systems in which movement of a control surface will not back drive the pilot’s control, “and” applies. In aeroplanes with split surfaces, a suitable combination of inputs is acceptable in lieu of recording each surface separately. In aeroplanes with independent pilot input on primary controls, each pilot input on primary controls needs to be recorded separately.*
 6. *If signal available in digital form.*
 7. *Recording of latitude and longitude from INS or other navigation system is a preferred alternative.*
 8. *If signals readily available.*
 9. *It is not intended that aeroplanes issued with an individual certificate of airworthiness before 1 January 2016 be modified to meet the measurement range, maximum sampling and recording intervals, accuracy limits or recording resolution guidance description detailed in this Schedule.*

Table A2.3-2. Description of applications for data link recorders

Item No.	Application type	Application description	Recording content
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.	C
2	Controller-pilot communication	This includes any application used to exchange requests, 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.	C
3	Addressed surveillance	This includes any surveillance application in which the ground sets 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.	C
4	Flight information	This includes any service used for delivery of flight information to 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.	C

Key:

C: Complete contents recorded.

M: Information that enables correlation to any associated records stored separately from the aeroplane.

*: Applications that are to be recorded only as far as is practicable given the architecture of the system.

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

No.	Parameter name	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
1	Heading:					
+	a) Heading (Magnetic or True)	$\pm 180^\circ$	1	$\pm 2^\circ$	0.5°	* Heading is preferred, if not available, yaw rate shall be recorded
	b) Yaw rate	$\pm 300^\circ/\text{s}$	0.25	$\pm 1\% + \text{drift of } 360^\circ/\text{h}$	$2^\circ/\text{s}$	
2	Pitch:					
	a) Pitch attitude	$\pm 90^\circ$	0.25	$\pm 2^\circ$	0.5°	* Pitch altitude is preferred, if not available, pitch rate shall be recorded
	b) Pitch rate	$300^\circ/\text{s}$	0.25	$\pm 1\% + \text{drift of } 360^\circ/\text{h}$	$2^\circ/\text{s}$	
3	Roll:					
	a) Roll attitude	$\pm 180^\circ$	0.25	$\pm 2^\circ$	0.5°	* If not available, roll rate shall be recorded
	b) Roll rate	$300^\circ/\text{s}$	0.25	$\pm 1\% + \text{drift of } 360^\circ/\text{h}$	$2^\circ/\text{s}$	
4	Positioning system:					
	a) Time	24 hours	1	$\pm 0.5 \text{ s}$	0.1 s	UTC time preferred where available
	b) Latitude/longitude	Latitude: $\pm 90^\circ$ Longitude: $\pm 180^\circ$	2 (1 if available)	As installed (0.00015° recommended)	0.00005°	
	c) Altitude	-300 m (-1 000 ft) to maximum certified altitude of aircraft + 1 500 m (5 000 ft)	2 (1 if available)	As installed ($\pm 15 \text{ m } (\pm 50 \text{ ft})$ recommended)	1.5 m (5 ft)	
	d) Ground speed	0-1 000 kt	2 (1 if available)	As installed ($\pm 5 \text{ kt}$ recommended)	1 kt	

No.	Parameter name	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
	e) Track	0-360°	2 (1 if available)	As installed (±2° recommended)	0.5°	
	f) Estimated error	Available range	2 (1 if available)	As installed	As installed	Shall be recorded if readily available
5	Normal acceleration	-3 g to +6 g (*)	0.25 (0.125 if available)	As installed (±0.09 g excluding a datum error of ±0.45 g recommended)	0.004 g	
6	Longitudinal acceleration	±1 g (*)	0.25 (0.125 if available)	As installed (±0.015 g excluding a datum error of ±0.05 g recommended)	0.004 g	
7	Lateral acceleration	±1 g (*)	0.25 (0.125 if available)	As installed (±0.015 g excluding a datum error of ±0.05 g recommended)	0.004 g	
8	External static pressure (or pressure altitude)	34.4 mb (3.44 in-Hg) to 310.2 mb (31.02 in-Hg) or available sensor range	1	As installed (±1 mb (0.1 in-Hg) or ±30 m (±100 ft) to ±210 m (±700 ft) recommended)	0.1 mb (0.01 in-Hg) or 1.5 m (5 ft)	
9	Outside air temperature (or total air temperature)	-50° to +90°C or available sensor range	2	As installed (±2°C recommended)	1°C	
10	Indicated air speed	As the installed pilot display measuring system or available sensor range	1	As installed (±3% recommended)	1 kt (0.5 kt recommended)	
11	Engine RPM	Full range including overspeed condition	Each engine each second	As installed	0.2% of full range	
12	Engine oil pressure	Full range	Each engine each second	As installed (5% of full range recommended)	2% of full range	
13	Engine oil temperature	Full range	Each engine each second	As installed (5% of full range recommended)	2% of full range	
14	Fuel flow or pressure	Full range	Each engine each second	As installed	2% of full range	

Civil Aviation (Operations of Aircraft) Regulations, 2023

15	Manifold pressure	Full range	Each engine each second	As installed	0.2% of full range	
16	Engine thrust/power/torque parameters required to determine propulsive thrust/power*	Full range	Each engine each second	As installed	0.1% of full range	* Sufficient parameters e.g. EPR/N ₁ or torque/N _p as appropriate to the particular engine shall be recorded to determine power in both normal and reverse thrust. A margin for possible overspeed should be provided.
17	Engine gas generator speed (N _g)	0–150%	Each engine each second	As installed	0.2% of full range	
18	Free power turbine speed (N _f)	0–150%	Each engine each second	As installed	0.2% of full range	
19	Coolant temperature	Full range	1	As installed (±5°C recommended)	1°C	
20	Main voltage	Full range	Each engine each second	As installed	1 Volt	
21	Cylinder head Temperature	Full range	Each cylinder each second	As installed	2% of full range	
22	Flaps position	Full range or each discrete position	2	As installed	0.5°	
23	Primary flight control surface position	Full range	0.25	As installed	0.2% of full range	
24	Fuel quantity	Full range	4	As installed	1% of full range	
25	Exhaust gas temperature	Full range	Each engine each second	As installed	2% of full range	

No.	Parameter name	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
26	Emergency voltage	Full range	Each engine each second	As installed	1 Volt	
27	Trim surface position	Full range or each discrete position	1	As installed	0.3% of full range	
28	Landing gear position	Each discrete position*	Each gear every two seconds	As installed		* Where available, record up-and-locked and down-and-locked position
29	Novel/unique aircraft features	As required	As required	As required	As required	

PART VII
CIVIL AVIATION (OPERATION OF AIRCRAFT - GENERAL AVIATION (HELICOPTER))
ARRANGEMENT OF SECTIONS

Sections

SUB PART I
PRELIMINARY PROVISIONS

1. Title.
2. Application

SUB PART II
GENERAL

3. Compliance with Laws, Regulations and Procedures
4. Dangerous Goods - General Application
5. Use of Psychoactive Substances
6. Specific Approvals

SUB PART III
FLIGHT OPERATIONS

7. Adequacy of Operating Facilities
8. Heliport or Landing Location Operating Minima
9. Passenger Briefing
10. Helicopter Airworthiness and Safety Precaution
11. Weather Reports and Forecasts
12. Limitations imposed by weather conditions-VFR Flight
13. Limitations imposed by weather conditions-IFR Flight
14. Heliport Operating Minima
15. Flight in Icing Conditions
16. Alternate Heliports
17. Fuel and Oil Requirements
18. Inflight Fuel Management
19. Oxygen supply
20. Use of oxygen
21. In-flight emergency instruction
22. Weather reporting by pilots
23. Hazardous flight conditions
24. Fitness of flight crew members
25. Flight crew members at duty stations
26. Instrument flight procedures
27. Instruction - General
28. Refuelling with passengers on board or rotors turning
29. Over-water flights

SUB PART IV

HELICOPTER PERFORMANCE OPERATING LIMITATIONS

30. Operating limitations

SUB PART V

HELICOPTER INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

31. General
32. Instruments
33. Equipment
34. Marking of break-in points

35. Instruments and Equipment for Flights Operated Under VFR And IFR — By Day and Night
36. All Helicopters on Flights Over Water - Means of flotation
37. Emergency equipment
38. All helicopters on flights over designated land areas
39. All helicopters on high altitude flights
40. All Helicopters Required to Comply with The Noise Certification in Environmental Protection (Aircraft Noise)
41. Flight Recorders
42. Flight data recorders and aircraft data recording systems - Applicability
43. Recording technology- FDR
44. Duration-FDR
45. Cockpit voice recorders and cockpit audio recording systems – Applicability
46. Recording technology-CVR
47. Duration-CVR
48. Data link recorders
49. Duration
50. Correlation
51. Flight recorders — *Construction and installation*
52. Operation
53. Continued serviceability
54. Flight recorders electronic documentation
55. Emergency locator transmitter (ELT)
56. Helicopters required to be equipped with a pressure-altitude reporting transponder
57. Microphones
58. 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)
59. EFB equipment
60. EFB functions
61. EFB specific approval
62. Helicopter operated under an Article 83 *bis* agreement

SUB PART VI

HELICOPTER COMMUNICATION, NAVIGATION AND SURVEILLANCE EQUIPMENT

63. Communication Equipment
64. Navigation Equipment
65. Surveillance Equipment
66. Communication and Surveillance (PBCS) Manual (Doc 9869)

SUB PART VII

HELICOPTER CONTINUING AIRWORTHINESS

67. General
68. Owner's Continuing Airworthiness responsibilities
69. Continuing Airworthiness records
70. Continuing Airworthiness information
71. Modification and Repairs
72. Maintenance release

SUB PART XIII

HELICOPTER FLIGHT CREW

73. Composition of the flight crew

- 74. Flight Crew Member Emergency Duties
- 75. Qualifications (Recent Experience PIC and Co-pilot)
- 76. Pilot-in-Command Operational Qualifications
- 77. Pilot Proficiency Checks
- 78. Flight crew equipment

SCHEDULES

- First Schedule : General Aviation Specific Approvals
- Second Schedule : Flight Recorders
- Third Schedule : Article 83 Bis Agreement Summary
- Fourth Schedule : Contents Of An Operations Manual
- Fifth Schedule : Marking Of Break-In Points

SUB PART I

Title

1. These regulations may be cited as the Operation of Aircraft – General Aviation (Helicopters).

Application of Part

3. These regulations shall be applicable to all operations of helicopters engaged in general aviation.

SUB PART II GENERAL PROVISIONS

Compliance with laws regulations and procedures

3. (1) A PIC shall comply with the relevant laws, regulations and procedures of the States in which the helicopter is operated.

(2) The PIC 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 engines are started until the helicopter finally comes to rest at the end of the flight, with the engines shut down and the rotor blades stopped.

(3) 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 PIC shall notify the appropriate local authority without delay.

(4) Where required by the State in which the incident occurs, the PIC shall submit a report on any such violation to the appropriate authority of such State and the PIC shall also submit a copy of it to the Authority and such reports shall be submitted within ten days.

(5) The PIC 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.

(6) The PIC shall 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.

(7) Operators shall ensure that an aeroplane—

- (a) has equipment and instruments;
- (b) has communication, navigation and surveillance equipment,
- (c) in the manner provided in the Civil Aviation (Instrument and Equipment) Regulations.

Dangerous Goods - General Applicability

4. (1) A PIC of a helicopter to which these regulations applies shall not accept for carriage, load and carry dangerous goods in any general aviation helicopter unless in accordance with the Technical Instructions for the Safe Transport of Dangerous Goods by Air.

(2) A PIC of a helicopter involved in general aviation operations shall ensure that the general exceptions contained in part 1.1.1.5 of the technical instructions and exceptions contained in part 1.2.2 of the technical instructions also apply to general aviation helicopter operations.

Use of psychoactive substances.

5. Provisions concerning the use of psychoactive substances are contained in the Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019, and Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018.

Specific approvals

6. (1) A pilot-in-command shall not conduct operations for which a specific approval is required unless such approval has been issued by the Authority.

(2) Specific approvals shall follow the layout and contain at least the information specified in the First Schedule .

SUB PART III
FLIGHT OPERATIONS

Adequacy of operating Facilities

7. (1) No PIC shall commence a flight

unless it has been ascertained by every reasonable means available that the ground 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.

Heliport or landing location operating minima

8. (1) The PIC shall establish operating minima in accordance with criteria specified by the Authority for each heliport or landing location to be used in operations.

(2) When establishing aerodrome operating minima referred to in subsection (1), any conditions that may be prescribed in the list of specific approvals shall be observed.

(3) The minima specified in subsection (1) shall not be lower than any that may be established by the State of the Aerodrome, except when specifically approved by that State.

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

(5) Where the operational credit relates to low visibility operations, the Authority shall issue a specific approval.

(6) The authorisations specified in subsection (4) shall not affect the classification of the instrument approach procedure.

(7) For the purpose of these regulations, operational credit shall include—

(a) for the purposes of an approach ban specified in section 14 a minima below the heliport or landing location operating minima;

(b) reducing or satisfying the visibility requirements; or

(c) requiring fewer ground facilities as compensated for by airborne capabilities.

(8) When issuing a specific approval for the operational credit the Authority shall ensure that the —

(a) helicopter 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) the owner or operator has —

(i) carried out a safety risk assessment of the operations supported by the equipment;

(ii) established and documented normal and abnormal procedures and MEL;

(iii) established a training program for the flight crew members and relevant personnel involved in the flight preparation;

(iv) established a system for data collection, evaluation and trend monitoring for low visibility operations for which there is an operational credit;

(v) the owner has instituted appropriate procedures with respect to continuing airworthiness maintenance and repair practices and programmes.

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

Passenger briefing

9. (1) The PIC 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.

(2) The PIC 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.

Helicopter Airworthiness and Safety Precaution

10. A flight shall not be commenced until the PIC is satisfied that—

- (a) the helicopter is airworthy, duly registered and that the 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 the Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018 and any other requirements of appropriate regulations.
- (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.

Weather Reports and Forecasts

11. (1) Before commencing a flight, a PIC shall ensure that he or she is familiar with all available meteorological information appropriate to the intended flight.

(2) Preparation for a flight away from the vicinity of the place of departure, and for every flight under IFR, shall include—

- (a) a study of available current weather reports and forecasts; and
- (b) 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.

Limitations imposed by weather conditions – VFR Flight

12. 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 the VFR.

Limitations imposed by weather conditions – IFR Flight

13. (1) Where an alternate heliport 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.

(2) Where no alternate heliport is required, a flight to be conducted in accordance with IFR 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

Heliport operating minima

14. (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) No pilot in command shall continue an instrument approach below 300 m or 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) where, 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.

(4) Subject to subsection (3), a helicopter shall not continue its approach-to-land beyond a point at which the limits of the heliport operating minima would be infringed.

Flight in icing conditions

15. (1) 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.

Alternate Heliports

16. (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 section 13(2) prevail; or
- (b) the heliport or landing location of intended landing is isolated and no alternate heliport or landing location is available; and
- (c) an instrument approach procedure is prescribed for the isolated heliport of intended landing; and
- (d) a point of no return or 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, and 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) No person shall use an Offshore alternates when it is possible to carry enough fuel to have an onshore alternate, and Offshore alternates shall not be used in a hostile environment.

Fuel and Oil requirements

17. (1) For all helicopters, No PIC shall commence a flight 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 and in addition a reserve shall be carried to provide for contingencies.

(2) For VFR operations, the PIC shall ensure that the fuel and oil carried in order to comply with subsection (1) is, 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 and specified by the Authority in the Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018.

(3) For IFR operations, the PIC shall ensure that the fuel and oil carried in order to comply with subsection (1) is, at least the amount to allow the helicopter:

- (a) Where no alternate is required, in accordance with section 13 (2), to fly to and execute an approach at the heliport or landing location to which the flight is planned, and thereafter to have—

- (i) a final reserve fuel to fly 30 minutes at holding speed at 450 m or 1 500 ft above the destination heliport or landing location under standard temperature conditions and approach and land; and
 - (ii) an additional amount of fuel to provide for the increased consumption on the occurrence of potential contingencies.
- (b) Where an alternate is required, in terms of section 13 (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:
- (i) fly to and execute an approach at the alternate specified in the flight plan; and then
 - (ii) 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
 - (iii) have an additional amount of fuel to provide for the increased consumption on the occurrence of potential contingencies.
- (c) Where no alternate heliport or landing location is available, that is: the heliport of intended landing is isolated and no alternate is available), to fly to the heliport to which the flight is planned and thereafter for a period as specified by the Authority in the Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018.
- (4) In computing the fuel and oil required in subsection (1), the PIC shall consider at least the following—
- (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 pressurisation, 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 oil consumption.
- (5) 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.

In Flight Fuel Management.

18. (1) The PIC 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 PIC 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 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 17.

Oxygen supply

19. (1) Approximate altitudes in the Standard Atmosphere corresponding to the values of absolute pressure used in these regulations are as follows—

Absolute pressure	Meters	Feet
700 hPa	3 000	10 000
620hPa	4 000	13 000

- (2) A PIC shall not commence a flight to be operated at altitudes at which the atmospheric pressure in personnel compartments will be less than 700 hPa 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.
- (3) A PIC shall not commence 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 a proportion of the 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.

Use of Oxygen

20. 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 section 19 (2) and (3).

In -Flight Emergency Instruction.

21. In an emergency during flight, the PIC shall ensure that all persons on board are instructed in such emergency action as may be appropriate to the circumstances.

Weather Reporting by Pilots.

22. The PIC shall ensure that, where weather conditions likely to affect the safety of other aircraft are encountered, they shall be reported as soon as possible.

Hazardous Flight Conditions

23. The PIC shall report hazardous flight conditions, other than those associated with meteorological conditions, encountered en route as soon as possible and the reports so rendered shall give such details as may be pertinent to the safety of other aircraft.

Fitness of Flight Crew Members

24. (1) The PIC shall be responsible for ensuring that a flight—

- (a) shall not be commenced when any flight crew member is incapacitated from performing duties by any cause such as injury, sickness, fatigue, the effects of alcohol or drugs; and
- (b) shall 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, lack of oxygen.

Flight Crew Members at Duty Stations

25. (1) The PIC shall ensure that all flight crew members —

- (a) required to be on flight deck duty shall be at their stations during take-off and landing;
 - (b) required to be on flight deck duty during the enroute phase of a flight, 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;
 - (c) keep their seat belt fastened when at their stations;
 - (d) occupying a pilot's seat, where safety harnesses are provided, keep the safety harness fastened during the take-off and landing phases;
- (2) Notwithstanding subsection (1) (d), 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.

Instrument Flight Procedures.

26. (1) The PIC shall ensure that 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) The PIC shall ensure that a helicopter 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.

Instruction — General

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

Refuelling with passengers on board or Rotors turning

28. (1) No person shall refuel a helicopter when passengers are embarking, on board or disembarking or when the rotor is turning unless it is attended by the PIC 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, the PIC shall ensure that a two-way communication is maintained by helicopter inter-communications system or other suitable means between the ground crew supervising the refuelling and the PIC or other qualified personnel required by the subsection (1).

Over water-flights

29. (1) An owner or pilot in command shall ensure that a helicopter on flights over water in a hostile environment in accordance with section 36 shall be certificated for ditching and the sea state shall be an integral part of ditching information.

SUB PART IV
HELICOPTER PERFORMANCE OPERATING LIMITATIONS

Operating limitations

30. (1) A helicopter owner or PIC shall ensure that every helicopter shall be operated—
- (a) in compliance with the terms of its airworthiness certificate or equivalent document;
 - (b) within the operating limitations prescribed by the Authority; and
 - (c) within the mass limitations imposed by compliance with the applicable noise requirements as specified by the Authority, unless otherwise authorised, 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.
- (2) An owner or PIC shall ensure that placards, listings, instrument markings, or combinations thereof, containing those operating limitations prescribed by the Authority for visual presentation, are displayed in the helicopter.
- (3) Where helicopters are operating to or from heliports in a congested hostile environment, the competent authority of the State in which the heliport is situated shall take such precautions as are necessary to control the risk associated with an engine failure.

SUB PART V
HELICOPTER INSTRUMENTS, EQUIPMENT
AND FLIGHT DOCUMENTS

ALL HELICOPTERS ON ALL FLIGHTS

General

31. (1) A helicopter owner shall ensure that, in addition to the minimum equipment required for the issuance of a certificate of airworthiness, the instruments, equipment and flight documents in this SUB PART are installed or carried, as appropriate, in helicopters according to the helicopter use and to the circumstances under which the flight are to be conducted.

(2) The instruments and equipment referred to in sub section (1), including their installation, shall be approved or accepted by the State of Registry.

Instruments

32. A helicopter owner shall ensure that a helicopter is equipped with instruments which will enable the flight crew to control the flight path of the helicopter, carry out any required procedural manoeuvre, and observe the operating limitations of the helicopter in the expected operating conditions.

Equipment

33. (1) A helicopter owner shall ensure that a helicopter is equipped with or carry-on board—
- (a) an accessible first-aid kit;
 - (b) portable fire extinguishers of a type which, when discharged, will not cause dangerous contamination of the air within the helicopter and at least one shall be located in:
 - (i) the pilot's compartment; and
 - (ii) 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 or older; and
 - (d) a seat belt for each seat and restraining belts for each berth;
 - (e) the following manuals, charts and information—

- (i) the flight manual or other documents or information concerning any operating limitations prescribed for the helicopter by the certificating authority of the State of Registry, required for the application of Sub Part IV Helicopter Performance Operating Limitations;
- (ii) any specific approval issued by the State of Registry, if applicable, for the operations to be conducted;
- (iii) current and suitable charts for the route of the proposed flight and all routes along which it is reasonable to expect that the flight may be diverted;
- (iv) procedures, as prescribed Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018, for PIC of intercepted aircraft;
- (v) a list of visual signals for use by intercepting and intercepted aircraft, as contained in Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018;
- (vi) the journey log book for the helicopter; and

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

(2) An owner or PIC shall ensure that 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—

- (a) meet the applicable minimum performance requirements of the State of Authority; and
 - (b) is 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 Layer*, Annex A, Group II.
- (3) An owner or PIC shall ensure that a helicopter on all flights shall be equipped with—
- (a) the ground-air signal codes for search and rescue purposes;
 - (b) a safety harness for each flight crew member seat which includes shoulder straps and a seat belt which may be used separately.

Marking of break-in points

34. (1) Where 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 in the Fifth Schedule.

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

(3) Where 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.

Instruments And Equipment for Flights Operated Under VFR And IFR — By Day and Night

35. (1) A pilot in command shall ensure that a helicopter operating in accordance with —

- (a) VFR by day shall be equipped with—
 - (i) a magnetic compass;
 - (ii) a sensitive pressure altimeter;
 - (iii) an airspeed indicator; and
 - (iv) such additional instruments or equipment as may be prescribed by the appropriate authority; and
 - (v) or shall carry, a means of measuring and displaying the time in hours, minutes and seconds.
- (b) VFR at night shall be equipped with—
 - (i) the equipment specified in paragraph (a);
 - (ii) an attitude indicator (artificial horizon) for each required pilot;
 - (iii) a slip indicator;
 - (iv) a heading indicator (directional gyroscope);
 - (v) a rate of climb and descent indicator; and
 - (vi) such additional instruments or equipment as may be prescribed by the Authority;
 - (vii) the lights required by Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018 for aircraft in flight or operating on the movement area of a heliport;

- (viii) a landing light;
- (ix) illumination for all flight instruments and equipment that are essential for the safe operation of the helicopter;
- (x) lights in all passenger compartments; and
- (xi) a flashlight for each crew member station.

(2) The landing light specified in subsection (1) (b) shall be trainable, at least in the vertical plane.

(3) An helicopter owner or PIC shall ensure that a helicopter, operating in accordance with IFR, or when the helicopter cannot be maintained in a desired attitude without reference to one or more flight instruments, shall be equipped with—

- (a) a magnetic compass;
- (b) a sensitive pressure altimeter;
- (c) an airspeed indicating system with a means of preventing malfunctioning due to either condensation or icing;
- (d) a slip indicator;
- (e) an attitude indicator (artificial horizon) for each required pilot and one additional attitude indicator;
- (f) a heading indicator (directional gyroscope);
- (g) a means of indicating whether the supply of power to the gyroscopic instruments is adequate;
- (h) a means of indicating on the flight deck the outside air temperature;
- (i) a rate of climb and descent indicator;
- (j) such additional instruments or equipment as may be prescribed by the appropriate authority;
- (k) if operated by night, the lights specified in subsection (1) (b) (vii) to (xi) and subsection (2); and
- (l) or shall carry, a means of measuring and displaying the time in hours, minutes and seconds.

All Helicopters on Flights Over Water - Means of flotation

36. (1) An owner or PIC shall ensure that a helicopter intended to be flown over water is 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 over-water operations, as required by the Authority; or
- (b) flying at a distance from land beyond which after an engine failure the helicopter cannot execute a forced landing through auto rotation.

(2) When determining the distance from land referred to in paragraph (a) the PIC shall take into consideration the environmental conditions and the availability of search and rescue facilities.

Emergency equipment

37. (1) A helicopter owner or PIC shall ensure that a helicopter operating in accordance with the provisions of section 36 shall be equipped with—

- (a) one life jacket, or equivalent individual flotation device, for each person on board, stowed in a position easily accessible from the seat of the person for whose use it is provided;
- (b) when not precluded by consideration related to the type of helicopter used, life-saving rafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency, provided with such life-saving equipment including means of sustaining life as is appropriate to the flight to be undertaken; and
- (c) equipment for making the pyrotechnical distress signals described in Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018.

(2) 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 subsection (1) (a) shall be carried.

(3) Each life jacket and equivalent individual flotation device, when carried in accordance with this section and section 36, shall be equipped with a means of electric illumination for the purpose of facilitating the location of persons.

(4) An operator or PIC shall ensure that on any helicopter fitted with life rafts, at least 50 per cent of the life rafts specified in subsection (1) (b) and carried in accordance with the provisions of this section shall be deployable by remote control.

(5) An owner or PIC shall ensure that rafts that are not deployable by remote control as prescribed in subsection (4) and have a mass of more than 40 kg shall be equipped with some means of mechanically assisted deployment.

All helicopters on flights over designated land areas

38. An owner or PIC shall ensure that a helicopter, when operated across land areas which have been designated by the State concerned as areas in which search and rescue would be especially difficult, shall be equipped with such signalling devices and life-saving equipment, including means of sustaining life, as may be appropriate to the area overflown.

All helicopters on high altitude flights

39. An owner or PIC shall ensure that all —

- (a) unpressurised helicopters intended to be operated at high altitudes shall carry equipment for storing and dispensing the oxygen supplies required in section 19;
- (b) pressurised helicopters intended to be operated at high altitudes should carry emergency oxygen storage and dispensing equipment capable of storing and dispensing the oxygen supplies required in section 19.

*All Helicopters Required to Comply with The Noise Certification
In Environmental Protection (Aircraft Noise)*

40. (1) A helicopter owner or pilot in command shall ensure that all helicopters required to comply with the noise certification specified by the Authority, shall carry a document attesting noise certification.

(2) Where 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.

Flight Recorders

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

(2) Parameters to be recorded are listed in Table A4-1 contained in the Second Schedule.

Flight data recorders and aircraft data recording systems - Applicability

42. (1) A helicopter owner or pilot in command shall ensure that a helicopter of a maximum certificated take-off mass of over —

- (a) 3 175 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2016 shall be equipped with an FDR which shall record at least the first 48 parameters listed in Table A4-1 contained in the Second Schedule;
- (b) 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 Table A4-1 of Second Schedule;
- (c) 3 175 kg, up to and including 7 000 kg, for which the individual certificate of airworthiness is first issued on or after 1 January 1989, should be equipped with an FDR which should record at least the first 15 parameters listed in Table A4-1 contained in the Second Schedule.

Recording technology-FDR

43. An owner or PIC shall ensure that FDRs do not use engraving metal foil, frequency modulation (FM), photographic film or magnetic tape.

Duration-FDR

44. An owner or PIC shall ensure that FDRs retain the information recorded during at least the last 10 hours of their operation.

Cockpit voice recorders and cockpit audio recording systems - Applicability

45. An owner of a helicopter of a maximum certificated take-off mass of over—

- (a) 7 000 kg shall ensure that it is equipped with a CVR and or for helicopters not equipped with an FDR, at least main rotor speed shall be recorded on the CVR.

- (b) 3 175 kg for which the individual certificate of airworthiness is first issued on or after 1 January 1987 should be equipped with a CVR. For helicopters not equipped with an FDR, at least main rotor speed shall be recorded on the CVR.

Recording technology-CVR

46. An owner or PIC shall ensure that CVRs shall not use magnetic tape or wire.

Duration-CVR

47. An owner or PIC shall ensure that a helicopter required to be equipped with a CVR is equipped with a CVR which shall retain the information recorded during at least the last two hours of its operation.

Data link recorders

48. (1) An owner or PIC shall ensure that a helicopter for which the individual certificate of airworthiness is first issued on or after 1 January 2016, which use any of the data link communications applications referred to in Second Schedule and are required to carry a CVR, shall record the data link communications messages on a crash-protected flight recorder.

(2) An owner or PIC shall ensure that a helicopter for which the individual certificate of airworthiness was first issued before 1 January 2016, that are required to carry a CVR and are modified on or after 1 January 2016 to use any of the data link communications applications referred to in Second Schedule, shall record the data link communications messages on a crash-protected flight recorder.

Duration

49. An owner or PIC shall ensure that the minimum recording duration shall be equal to the duration of the CVR.

Correlation

50. An owner or PIC shall ensure that Data link recording shall be able to be correlated to the recorded cockpit audio.

Flight recorders — Construction and installation

51. (1) An owner or PIC 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.

(2) Flight recorders shall meet the prescribed crashworthiness and fire protection specifications.

Operation

52. (1) No person shall switch off a Flight recorder during flight time.

(2) To preserve flight recorder records, the PIC shall deactivate the flight recorder upon completion of flight time following an accident or incident.

(3) No person shall reactivate a flight recorder following an accident or incident before their disposition as determined in accordance with Civil Aviation (Accidents and Incidents Investigation) Regulations.

(4) The need for removal of the flight recorder records from the helicopter shall 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.

Continued serviceability

53. (1) An owner or PIC shall ensure that operational checks and evaluations of recordings from the flight recorder systems shall be conducted to ensure the continued serviceability of the recorders.

(2) The Procedures for the inspections of the flight recorder systems are given in Second Schedule.

Flight recorders electronic documentation

54. An owner or PIC shall ensure the documentation requirement concerning FDR parameters provided to accident investigation authorities is in electronic format and take account of industry specifications.

Emergency locator transmitter (ELT)

55. (1) A helicopter owner shall ensure that a helicopter operating in —
- (a) 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 36, with at least one automatic ELT and one ELT(S) in a raft or life jacket;
 - (b) performance Class 3 shall be equipped with at least one automatic ELT and, when operating on flights over water as described in section 36, 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 subsection 1 (1)(a) and (b) shall operate in accordance with the relevant provisions of Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019.

Helicopters required to be equipped with a pressure-altitude reporting transponder

56. An owner shall ensure that a helicopter is equipped with a pressure-altitude reporting transponder which operates in accordance with the relevant provisions of Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019.

Microphones

57. A PIC shall ensure that all flight crew members required to be on flight deck duty should communicate through boom or throat microphones.

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)

58. (1) Where helicopters are equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, or any combination of those systems into a hybrid system, the State of Registry shall establish criteria for the use of such systems for the safe operation of a helicopter.

(2) In establishing operational criteria for the use of automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, the State of Registry shall require that—

- (a) the equipment meets the appropriate airworthiness certification requirements;
- (b) the owner has carried out a safety risk assessment associated with the operations supported by the automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS;
- (c) the owner 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.

Electronic Flight Bags (EFB)-EFB equipment

59. Where portable EFBs are used on board a helicopter, the PIC or the owner shall ensure that they do not affect the performance of the helicopter systems, equipment or the ability to operate the helicopter.

EFB functions

60. (1) Where EFBs are used on board a helicopter, the PIC or the owner shall—
- (a) assess the safety risks associated with each EFB function
 - (b) establish 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.
- (2) The Authority shall issue a specific approval for the operational use of EFB functions to be used for the safe operation of helicopters on the form prescribed in the First Schedule.

EFB specific approval

61. (1) 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 owner has assessed the risks associated with the operations supported by the EFB functions;

- (c) the owner has established requirements for redundancy of the information (if appropriate) contained and displayed by the EFB functions;
- (d) the owner has established and documented procedures for the management of the EFB functions including any databases it may use; and
- (e) the owner has established and documented the procedures for the use of, and training requirements for, the EFB functions.

Helicopter operated under an Article 83 bis agreement

62. (1) An owner 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 principal location of a general aviation operator, shall carry a certified true copy of the agreement summary, in either an electronic or hard copy format.

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

(3) The agreement summary of an Article 83 bis agreement shall be accessible to a civil aviation safety inspector to determine which functions and duties are transferred by the State of Registry to the State of the principal location of a general aviation 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 the principal location of a general aviation operator.

(5) The agreement summary of the article 83bis specified in this section shall contain the information in Third Schedule and shall follow the layout as indicated in Third Schedule.

SUB PART VI

HELICOPTER COMMUNICATION, NAVIGATION AND SURVEILLANCE EQUIPMENT

Communication Equipment

63. (1) An owner or PIC shall ensure that a helicopter operated in accordance with IFR or at night shall be provided with radio communication equipment.

(2) The equipment referred to in subsection (1) shall be capable of conducting two-way communication with those aeronautical stations and on those frequencies prescribed by the appropriate authority.

(3) Where compliance with subsection (2) requires that more than one communication equipment unit be provided, each shall be independent of the other or others to the extent that a failure in anyone will not result in failure of any other.

(4) An owner or PIC ensure that a helicopter operated in accordance with VFR, but as a controlled flight, is, unless exempted by the appropriate authority, provided with radio communication equipment capable of conducting two-way communication at any time during flight with such aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

(5) An owner or PIC shall ensure that a helicopter to be operated on a flight to which the provisions of section 36 apply, unless exempted by the appropriate authority, is provided with radio communication equipment capable of conducting two-way communication at any time during flight with such aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

(6) The radio communication equipment required in accordance with subsections (1) to (5) shall provide for communication on the aeronautical emergency frequency 121.5 MHz.

(7) 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 in subsections (1) to (6)—

- (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) where the helicopter is operated in accordance with a MEL, have information relevant to the helicopter RCP specification capabilities included in the MEL.

(8) The State of Registry shall establish criteria for operations where an RCP specification for PBC has been prescribed.

(9) In establishing criteria for operations where an RCP specification for PBC has been prescribed, the State of Registry shall require that the operator or owner establish—

- (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.
- (10) The State of Registry shall ensure that, in respect of those helicopters mentioned in subsection (7), adequate provisions exist for—
- (a) receiving the reports of observed communication performance issued by monitoring programmes established in accordance with Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019; and
 - (b) taking immediate corrective action for individual helicopters, helicopter types or operators identified in such reports as not complying with the RCP specifications.

Navigation Equipment

64. (1) A helicopter shall be provided with navigation equipment which will enable it to proceed—
- (a) in accordance with its flight plan; and
 - (b) in accordance with the requirements of air traffic services;
- except when, if not so precluded by the appropriate authority, navigation for flights under VFR is accomplished by visual reference to landmarks.
- (2) For international general aviation, landmarks shall be located at least every 110 km (60 NM).
- (3) For operations where a navigation specification for performance-based navigation (PBN) has been prescribed, a helicopter shall, in addition to the requirements specified in subsection (1)—
- (a) be provided with navigation equipment which will enable it to operate in accordance with the prescribed navigation specifications;
 - (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) where the helicopter is operated in accordance with a MEL, have information relevant to the helicopter navigation specification capabilities included in the MEL.
- (4) The State of Registry shall establish criteria for operations where a navigation specification for PBN has been prescribed.
- (5) In establishing criteria for operations where a navigation specification for PBN has been prescribed, the State of Registry shall require that the operator or owner establish—
- (a) normal and abnormal procedures, including contingency procedures;
 - (b) flight crew qualification and proficiency requirements, in accordance with the appropriate navigation specifications;
 - (c) training for relevant personnel consistent with the intended operations; and
 - (d) appropriate maintenance procedures to ensure continued airworthiness, in accordance with the appropriate navigation specifications.
- (6) The Authority shall issue a specific approval for operations based on PBN authorisation required (AR) navigation specifications on the form prescribed in First Schedule
- (7) The helicopter shall be sufficiently provided with navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment will enable the helicopter to navigate in accordance with section 64 (2) and, where applicable, section 64 (3).
- (8) An owner or PIC shall ensure that on flights in which it is intended to land in instrument meteorological conditions, a helicopter is provided with appropriate navigation equipment providing guidance to a point from which a visual landing can be effected.
- (9) The equipment referred to in subsection (8) shall be capable of providing such guidance at each heliport at which it is intended to land in instrument meteorological conditions and at any designated alternate heliports.

Surveillance Equipment

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

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

- (a) be provided with surveillance equipment which will enable it to operate in accordance with the prescribed RSP specifications;
- (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) when operated in accordance with a MEL, have information relevant to the helicopter RSP specification capabilities included in the MEL.

Communication and Surveillance (PBCS) Manual (Doc 9869).

66. (1) The State of Registry shall establish criteria for operations where an RSP specification for PBS has been prescribed. In establishing criteria for operations where an RSP specification for PBS has been prescribed, the State of Registry shall require that the operator or owner establish—

- (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.

(2) The State of Registry shall ensure that, in respect of those helicopters mentioned in section 65 (2), adequate provisions exist for—

- (a) receiving the reports of observed surveillance performance issued by monitoring programmes established in accordance with Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019; and
- (b) taking immediate corrective action for individual helicopter, helicopter types or operators identified in such reports as not complying with the RSP specifications.

SUB PART VII
HELICOPTER CONTINUING AIRWORTHINESS

General

67. For the purpose of this SUB PART “helicopter” includes: engines, power transmissions, rotors, components, accessories, instruments, equipment and apparatus including emergency equipment.

Owner’s Continuing Airworthiness Responsibilities

68. (1) An owner of a helicopter, or in the case where it is leased, the lessee, shall ensure that:

- (a) the helicopter is maintained in an airworthy condition;
- (b) the operational and emergency equipment necessary for the intended flight is serviceable;
- (c) the certificate of airworthiness of the helicopter remains valid; and
- (d) the maintenance of the helicopter is performed in accordance with a maintenance programme acceptable to the Authority.

(2) An owner or the lessee shall not operate the helicopter unless maintenance on the helicopter, including any associated engine, rotor and part, is carried out—

- (a) by an organisation complying with Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018 requirements that are either approved by the Authority of the helicopter by another Contracting State and are accepted by the Authority; or
- (b) by a qualified person or organisation in accordance with procedures that are authorised by the Authority;

and there is a maintenance release in relation to the maintenance carried out.

Continuing Airworthiness Records

69. (1) The owner shall ensure that the following records are kept for the periods mentioned in subsection (2):

- (a) The total time in service hours, calendar time and cycles, as appropriate of the helicopter;
- (b) the current status of compliance with all mandatory continuing airworthiness information;
- (c) appropriate details of modifications and repairs to the helicopter;

- (d) the time in service since last overhaul of the helicopter or its components subject to a mandatory overhaul life;
- (e) the current status of the helicopter's compliance with the maintenance programme; and
- (f) The detailed maintenance records to show that all requirements for signing of a maintenance release have been met.

(2) The records in subsection (1)(a) to(e) shall be kept for a minimum period of 180 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 1 year after the signing of the maintenance release.

(3) Where a helicopter is leased, the lessee of that helicopter shall comply with the requirements of subsection (1) and (2), as applicable while the helicopter is leased,

(4) The 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.

Continuing Airworthiness Information

70. An owner of a helicopter over 3 175 kg maximum certificated take-off mass, or in the case where it is leased, the lessee, shall, as required by the Authority, ensure that the information resulting from maintenance and operational experience with respect to continuing airworthiness is transmitted in accordance with the Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018.

Modifications and Repairs

71. All modifications and repairs shall comply with airworthiness requirements acceptable to the Authority, and the owner shall establish procedures to ensure that the substantiating data supporting compliance in accordance with the Airworthiness requirements are retained.

Maintenance Release

72. (1) when maintenance is carried out by an approved maintenance organization, the maintenance release shall be issued by the approved maintenance organization in accordance with the provisions of the Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018.

(2) When 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 with Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019 to certify that the maintenance work performed has been completed satisfactorily and in accordance with data and procedures acceptable to the Authority.

(3) When maintenance is not carried out by an approved maintenance organization, the maintenance release shall include the following—

- (a) basic details of the maintenance carried out;
- (b) the date such maintenance was completed; and
- (c) the identity of the person or persons signing the release.

SUB PART XIII HELICOPTER FLIGHT CREW

Composition of the flight crew

73. An owner of a helicopter shall ensure that the number and composition of the flight crew shall not be less than that specified in the operations manual.

Flight Crew Member Emergency Duties

74. An owner of a helicopter 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.

Qualifications (Recent Experience PIC and Co-pilot)

75. (1) An owner of a helicopter 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 subsection (1) for each variant or each type of helicopter can be combined.

Pilot-in-Command Operational Qualifications

76. (1) No owner of a helicopter shall utilise 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 subsections (2) and (3).

(2) Each pilot referred to in subsection (1) shall demonstrate to the operator an adequate knowledge of—

- (a) the operation to be flown, including knowledge of—
 - (vi) the terrain and minimum safe altitudes;
 - (vii) the seasonal meteorological conditions;
 - (viii) the meteorological, communication and air traffic facilities, services and procedures;
 - (ix) the search and rescue procedures; and
 - (x) the navigation facilities and procedures associated with the route or area in which the flight is to take place; and
- (b) 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;
- (c) 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.

Pilot Proficiency Checks

77. (1) In this section—

“eligibility period” means the three month period including the month prior, the month due, and the month after any due date specified in this section.

(2) A crew member who is required to take a proficiency check or recurrent training to maintain a qualification for shall complete those requirements at any time during the eligibility period.

(3) For calculation of the next due date, completion of the requirement in subsection (2) at any time during the period shall be considered as completed in the month due.

(4) An owner or 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.

(5) Where the operation may be conducted under the instrument flight rules, the owner or operator shall ensure that the pilot’s competence to comply with such rules is demonstrated to either a check pilot of the operator or a representative of the State issuing the pilot licence

(6) The pilot proficiency checks referred to in subsection (4) shall be—

- (a) performed once every year within the eligibility period as defined in subsection (1);
- (b) conducted by the Authority or a designated examiner.

(7) No pilot shall undertake a proficiency check outside the eligibility period without an approval from the Authority.

Flight crew equipment

78. 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 privilege

FIRST SCHEDULE
GENERAL AVIATION SPECIFIC APPROVALS

SPECIFIC APPROVAL				
ISSUING AUTHORITY and CONTACT DETAILS¹				
Issuing Authority ¹ _____				
Address _____				
Signature: _____ Date ² : _____				
Telephone: _____ Fax: _____ Email: _____				
OWNER/OPERATOR				
Name ³ : _____ Address: _____				
Telephone: _____ Fax: _____ Email: _____				
Aircraft model ⁴ and registration marks:				
SPECIFIC APPROVAL	YES	NO	DESCRIPTIO N ⁵	REMARKS
Low visibility operations Approach and landing Take-off Operational credit(s)	<input type="checkbox"/>	<input type="checkbox"/>	CAT ⁶ : _____ RVR: _____ m DH: _____ ft RVR ⁷ : _____ m 8	
RVSM	<input type="checkbox"/>	<input type="checkbox"/>		
AR navigation specifications for PBN operations ⁹	<input type="checkbox"/>	<input type="checkbox"/>		
EFB	<input type="checkbox"/>	<input type="checkbox"/>	10	
Other	<input type="checkbox"/>	<input type="checkbox"/>	11	

Notes.—

1. Civil Aviation Authority name and contact details, including the telephone country code and email if available.
2. Issuance date of the specific approval (dd-mm-yyyy) and signature of the authority representative.
3. Owner or operator's name and address.
4. Insert the helicopter make, model and series, or master series, if a series has been designated The CAST/ICAO taxonomy is available at: <http://www.intlaviationstandards.org/>.
5. List in this column the most permissive criteria for each specific approval (with appropriate criteria).
6. Insert the applicable precision approach category (CAT II or III). Insert the minimum RVR in metres and decision height in feet. One line is used per listed approach category.
7. 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.
8. List the airborne capabilities (i.e. automatic landing, HUD, EVS, SVS, CVS) and associated operational credit(s) granted.
9. 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 "Description" column.

10. List the EFB functions used for the safe operation of helicopters and any applicable limitations.
11. Other specific approvals or data can be entered here, using one line (or one multi-line block) per approval (e.g. specific approach operations approval).

SECOND 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

- 1.1 Non-deployable flight recorder containers shall be painted a distinctive orange colour.
- 1.2 Non-deployable crash-protected flight recorder containers shall:
 - a) carry reflective material to facilitate their location; and
 - b) 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.
- 1.3 Automatic deployable flight recorder containers shall:
 - a) be painted a distinctive orange colour, however the surface visible from outside the helicopter may be of another colour;
 - b) carry reflective material to facilitate their location; and
 - c) have an integrated automatically activated ELT.
- 1.4 The flight recorder systems shall be installed so that:
 - a) the probability of damage to the recordings is minimized;
 - b) there is an aural or visual means for pre-flight checking that the flight recorder systems are operating properly;
 - c) 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
 - d) 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.

1.5 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.

1.6 The lightweight flight recorders shall be connected to a power source having the characteristics which ensure proper and reliable recording in the operational environment.

1.7 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.

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

1.9 The manufacturer usually provides the appropriate certificating authority with the following information in respect of the flight recorder systems:

- a) manufacturer's operating instructions, equipment limitations and installation procedures;
- b) parameter origin or source and equations which relate counts to units of measurement; and
- c) manufacturer's test reports.

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

2.1 Start and stop logic

The FDR or ADRS shall start to record prior to the 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.

2.2 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.

2.2.1 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.

2.2.2 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*

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

- a) 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
- b) additional engine parameters (EPR, N1, fuel flow, etc.).

2.2.4 The parameters that satisfy the requirements for ADRS are the first 7 parameters listed in Table A4-3.

2.2.5 If further ADRS recording capacity is available, the recording of any parameters from 8 onwards defined in Table A4-3 shall be considered.

2.3 Additional information

2.3.1 The measurement range, recording interval and accuracy of parameters on installed equipment is usually verified by methods approved by the appropriate certificating authority.

2.3.2 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.

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

3.1 Start and stop logic

The CVR or CARS shall start to record prior to the 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.

3.2 Signals to be recorded

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

- a) voice communication transmitted from or received in the aircraft by radio;
- b) aural environment on the flight deck;
- c) voice communication of flight crew members on the flight deck using the interphone system, if installed;
- d) voice or audio signals identifying navigation or approach aids introduced in the headset or speaker; and
- e) voice communication of flight crew members using the passenger address system, if installed.

3.2.2 **Recommendation.**—*The preferred CVR audio allocation should be as follows:*

- a) *pilot-in-command audio panel;*
- b) *co-pilot audio panel;*
- c) *additional flight crew positions and time reference; and*
- d) *cockpit area microphone.*

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

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

3.2.4 **Recommendation.**—*The preferred CARS audio allocation should be as follows:*

- a) *voice communication; and*
- b) *aural environment on the flight deck.*

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

4.1 Start and stop logic

The AIR or AIRS shall start to record prior to the 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.

4.2 Classes

4.2.1 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.

4.2.2 A Class B AIR or AIRS captures data link message displays.

4.2.3 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.

5. DATA LINK RECORDER (DLR)

5.1 Applications to be recorded

5.1.1 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.

5.1.2 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.

6. INSPECTIONS OF FLIGHT RECORDER SYSTEMS

6.1 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.

6.2 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.

6.3 Recording inspections shall be carried out as follows:

- a) an analysis of the recorded data from the flight recorders shall ensure that the recorder operates correctly for the nominal duration of the recording;
- b) 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;
- c) 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;
- d) 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;
- e) 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
- f) 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.
- g) an examination of the recorded messages on the DLR or DLRS shall be carried out by replay of the DLR or DLRS recording.

6.4 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.

6.5 A report of the recording inspection shall be made available on request to regulatory authorities for monitoring purposes.

6.6 Calibration of the FDR system:

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

S.I. 78 of 2023

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

Civil Aviation (Operations of Aircraft) Regulations, 2023

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

S.I. 78 of 2023

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

Civil Aviation (Operations of Aircraft) Regulations, 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	Application for type certification is submitted to a Contracting State on or after 1 January 2023	As installed	64	As installed	1% of full range
53*	Helicopter computed weight	Application for type certification is submitted to a Contracting State on or after 1 January 2023	As installed	64	As installed	1% of full range

Table A4-2. Description of Applications for Data Link Recorders

Item No.	Application type	Application description	Recording content
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.	C
2	Controller/pilot communication	This includes any application used to exchange requests, 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.	C
3	Addressed surveillance	This includes any surveillance application in which the ground sets 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.	C
4	Flight information	This includes any service used for delivery of flight information to 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.	C
5	Aircraft broadcast surveillance	This includes elementary and enhanced surveillance systems, as 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.	M*
6	Aeronautical operational control data	This includes any application transmitting or receiving data used for aeronautical operational control purposes (per the ICAO definition of operational control).	M*

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 360°/h	2°/s	
2	Pitch:					
	a) Pitch attitude	±90°	0.25	±2°	0.5°	*Pitch attitude is preferred, if not available, pitch rate shall be recorded
	b) Pitch rate	±300°/s	0.25	±1% + drift of 360°/h	2°/s	
3	Roll:					
	a) Roll attitude	±180°	0.25	±2°	0.5°	*Roll attitude is preferred, if not available, roll rate shall be recorded
	b) Roll rate	±300°/s	0.25	±1% + drift of 360°/h	2°/s	
4	Positioning system:					
	a) Time	24 hours	1	±0.5°	0.1°	UTC time preferred where available
	b) Latitude/longitude	Latitude:±90° Longitude:±180°	2 (1 if available)	As installed (0.00015° recommended)	0.00005°	
	c) Altitude	-300 m (-1 000 ft) to maximum certificated altitude of aircraft +1 500 m (5 000 ft)	2 (1 if available)	As installed (±15 m (±50 ft) recommended)	1.5 m (5 ft)	
	d) Ground speed	0-1 000 kt	2 (1 if available)	As installed (±5 kt recommended)	1 kt	
	e) Track	0-360°	2 (1 if available)	As installed (± 2° recommended)	0.5°	
	f) Estimated error	Available range	2 (1 if available)	As installed	As installed	Shall be recorded if readily available

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 (0.125 if available)	As installed (±0.09 g excluding a datum error of ±0.05 g recommended)	0.004 g	
6	Longitudinal acceleration	±1 g	0.25 (0.125 if available)	As installed (±0.015 g excluding a datum error of ±0.05 g recommended)	0.004 g	
7	Lateral acceleration	±1 g	0.25 (0.125 if available)	As installed (±0.015 g excluding a datum error of ±0.05 g recommended)	0.004 g	
8	External static pressure (or pressure altitude)	34.4 hPa (1.02 in-Hg) to 310.2 hPa (9.16 in-Hg) or available sensor range	1	As installed (±1 hPa (0.3 in-Hg) or ±30 m (±100 ft) to ±210 m (±700 ft) recommended)	0.1 hPa (0.03 in-Hg) or 1.5 m (5 ft)	
9	Outside air temperature (or total air temperature)	-50° to +90°C or available sensor range	2	As installed (±2°C recommended)	1°C	
10	Indicated air speed	As the installed pilot display measuring system or available sensor range	1	As installed (±3% recommended)	1 kt (0.5 kt recommended)	
11	Main rotor speed (Nr)	50% to 130% or available sensor range	0.5	As installed	0.3% of full range	
12	Engine RPM (*)	Full range including overspeed condition	Each engine each second	As installed	0.2% of full range	*For piston-engined helicopters
13	Engine oil pressure	Full range	Each engine each second	As installed (5% of full range recommended)	2% of full range	
14	Engine oil temperature	Full range	Each engine each second	As installed (5% of full range recommended)	2% of full range	
15	Fuel flow or pressure	Full range	Each engine each second	As installed	2% of full range	
16	Manifold pressure (*)	Full range	Each engine each second	As installed	0.2% of full range	*For piston-engined helicopters

Civil Aviation (Operations of Aircraft) Regulations, 2023

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

THIRD 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 Registry ¹ :			
		By State of the principal location of a general aviation operator ¹ :			
Duration:		Start Date ¹ :		End Date (if applicable) ² :	
Languages of the Agreement					
ICAO Registration No.:					
Umbrella Agreement (if any) with ICAO Registration number:					
Convention on International Civil Aviation		ICAO Annexes affected by the transfer of responsibility in respect of certain functions and duties to the State of the principal location of a general aviation operator			
Article 12: Rules of the Air		Annex 2, all chapters		Yes <input type="checkbox"/>	
				No <input type="checkbox"/>	
Article 30 a): Aircraft radio equipment		Radio Station Licence		Yes <input type="checkbox"/>	
				No <input type="checkbox"/>	
Articles 30 b) and 32 a): Licenses of personnel		Annex 1, Chapters 1, 2, 3 and 6; and Annex 6 Part I (radio operator); or Annex 6, Part 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 <input type="checkbox"/>	Annex 6: [Specify Part and paragraph] ³
				No <input type="checkbox"/>	
Article 31: Certificates of Airworthiness		Annex 6 Part I or Part III, Section II		Yes <input type="checkbox"/>	[Specify Part and chapters] ³
				No <input type="checkbox"/>	
		Annex 6 Part II or Part III, Section III		Yes <input type="checkbox"/>	[Specify Part and chapters] ³
				No <input type="checkbox"/>	
		Annex 8 Part II, Chapters 3 and 4		Yes <input type="checkbox"/>	[Specify chapters] ³
				No <input type="checkbox"/>	
Aircraft affected by the transfer of responsibilities to the State of the principal location of a general aviation operator					
Aircraft make, model, series	Nationality and registration marks	Serial No	AOC No. (Commercial air transport)	Dates of transfer of responsibilities	
				From ¹	To (if applicable) ²

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 Registry ¹ :	
	By State of the principal location of a general aviation operator ¹ :	
Duration:	Start Date ¹ :	End Date (if applicable) ² :
Languages of the Agreement		
ICAO Registration No.:		
Umbrella Agreement (if any) with ICAO Registration number:		

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

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

FOURTH SCHEDULE**CONTENTS OF AN OPERATIONS MANUAL****3. ORGANIZATION**

3.1 An operations manual, which may be issued in separate parts corresponding to specific aspects of operations, provided in accordance with Section Part IV (Commercial Air Transport Helicopters) section 10 shall be organized with the following contents and structure:

- e) general;
- f) aircraft operating information;
- g) routes and aerodromes; and
- h) training.

4. CONTENTS

The operations manual referred to in 1.1 shall contain at the least the following:

4.1 General

- 4.1.1 Instructions outlining the responsibilities of operations personnel pertaining to the conduct of flight operations.
- 4.1.2 Information and policy relating to fatigue management including:
 - c) 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 17; and
 - d) where applicable, policy and documentation pertaining to the operator's FRMS, in accordance with Part II (Air Operator Certificate) Section 62.
- 4.1.3 A list of the navigation equipment to be carried, including any requirements relating to operations where performance-based navigation is prescribed.
- 4.1.4 The circumstances in which a radio listening watch is to be maintained.
- 4.1.5 The method for determining minimum flight altitudes.
- 4.1.6 The methods for determining heliport operating minima.
- 4.1.7 Safety precautions during refuelling with passengers on board.
- 4.1.8 Ground handling arrangements and procedures.
- 4.1.9 Procedures, as prescribed in Civil Aviation (Search and Rescue) Regulations, for pilots-in-command observing an accident.
- 4.1.10 The flight crew for each type of operation including the designation of the succession of command.
- 4.1.11 Specific instructions for the computation of the quantities of fuel and oil to be carried, having regard to all circumstances of the operation including the possibility of loss of pressurization and the failure of one or more engines while en-route.
- 4.1.12 The conditions under which oxygen shall be used and the amount of oxygen determined in accordance with Section 19.
- 4.1.13 Instructions for mass and balance control.
- 4.1.14 Instructions for the conduct and control of ground de-icing/anti-icing operations.
- 4.1.15 The specifications for the operational flight plan.
- 4.1.16 Standard operating procedures (SOP) for each phase of flight.
- 4.1.17 Instructions on the use of normal checklists and the timing of their use.
- 4.1.18 Departure contingency procedures.
- 4.1.19 Instructions on the maintenance of altitude awareness.
- 4.1.20 Instructions on the clarification and acceptance of ATC clearances, particularly where terrain clearance is involved.
- 4.1.21 Departure and approach briefings.
- 4.1.22 Route and destination familiarization.
- 4.1.23 Conditions required to commence or to continue an instrument approach.
- 4.1.24 Instructions for the conduct of precision and non-precision instrument approach procedures.
- 4.1.25 Allocation of flight crew duties and procedures for the management of crew workload during night and IMC instrument approach operations.
- 4.1.26 Information and instructions relating to the interception of civil aircraft including:
 - c) procedures, as prescribed in Civil Aviation (Rules of the Air) Regulations, for pilots-in-command of intercepted aircraft; and
 - d) visual signals for use by intercepting and intercepted aircraft, as contained in Civil Aviation (Rules of the Air) Regulations.

4.1.27 Details of the safety management system (SMS) provided in accordance with Civil Aviation (SMS) Regulations.

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

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

4.1.29 Security instructions and guidance.

4.1.30 The search procedure checklist provided in accordance with Part IV (Commercial Air Transport Helicopters) section 119.

4.1.31 Instructions and training requirements for the use of head-up displays (HUD) or enhanced vision systems (EVS) equipment as applicable.

4.1.32 Instructions and training requirements for the use of the EFB, as applicable.

4.2 Aircraft operating information

4.2.1 Certification limitations and operating limitations.

4.2.2 The normal, abnormal and emergency procedures to be used by the flight crew and the checklists relating thereto as required by Section 34.

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

4.2.4 Instructions and data for mass and balance calculations.

4.2.5 Instructions for aircraft loading and securing of load.

4.2.6 Aircraft systems, associated controls and instructions for their use, as required by this part.

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

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

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

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

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

4.2.12 The ground-air visual signal code for use by survivors, as contained in Civil Aviation (Search and Rescue) Regulations

4.3 Routes, aerodromes and heliports

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

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

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

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

4.3.5 Instructions for the use of aerodrome operating minima for instrument approaches applicable to the use of HUD and EVS.

4.4 Training

4.4.1 Details of the flight crew training programme and requirements, as required by Part IV (Commercial Air Transport Helicopters) section 102.

4.4.2 Details of the cabin crew duties training programme as required by Part IV (Commercial Air Transport Helicopters) section 118.

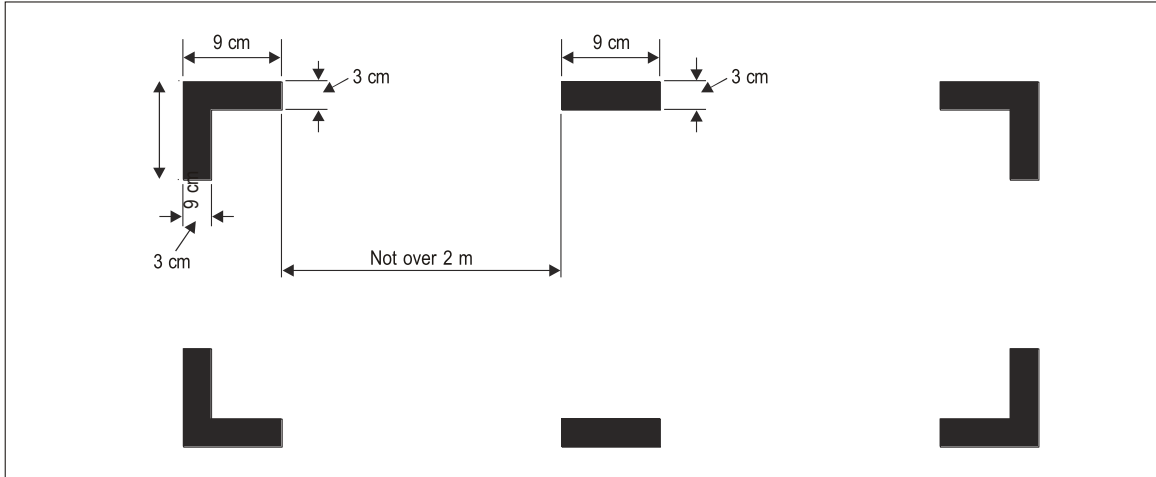
4.4.3 Details of the flight operations officer/flight dispatcher training programme when employed in conjunction with a method of flight supervision in accordance with Part IV (Commercial Air Transport Helicopters) section 8.

FIFTH SCHEDULE

MARKING OF BREAK-IN POINTS

2. 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.



MARKING OF BREAK-IN POINTS (see 4.2.4)

PART VIII
CIVIL AVIATION (OPERATION OF AIRCRAFT – COMMERCIAL AIR TRANSPORT (AEROPLANES
BELOW 5700KG)
ARRANGEMENT OF SECTIONS

Sections

SUB PART I
PRELIMINARY PROVISIONS

- 1 Title
- 2 Application.

SUB PART II
GENERAL

- 3 Compliance with laws, regulations and procedures
- 4 Compliance by a foreign operator with laws, regulations and procedures of a State
- 5 Use of psychoactive substances
- 6 Aircraft tracking

SUB PART III
FLIGHT OPERATIONS

- 7 Operating Considerations and Facilities
- 8 Operational Certification and Supervision
- 9 Surveillance of Operations by a foreign operator
- 10 Operations Manual
- 11 Operating Instructions-General
- 12 Inflight simulation of emergency situations
- 13 Checklists
- 14 Minimum Flight altitudes
- 15 5Aerodrome Operating Minima
- 16 Threshold crossing height for 3D Instrument Approach Operations
- 17 Fuel and Oil Records
- 18 Crew- Pilot In Command
- 19 Passengers
- 20 Flight Preparation
- 21 Operational flight planning
- 22 Take-off alternate aerodrome
- 23 Destination alternate aerodromes
- 24 Meteorological conditions - VFR Flights
- 25 Meteorological conditions- IFR Flights
- 26 Visibility or cloud base
- 27 Icing conditions
- 28 Fuel requirements
- 29 In-flight fuel management
- 30 Refuelling with passengers on board
- 31 Oxygen supply
- 32 Time capability of cargo compartment fire suppression system
- 33 In-flight procedures -Aerodrome operating minima
- 34 Meteorological observations
- 35 Hazardous flight conditions
- 36 Flight crew members at duty stations
- 37 Use of oxygen
- 38 In-flight operational instructions
- 39 Instrument flight procedures
- 40 Aeroplane operating procedures for noise abatement
- 41 Aeroplane operating procedures for rates of climb, descent and Landing Performance

- 42 Duties of Pilot-In-Command
- 43 Duties of flight Dispatcher
- 44 Carry-on baggage
- 45 Additional requirements for single pilot operations under the instrument flight rules (IFR) or at night
- 46 Additional requirements for single engine turbine powered aeroplane operations under instrument flight rules (IFR) or at night
- 47 Fatigue management

SUB PART IV

AEROPLANE PERFORMANCE OPERATING LIMITATIONS

- 48 General
- 49 Mass limitations
- 50 Obstacle data
- 51 Additional requirements for operations of single-engine turbine-powered aeroplanes at night or in Instrument Meteorological Conditions (IMC).

SUB PART V

AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

- 52 Instruments, equipment and flight documents to be installed or carried in aeroplanes
- 53 Aeroplane operated under Article 83 bis agreement
- 54 Aeroplanes on all flights
- 55 Marking of break-in points
- 56 Flight recorders
- 57 Flight data recorders (FDR), and aircraft data recording systems
- 58 Recording technology - FDR
- 59 Duration of FDR
- 60 Cockpit voice recorders and cockpit audio recording systems - application
- 61 CVR and CARS Recording technology
- 62 CVR duration
- 63 CVR - alternate power source
- 64 Flight recorders general - Construction and installation
- 65 Operation
- 66 Continued serviceability
- 67 Flight recorder electronic documentation
- 68 All aeroplanes operated as VFR flights
- 69 All aeroplanes on flights over water-Seaplanes
- 70 Landplanes
- 71 All aeroplanes on long-range over-water flights
- 72 All Aeroplanes on flights over designated land areas
- 73 All aeroplanes on high altitude flights
- 74 All aeroplanes in icing conditions
- 75 All aeroplanes operated in accordance with instrument flight rules
- 76 All aeroplanes when operated at night
- 77 Pressurised aeroplanes when carrying passengers — weather radar
- 78 All aeroplanes complying with noise certification
- 79 Mach number indicator
- 80 Aeroplanes required to be equipped with ground proximity warning systems (GPWS)
- 81 Emergency locator transmitter (ELT)
- 82 Location of aeroplane in distress
- 83 Aeroplanes required to be equipped with airborne collision avoidance system (ACAS II) -Requirements for pressure-altitude reporting transponders
- 84 Microphones

- 85 Turbo-jet aeroplanes — forward-looking wind shear warning system -All aeroplanes operated by a single pilot under IFR or at night
- 86 Electronic flight bags-equipment
- 87 EFB Functions
- 88 EFB specific approval

SUB PART VI

AEROPLANE COMMUNICATION, NAVIGATION AND SURVEILLANCE EQUIPMENT

- 89 Communication equipment
- 90 Navigation equipment
- 91 Surveillance equipment
- 92 Installation
- 93 Electronic navigation data management

SUB PART VII

AEROPLANE CONTINUING AIRWORTHINESS

- 94 Operator's Continuing Airworthiness Responsibilities
- 95 Operator's maintenance control manual
- 96 Maintenance programme
- 97 Continuing airworthiness records
- 98 Continuing airworthiness information
- 99 Modifications and repairs
- 100 Approved maintenance organisation
- 101 Maintenance release

SUB PART VIII

AEROPLANE FLIGHT CREW

- 102 Composition of the flight crew
- 103 Radio operator
- 104 Flight crew member emergency duties
- 105 Flight crew member training programmes
- 106 Duties during critical phases of flight
- 107 Manipulation of the controls
- 108 Power to inspect
- 109 Qualifications-recent experience — pilot-in-command and co-pilot
- 110 Pilot operating limitations and pairing requirements
- 111 Recent experience — cruise relief pilot
- 112 Pilot-in-command area, route and aerodrome qualification
- 113 Pilot proficiency checks
- 114 Single pilot operations under the instrument flight rules (IFR) or at night
- 115 Flight crew equipment
- 116 Pilot authorisation in lieu of a type rating
- 117 Licences required
- 118 Pilot Qualifications
- 119 Fitness of crew members
- 120 Special authorisation required for Category II or III operations
- 121 Recording of flight time
- 122 Completion of the technical logbook
- 123 Reporting mechanical irregularities
- 124 Reporting of facility and navigation aid inadequacies
- 125 Pilot privileges and limitations
- 126 Crew resource management (CRM) Training
- 127 Human Factors (HF) Training

- 128 Initial emergency equipment drills
- 129 Initial aircraft ground training: flight crew
- 130 Initial flight Training- flight crew member
- 131 Initial specialised operations training
- 132 Aircraft differences training
- 133 Use of synthetic flight trainers
- 134 Aircraft and instrument proficiency checks
- 135 Introduction of new equipment or procedures
- 136 Flight engineer proficiency checks
- 137 Supervised line flying- pilots
- 138 Supervised line flying- flight engineers
- 139 Route and area checks: pilot qualification
- 140 Low minimums authorization- PIC
- 141 Designated Special aerodromes- PIC qualification
- 142 Designated special airport qualifications aerodrome limitations
- 143 Recurrent training and checking- flight crew members
- 144 Check pilot training
- 145 Authorised instructor or synthetic flight trainer and authorised instructor training
- 146 Authorised instructor qualifications
- 147 Check pilot and authorised flight engineer qualifications
- 148 Check pilot designation, authorizations and limitations
- 149 Synthetic flight trainer approval
- 150 Line qualification: check pilot and instructor
- 151 Termination of a proficiency, competence or line check
- 152 Recording of crew member qualifications
- 153 Monitoring of training and checking activities
- 154 Eligibility period

SUB PART X
MANUALS, LOGS AND RECORDS

- 155 Flight manual
- 156 Operator's maintenance control manual
- 157 Maintenance programme
- 158 Journey log book
- 159 Records of emergency and survival equipment carried
- 160 Portable electronic devices

SUB PART XI
SECURITY

- 161 Security of the flight crew compartment
- 162 Aeroplane search procedure checklist
- 163 Training programmes
- 164 Reporting acts of unlawful interference
- 165 Stowage of weapons removed from passengers

SUB PART XII
DANGEROUS GOODS

- 166 Operators with no specific approval for the transport of dangerous goods as cargo
- 167 Operators with a specific approval for the transport of dangerous goods as cargo
- 168 Provision of information

SUB PART XIII
CARGO COMPARTMENT SAFETY

169 Transport of items in the cargo compartment

Schedules

FIRST SCHEDULE; LIGHTS TO BE DISPLAYED BY AEROPLANES

SUB PART I

Title

OPERATION OF AIRCRAFT – COMMERCIAL AIR TRANSPORT (AEROPLANES BELOW 5700KG)

1 This Part may be cited as Operation of Aircraft-Commercial Air Transport (Aeroplanes Below 5700kg).

Application

2 This Part shall be applicable to the operation of all aeroplanes below 5700kg by operators authorised to conduct commercial air transport operations.

SUB PART II

GENERAL

Compliance with laws, regulations and procedures

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

(2) An 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 aerodromes to be used and the air navigation facilities relating thereto.

(3) An operator shall ensure that other members of the flight crew are familiar with these laws, regulations and procedures as are pertinent to the performance of their respective duties in the operation of the aeroplane.

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

(5) The operator shall delegate responsibility for operational control only to—

(a) the pilot-in-command; or

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

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

(7) Where an emergency situation which endangers the safety of the aeroplane or persons necessitates the taking of action which involves a violation of local regulations or procedures, the PIC shall notify the appropriate local authority without delay.

(8) Where required by the State in which the incident occurs, the PIC shall submit a report on any such violation to the appropriate authority of such state, in that event, the PIC shall also submit a copy of it to the Authority, and the reports shall be submitted as soon as possible and normally within ten days.

(9) An operator shall ensure that the PIC has available on board the aeroplane all the essential information concerning the search and rescue services in the area over which the aeroplane will be flown.

(10) An operator shall ensure that flight crew members demonstrate the ability to speak and understand the English language used for radiotelephony communications as specified in Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019.

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

4(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 Zimbabwe, 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 operator.

(2) Where the State of operator and the State of registry are different, the notification under subsection (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 subsections (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) An operator shall establish a flight safety documents system, for the use and guidance of operational personnel as part of its safety management system.

Use of psychoactive substances

5 (1) No member of a flight crew shall perform any function specified in the privileges applicable to his or her license where he or she is under the influence of any psychoactive substance which may render him or her unable to perform such functions in a safe and proper manner.

(2) No person whose function is critical to the safety of aviation (safety-sensitive personnel) shall undertake that function while under the influence of any psychoactive substance, by reason of which human performance is impaired.

(3) The person referred to in subsections (1) and (2) shall not engage in any kind of problematic use of substances as specified in accordance with the provisions in Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019 and Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018.

Aircraft tracking

6 (1) An operator shall establish an aircraft tracking capability to track aeroplanes throughout its area of operations.

(2) An operator shall establish procedures, approved by the Authority, for the retention of aircraft tracking data to assist search and rescue (SAR) in determining the last known position of the aircraft.

SUB PART III FLIGHT OPERATIONS

Operating considerations and facilities

7 (1) An operator shall ensure that a flight does not commence unless it has been ascertained by every reasonable means available that the ground or water facilities available and directly required on such flight, for the safe operation of the aeroplane 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) An operator shall ensure that a flight does not commence or continue as planned unless it has been ascertained by every reasonable means available that the airspace containing the intended route from aerodrome of departure to aerodrome of arrival, including the intended take-off, destination and *en-route* alternate aerodromes, can be safely used for the planned operation.

(3) Where the operator intends to operate over or near conflict zones, a risk assessment shall be conducted and appropriate risk mitigation measures taken to ensure a safe flight.

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

(5) Subject to their published conditions of use, aerodromes and their facilities shall be kept continuously available for flight operations during their published hours of operations, irrespective of weather conditions.

(6) An operator shall, as part of its safety management system, assess the level of rescue and firefighting service or RFFS protection available at any aerodrome intended to be specified in the operational flight plan in order to ensure that an acceptable level of protection is available for the aeroplane intended to be used.

(7) Information related to the level of RFFS protection that is deemed acceptable by the operator shall be contained in the operations manual.

(8) An operator shall conduct a risk assessment and take appropriate risk mitigation measures to ensure a safe flight when intending to operate over or near conflict zones.

Operational Certification and Supervision

8 (1) An operator shall not 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 authorise 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) An operator shall develop policies and procedures for third parties that perform work on its behalf.

(5) An operator shall ensure that policies, procedures and facilities for subcontracted third parties referred to in subsection (4) are approved by the Authority.

(6) 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.

(7) The air operator certificate shall be in the form laid out in the Sixth Schedule and shall contain at least the following information—

(a) the state of the Operator and the issuing authority;

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

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

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

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

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

(a) Each aircraft model in the operator's fleet, identified by aircraft make, model and series including the list of authorisations, conditions and limitations;

(b) issuing authority contact details;

(c) operator name and AOC number;

(d) date of issue and signature of the authority representative;

(e) types and area of operations; and

(f) special limitations and authorisations.

(9) Air operator certificates and their associated operations specifications first issued from 20 November 2008 shall follow the layouts in the Sixth Schedule.

(10) The Authority shall establish a system for both certification and the continued surveillance of the operator in accordance with the Fifth Schedule to this Part and the provisions of Civil Aviation (Safety Management) Regulations to ensure the required standards of operations established in this Part are maintained.

Surveillance of operations by a foreign operator

9(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 I and Annex 19.

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

(3) A foreign operator conducting aircraft operations in Zimbabwe shall comply with the requirements of this Part and any other applicable law to meet and maintain the requirements established by the Authority when operating in Zimbabwe.

Operations manual

10 (1) An operator shall provide, for the use and guidance of operations personnel concerned, an approved operation manual as described in the Second Schedule.

(2) An operator shall ensure that the operations manual is amended or revised as is necessary to ensure that the information contained therein is kept up to date and amendments or revisions are issued 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 or approval by the Authority.

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

Operating instructions — General

11 (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) No person shall taxi an aeroplane on the movement area of an aerodrome unless the person —

(a) has been duly authorised by the operator or a designated agent;

(b) is fully competent to taxi the aeroplane;

(c) is qualified to use the radiotelephone; and

(d) has received instruction from a competent person in respect of aerodrome layout, routes, signs, markings, lights, air traffic control (ATC) signals and instructions, phraseology and procedures, and is able to conform to the operational standards required for safe aeroplane movement at the aerodrome.

(3) An operator shall issue operating instructions and provide information on aeroplane climb performance with all engines operating to enable the pilot-in-command to determine the climb gradient that can be achieved during the departure phase for the existing take-off conditions and intended take-off technique and this information shall be included in the operations manual.

In-flight simulation of emergency situations

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

Checklists

13 (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 an emergency, to ensure compliance with the operating procedures contained in the aircraft operating manual and the aeroplane 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).

Minimum Flight altitudes

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

(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 subsection (2) shall not be—

(a) when over high terrain or in mountainous areas, lower than a level which is at least 600 m (2 000 ft), above the highest obstacle located within 8 km of the estimated position of the aircraft;

(b) elsewhere than as specified in paragraph (a), lower than a level which is at least 300 m (1 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft.

(4) When determining the estimated position of the aircraft the operator shall take account of the navigational accuracy which can be achieved on the relevant route segment, having regard to the navigational facilities available on the ground and in the aircraft.

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

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

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

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

(c) the characteristics of the terrain, including sudden changes in the elevation;

(d) the probability of encountering unfavourable meteorological conditions, including severe turbulence and descending air currents;

(e) possible inaccuracies in aeronautical charts; and

(f) airspace restrictions.

Aerodrome operating minima

15 (1) The Authority shall require that the operator establish aerodrome operating minima for each aerodrome to be used in operations and shall approve the method of determination of such minima.

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

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

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

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

(6) For the purpose of this regulation “Operational credit” includes—

(a) for the purposes of an approach ban, a minima below the aerodrome operating minima;

(b) reducing or satisfying the visibility requirements; or

(c) requiring fewer ground facilities as compensated for by airborne capabilities.

(7) When issuing a specific approval for the operational credit, the Authority shall ensure that the—

(a) aeroplane 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 is more than one;

(c) operator has carried out a safety risk assessment of the operations supported by the equipment;

(d) operator has established and documented normal and abnormal procedures and MEL;

(e) operator has established a training programme for the flight crew members and relevant personnel involved in the flight preparation;

(f) operator 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 has instituted appropriate procedures in respect of continuing airworthiness (maintenance and repair) practices and programmes.

(8) 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 aeroplane.

(9) The Authority shall require that in establishing the aerodrome operating minima which applies to any particular operation, the operator take full account of the following—

(a) the type, performance and handling characteristics of the aeroplane and any conditions or limitations stated in the flight manual;

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

(c) the dimensions and characteristics of the runways which may be selected for use;

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

(e) the equipment available on the aeroplane for the purpose of navigation, acquisition of visual references and control of the flight path during the approach, landing and the missed approach;

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

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

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

(i) the conditions prescribed in the operations specifications; and

(f) any minima that may be promulgated by the State of the Aerodrome.

(10) 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—

(a) type A- a minimum descent height or decision height at or above 75 m (250 ft); and

(b) type B- a decision height below 75 m (250 ft) which are categorised as follows—

(i) 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;

(ii) 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

(iii) 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.

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

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

(13) For instrument approach operations, aerodrome operating minima below 800 m visibility shall not be authorised unless RVR information is provided.

(14) An operating minimum 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.

(15) An operator shall establish operational procedures designed to ensure that an 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 (RVR.)

Threshold crossing height for 3D instrument approach operations

16. An operator shall establish operational procedures designed to ensure that an aeroplane being used to conduct 3D instrument approach operations crosses the threshold by a safe margin, with the aeroplane in the landing configuration and attitude.

Fuel and oil records

17(1) An operator shall maintain fuel records to enable the Authority to ascertain that, for each flight, the requirements of sections 30 and 31 have been complied with.

(2) An operator shall maintain oil records to enable the Authority to ascertain that trends for oil consumption are such that an aeroplane has sufficient oil to complete each flight.

(3) Fuel and oil records shall be retained by the operator for a period of 3 months.

Crew- Pilot In Command

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

Passengers

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

(a) seat belts;

(b) emergency exits;

(c) life jackets, where the carriage of life jackets is prescribed;

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

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

(2) An operator shall inform the passengers 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 an aeroplane shall be secured in their seats by means of the seat belts or harnesses provided.

Flight Preparation

20 (1) No operator shall commence a flight until flight preparation forms have been completed certifying that the pilot-in-command is satisfied that—

(a) the aeroplane is airworthy and the appropriate certificates of airworthiness and certificate of registration are on board the aeroplane;

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

(c) a maintenance release as prescribed in A6, P1, 8.8 has been issued in respect of the aeroplane;

(d) the mass of the aeroplane and centre of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;

(e) any load carried is properly distributed and safely secured;

- (f) a check has been completed indicating that the operating limitations of this Part can be complied with for the flight to be undertaken; and
 - (g) the requirements in section 22 have been complied with.
- (2) Completed flight preparation forms shall be kept by the operator for a period of 3 months.

Operational flight planning

- 21(1) An operator shall complete an operational flight plan for every intended flight.
- (2) The operational flight plan shall be approved and signed by the pilot-in-command and where applicable, signed by the flight dispatcher and a copy shall be filed with the operator or a designated agent, or, if these procedures are not possible, it shall be left with the aerodrome authority or on record in a suitable place at the point of departure.
- (3) The operations manual shall describe the content and use of the operational flight plan.

Take-off alternate aerodrome

- 22 (1) A take-off alternate aerodrome shall be selected and specified in the operational flight plan where either the meteorological conditions at the aerodrome of departure are below the operator's established aerodrome landing minima for that operation or if it would not be possible to return to the aerodrome of departure for other reasons.
- (2) The take-off alternate aerodrome shall be located within the following flight time from the aerodrome of departure for aeroplanes with two engines, one hour of flight time at a one-engine-inoperative cruising speed, determined from the aircraft operating manual, calculated in International Standard Atmosphere (ISA) and still-air conditions using the actual take-off mass.
- (3) For an aerodrome to be selected as a take-off alternate, the available information shall indicate that, at the estimated time of use, the conditions will be at or above the operator's established aerodrome operating minima for that operation.

Destination alternate aerodromes

- 23 (1) For a flight to be conducted in accordance with the instrument flight rules, at least one destination alternate aerodrome shall be selected and specified in the operational and ATS flight plans, unless—
- (a) the duration of the flight from the departure aerodrome or from the point of in-flight re-planning, to the destination aerodrome is such that, taking into account all meteorological conditions and operational information relevant to the flight, at the estimated time of use, a reasonable certainty exists that—
 - (i) the approach and landing may be made under visual meteorological conditions; and
 - (ii) separate runways are usable at the estimated time of use of the destination aerodrome with at least one runway having an operational instrument approach procedure; and
 - (b) the aerodrome is isolated and operations into isolated aerodromes do not require the selection of a destination alternate aerodrome or aerodromes and shall be planned in accordance with section 30 (3) provided that—
 - (i) for each flight into an isolated aerodrome, a point of no return shall be determined; and
 - (ii) a flight to be conducted to an isolated aerodrome shall not be continued past the point of no return unless a current assessment of meteorological conditions, traffic and other operational conditions indicate that a safe landing can be made at the estimated time of use.
- (2) Two destination alternate aerodromes shall be selected and specified in the operational and ATS flight plans when, for the destination aerodrome—
- (a) meteorological conditions at the estimated time of use will be below the operator's established aerodrome operating minima for that operation; or
 - (b) meteorological information is not available.
- (3) Notwithstanding the provisions of sections 23, 24 and subsections (1) and (2), the Authority may, based on the results of a specific safety risk assessment conducted by the operator which demonstrates how an equivalent level of safety shall be maintained, approve operational variations to alternate aerodrome selection criteria, and the specific safety risk assessment shall, include—
- (a) capabilities of the operator;
 - (b) overall capability of the aeroplane and its systems;
 - (c) available aerodrome technologies, capabilities and infrastructure;
 - (d) quality and reliability of meteorological information;

- (e) identified hazards and safety risks associated with each alternate aerodrome variation;
- (f) specific mitigation measures.

Meteorological conditions - VFR Flights

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

Meteorological conditions- IFR Flights

- 25 (1) A flight to be conducted in accordance with the instrument flight rules shall not—
- (a) take off from the departure aerodrome unless the meteorological conditions, at the time of use, are at or above the operator's established aerodrome operating minima for that operation; and
 - (b) take off or continue beyond the point of in-flight re-planning unless at the aerodrome of intended landing or at each alternate aerodrome to be selected in compliance with sections 67, 68 and 69, current meteorological reports or a combination of current reports and forecasts indicate that the meteorological conditions will be, at the estimated time of use, at or above the operator's established aerodrome operating minima for that operation.

Visibility or cloud base

26 (1) An 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 aerodrome operating minima to ensure that an adequate margin of safety is observed in determining whether or not an approach and landing can be safely carried out at each alternate aerodrome.

(2) The Authority shall approve a margin of time established by the operator for the estimated time of use of an aerodrome.

Icing conditions

27 (1) A flight to be operated in known or expected icing conditions shall not be commenced unless the aeroplane 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 take off unless the aeroplane has been inspected for icing and, where necessary, has been given appropriate de-icing or anti-icing treatment.

(3) An operator shall remove accumulation of ice or other naturally occurring contaminants so that the aeroplane is kept in an airworthy condition prior to take-off.

Fuel requirements

28 (1) An operator shall ensure that an aeroplane carries sufficient amount of usable fuel to complete the planned flight safely and to allow for deviations from the planned operation.

(2) The amount of usable fuel to be carried shall, at a minimum, be based on—

- (a) the following data—
 - (i) current aeroplane-specific data derived from a fuel consumption monitoring system, where available; or
 - (ii) where current aeroplane-specific data are not available, data provided by the aeroplane manufacturer; and
- (b) the operating conditions for the planned flight including—
 - (i) anticipated aeroplane mass;
 - (ii) current meteorological reports or a combination of current reports and forecasts;
 - (iii) air traffic services procedures, restrictions and anticipated delays; and
 - (iv) the effects of deferred maintenance items and configuration deviations.

(3) The pre-flight calculation of usable fuel required shall include—

- (a) taxi fuel, which shall be the amount of fuel expected to be consumed before take-off, taking into account local conditions at the departure aerodrome and auxiliary power unit (APU) fuel consumption;
- (b) trip fuel, which shall be the amount of fuel required to enable the aeroplane to fly from take-off, or the point of inflight re-planning, until landing at the destination aerodrome taking into account the operating conditions of subsection (2);
- (c) contingency fuel, which shall be the amount of fuel required to compensate for unforeseen factors and it shall be 5 per centum of the planned trip fuel or of the fuel required from the point of in-flight re-planning

based on the consumption rate used to plan the trip fuel but, in any case, shall not be lower than the amount required to fly for five minutes at holding speed at 450 m (1 500 ft) above the destination aerodrome in standard conditions;

(d) destination alternate fuel, shall be—

(i) where a destination alternate aerodrome is required, the amount of fuel required to enable the aeroplane to—

- A. perform a missed approach at the destination aerodrome;
- B. climb to the expected cruising altitude;
- C. fly the expected routing;
- D. descend to the point where the expected approach is initiated; and
- E. conduct the approach and landing at the destination alternate aerodrome; or

(ii) where two destination alternate aerodromes are required, the amount of fuel, as calculated in paragraph (i), required to enable the aeroplane to proceed to the destination alternate aerodrome which requires the greater amount of alternate fuel; or

(iii) where a flight is operated without a destination alternate aerodrome, the amount of fuel required to enable the aeroplane to fly for 15 minutes at holding speed at 450 m (1 500 ft) above destination aerodrome elevation in standard conditions; or

(iii) where the aerodrome of intended landing is an isolated aerodrome—

- A. for a reciprocating engine aeroplane, the amount of fuel required to fly for 45 minutes plus 15 *per centum* of the flight time planned to be spent at cruising level, including final reserve fuel, or 2 hours, whichever is less; or
- B. for a turbine-engine aeroplane, the amount of fuel required to fly for two hours at normal cruise consumption above the destination aerodrome, including final reserve fuel.

(g) final reserve fuel, which shall be the amount of fuel calculated using the estimated mass on arrival at the destination alternate aerodrome, or the destination aerodrome when no destination alternate aerodrome is required—

(i) for a reciprocating engine aeroplane, the amount of fuel required to fly for 45 minutes, under speed and altitude conditions specified by the Authority; or

(ii) for a turbine-engine aeroplane, the amount of fuel required to fly for 30 minutes at holding speed at 450 m or 1 500 ft above aerodrome elevation in standard conditions;

(h) additional fuel, which shall be the supplementary amount of fuel required if the minimum fuel calculated in accordance with paragraph (b), (c), (d) and (e) is not sufficient to—

(i) allow the aeroplane to descend as necessary and proceed to an alternate aerodrome in the event of engine failure or loss of pressurisation, whichever requires the greater amount of fuel based on the assumption that such a failure occurs at the most critical point along the route—

- A. fly for 15 minutes at holding speed at 450 m or 1 500 ft above aerodrome elevation in standard conditions; and
- B. make an approach and landing;

(ii) meet additional requirements not covered above;

(i) Discretionary fuel - which shall be the extra amount of fuel to be carried at the discretion of the pilot-in-command.

(4) An operator shall determine one final reserve fuel value for each aeroplane type and variant in their fleet rounded up to an easily recalled figure.

(5) A pilot in command shall not commence a flight unless the usable fuel on board meets all the requirements in subsection (3) if required and shall not continue from the point of in-flight re-planning unless the usable fuel on board meets the requirements in subsection (3) (b), (c), (d), (e) and (f) if required.

(6) Notwithstanding the provisions in subsection (3) (a), (b), (c), (d) and (f), the Authority may, based on the results of a specific safety risk assessment conducted by the operator which demonstrates how an equivalent level of safety will be maintained, approve variations to the pre-flight fuel calculation of taxi fuel, trip fuel, contingency fuel, destination alternate fuel, and additional fuel.

(7) The specific safety risk assessment shall include —

- (a) flight fuel calculations;

- (b) capabilities of the operator to include—
- (i) a data-driven method that includes a fuel consumption monitoring programme; and
 - (ii) the advanced use of alternate aerodromes; and
- (c) specific mitigation measures.
- (8) 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.

In-flight fuel management

29 (1) An operator shall establish policies and procedures, approved by the Authority, to ensure that inflight fuel checks and fuel management are performed.

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

(3) The pilot-in-command shall request delay information from ATC when unanticipated circumstances result in landing at the destination aerodrome with less than the final reserve fuel plus any fuel required to proceed to an alternate aerodrome or the fuel required to operate to an isolated aerodrome.

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

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

Refuelling with passengers on board

30 (1) No person shall refuel an aeroplane when passengers are embarking, on board or disembarking unless the aeroplane is properly attended to by qualified personnel ready to initiate and direct an evacuation of the aeroplane by the most practical and expeditious means available.

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

(3) Every person shall observe additional precautions required when refuelling with fuels other than aviation kerosene or when refuelling results in a mixture of aviation kerosene with other aviation turbine fuels, or when an open line is used.

Oxygen supply

31 (1) The approximate altitudes in the Standard Atmosphere corresponding to the values of absolute pressure used in this Part are as follows—

Absolute pressure	Metres	Feet
700 hPa	3000	10 000
620 hPa	4000	13 000
376 hPa	7600	25 000

(2) A flight to be operated at flight altitudes at which the atmospheric pressure in personnel compartments is 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; and
- (b) the crew and passengers for any period that the atmospheric pressure in compartments occupied by them will be less than 620 hPa.

(3) A flight to be operated with a pressurised aeroplane shall not be commenced unless a sufficient quantity of stored breathing oxygen is carried to supply all the crew members and passengers, as is appropriate to the circumstances of the flight being undertaken, in the event of loss of pressurisation, for any period that the atmospheric pressure in any compartment occupied by them would be less than 700 hPa.

(4) Where an aeroplane is operated at flight altitudes at which the atmospheric pressure is less than 376 hPa, or which, when 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.

Time capability of cargo compartment fire suppression system

32 (1) An Operator shall ensure that, all flights are planned so that the diversion time to an aerodrome where a safe landing can be made does not exceed time for the cargo compartment fire suppression capability of the aeroplane, when the cargo compartment fire suppression capability time is identified in the relevant aeroplane documentation, reduced by an operational safety margin specified by the Authority.

(2) An operator shall ensure that the aircraft cargo compartment fire suppression time capabilities are clearly identified in the relevant aeroplane documentation when they are to be considered for the operation.

In-flight procedures -Aerodrome operating minima

33 (1) The Pilot in command shall not continue a flight towards the aerodrome of intended landing, unless the latest available information indicates that at the expected time of arrival, a landing can be effected at that aerodrome or at least one destination alternate aerodrome, in accordance with section 16.

(2) The pilot in command—

- (a) shall not continue an instrument approach below 300 m or 1 000 ft above the aerodrome elevation or into the final approach segment unless the reported visibility or controlling RVR is at or above the aerodrome operating minima;
- (b) after entering the final approach segment or after descending below 300 m or 1 000 ft above the aerodrome elevation, the reported visibility or controlling RVR falls below the specified minimum, he or she may continue the approach to DA/H or MDA/H;
- (c) shall not continue the approach-to-land at any aerodrome beyond a point at which the limits of the operating minima specified for that aerodrome would be infringed.

Meteorological observations

34. The pilot-in-command shall report the runway braking action special air-report (AIREP) when the runway braking action encountered is not as good as was reported.

Hazardous flight conditions

35. 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.

Flight crew members at duty stations

36. (1) During take-off and landing all flight crew members are 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 aeroplane or for physiological needs.

(3) All flight crew members shall keep their seat belts fastened when at their stations except where it is necessary for the performance of their duties in connection of the aeroplane or for physiological needs.

(4) Any flight crew member occupying a pilot's seat shall keep the safety harness fastened during the take-off and landing phases whilst all other flight crew members shall keep their safety harnesses 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.

Use of oxygen

37 (1) All flight crew members, when engaged in performing duties essential to the safe operation of an aeroplane inflight, shall use breathing oxygen continuously whenever the circumstances prevail for which its supply has been required in section 33.

(2) All flight crew members of pressurised aeroplanes operating above an altitude where the atmospheric pressure is less than 376 hPa shall have available at the flight duty station a quick-donning type of oxygen mask which will readily supply oxygen upon demand.

In-flight operational instructions

38 Operational instructions involving a change in the ATS flight plan shall, when practicable, be coordinated with the appropriate ATS unit before transmission to the aeroplane.

Instrument flight procedures.

39 (1) An operator shall comply with instrument approach procedures designed to support instrument approach operations approved and published by the Authority in the aeronautical information publication (AIP) to serve each instrument runway or aerodrome utilized for instrument flight operations for aerodromes located in Zimbabwe.

(2) An operator shall ensure that an aeroplane when operated in accordance with instrument flight rules shall comply with the instrument flight procedures approved by the State in which the aerodrome is located.

Aeroplane operating procedures for noise abatement.

40 (1) An operator shall ensure that aeroplane operating procedures for noise abatement comply with the provisions contained in the technical guidance material.

(2) Noise abatement procedures referred to in subsection (1) by the operator for any one aeroplane type shall be the same for all aerodromes except where the same procedure may not satisfy the requirements at some aerodrome.

Aeroplane operating procedures for rates of climb, descent and Landing Performance

41 (1) Unless otherwise specified in an air traffic control instruction, to avoid unnecessary airborne collision avoidance system (ACAS II) resolution advisories in aircraft at or approaching adjacent altitudes or flight levels, operators shall specify procedures by which an aeroplane climbing or descending to an assigned altitude or flight level, especially with an autopilot engaged, shall do so at a rate less than 8 m/sec (1 500 ft/min), depending on the instrumentation available throughout the last 300 m (1 000 ft) of climb or descent to the assigned level when the pilot is made aware of another aircraft at or approaching an adjacent altitude or flight level.

(2) The pilot in command must ensure that an approach to land shall not be continued below 300 m (1 000 ft) above aerodrome elevation unless the pilot-in-command is satisfied that, with the runway surface condition information available, the aeroplane performance information indicates that a safe landing can be made.

Duties of Pilot-In-Command

42. (1) A pilot-in-command shall—

- (a) be responsible for the safety of all crew members, passengers and cargo on board when the doors are closed;
- (b) be responsible for the operation and safety of the aeroplane from the moment the aeroplane is ready to move for the purpose of taking off until the moment it finally comes to rest at the end of the flight and the engine or engines used as primary propulsion units are shut down;
- (c) ensure that the checklists specified in section 14 are complied with in detail;
- (d) be responsible for notifying the nearest appropriate authority by the quickest available means of any accident involving the aeroplane, resulting in serious injury or death of any person or substantial damage to the aeroplane or property;
- (e) be responsible for reporting all known or suspected defects in the aeroplane, to the operator, at the termination of the flight;
- (f) submit a report to the Authority of any accident which occurred while that PIC was responsible for the flight;
- (g) be responsible for the journey log book or the general declaration containing the information listed section 182

Duties of flight Dispatcher

43 (1) Subject to section 9, a flight dispatcher shall—

- (a) assist the pilot-in-command in flight preparation and provide the relevant information;
- (b) assist the pilot-in-command in preparing the operational and ATS flight plans, sign when applicable and file the ATS flight plan with the appropriate ATS unit;
- (c) furnish the pilot-in-command while in flight, by appropriate means, with information which may be necessary for the safe conduct of the flight; and

- (d) notify the appropriate ATS unit when the position of the aeroplane cannot be determined by an aircraft tracking capability, and attempts to establish communication are unsuccessful.
- (2) In the event of an emergency, a flight dispatcher shall—
 - (a) initiate such procedures as outlined in the operations manual while avoiding taking any action that would conflict with ATC procedures; and
 - (b) convey safety-related information to the pilot-in-command that may be necessary for the safe conduct of the flight, including information related to any amendment to the flight plan that become necessary in the course of the flight.

Carry-on baggage

44. An operator shall ensure that all baggage carried onto an aeroplane and taken into the passenger cabin is adequately and securely stowed.

Additional requirements for single pilot operations under the instrument flight rules (IFR) or at night

- 45 (1) No operator shall allow operations under IFR or at night by a single pilot unless—
- (a) approved by the Authority;
 - (b) the flight manual does not require a flight crew of more than one;
 - (c) the aeroplane is propeller-driven;
 - (d) the maximum approved passenger seating configuration is not more than nine;
 - (e) the maximum certificated take-off mass does not exceed 5 700 kg;
 - (f) the aeroplane is equipped as described in section 105
 - (g) the pilot-in-command has satisfied the requirements of experience, training, checking and recency described in section 136.

Additional requirements for single engine turbine powered aeroplane operations under instrument flight rules (IFR) or at night

46 (1) No operator shall operate a single engine piston powered aeroplane under instrument meteorological conditions (IMC) or at night.

(2) No operator shall operate a single engine turbine powered aeroplane under instrument meteorological conditions (IMC) or at night unless an approval for such operations is issued by the Authority.

(3) In approving operations by single-engine turbine-powered aeroplanes at night or in IMC, the Authority shall ensure that the airworthiness certification of the aeroplane is appropriate and that the overall level of safety intended by the provisions of the Third Schedule to this Part and Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018 is provided by—

- a) the reliability of the turbine engine;
- b) the operator's maintenance procedures, operating practices, flight dispatch procedures and crew training programmes; and
- c) equipment and other requirements provided in accordance with Third Schedule.

Fatigue management

47 (1) The Authority has established prescriptive flight time, flight duty period and duty period limitations and rest period requirements as outlined in the Twelfth Schedule of this Part.

(2) The prescriptive limits referred to in subsection (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) An operator, 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 limits established in the Twelfth Schedule.

(4) An 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.

(5) In approving an operator's flight time, flight duty period and duty period limitations and rest period requirements, 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 limits 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 limitations.
- (6) No operator shall implement non-prescriptive fatigue management methods.

SUB-PART IV
AEROPLANE PERFORMANCE OPERATING LIMITATIONS

General

48 (1) An operator shall ensure that an aeroplane operates in accordance with requirements of Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018.

(2) Except as provided for in section 56, an operator shall ensure that single-engine aeroplanes shall only be operated in conditions of weather and light, and over such routes and diversions therefrom, that permit a safe forced landing to be executed in the event of engine failure.

(3) An operator of an aeroplane for which Parts IIIA and IIIB of Annex 8 are not applicable because of the exemption provided for in Article 41 of the Convention, shall ensure that the level of performance specified in section 53 is met as far as practicable.

Mass limitations

49 (1) The mass of the aeroplane at the start of take-off shall—

- (a) not exceed the mass at which subsection (2) is complied with, or the mass at subsections (5), (6) and (7) are complied with, allowing for expected reductions in mass as the flight proceeds, and for such fuel jettisoning as is envisaged in applying subsections (6) and (7) and, in respect of alternate aerodromes, subsections (1) (c) and (7);
- (b) not exceed the maximum take-off mass specified in the flight manual for the pressure-altitude appropriate to the elevation of the aerodrome, and, where used as a parameter to determine the maximum take-off mass, any other local atmospheric condition;
- (c) not exceed the estimated mass for the expected time of landing at the aerodrome of intended landing and at any destination alternate aerodrome, exceed the maximum landing mass specified in the flight manual for the pressure-altitude appropriate to the elevation of those aerodromes, and where used as a parameter to determine the maximum landing mass, any other local atmospheric condition; or
- (d) at the expected time of landing at the aerodrome of intended landing and at any destination alternate aerodrome, not exceed the relevant maximum masses at which compliance has been demonstrated with the applicable noise certification, unless otherwise authorised in exceptional circumstances for a certain aerodrome or a runway where there is no noise disturbance problem, by the competent authority of the State in which the aerodrome is situated.

(2) Take off: An operator shall ensure that an aeroplane in the event of a critical engine failing, or for other reasons, at any point in the take-off, is capable of, either discontinuing the take-off and stop within the accelerate-stop distance available, or continuing the take-off and clear all obstacles along the flight path by an adequate vertical or horizontal distance until the aeroplane is in a position to comply with subsection (6) and when determining the resulting take-off obstacle accountability area, the operating conditions, such as the crosswind component and navigation accuracy, must be taken into account.

(3) In determining the length of the runway available referred to in subsection (2), account shall be taken of the loss, if any, of runway length due to alignment of the aeroplane prior to take-off.

(4) In determining the length of the runway available, the operator shall take into account the loss, if any, of runway length due to alignment of the aeroplane prior to take-off.

(5) En route — one engine inoperative; An operator shall ensure that an aeroplane is be able, in the event of the critical engine becoming inoperative at any point along the route or planned diversions therefrom, to continue the flight to an aerodrome at which provisions of subsection (6) can be met, without flying below the minimum flight altitude at any point.

(6) An operator shall ensure that, at the aerodrome of intended landing and at any alternate aerodrome, after clearing all obstacles in the approach path by a safe margin—

- (a) an aeroplane is capable to land, with assurance that it can come to a stop;
 - (b) a seaplane is capable of being reduced to a satisfactorily low speed;
- within the landing distance available.

(7) Allowance shall be made for expected variations in the approach and landing techniques, if such allowance has not been made in the scheduling of performance data.

Obstacle Data

50 (1) The Authority shall ensure that obstacle data is provided to enable the operator to develop procedures to comply with section 54 (4)

(2) An operator shall use the obstacle data referred to in subsection (1) to develop procedures to comply with section 54 (4).

(3) An operator shall take into account of charting accuracy when assessing compliance with section 54 (2).

Additional requirements for operations of single-engine turbine-powered aeroplanes at night or in instrument meteorological conditions (IMC)

51 (1) No operator shall operate a single-engine piston powered aeroplane under instrument meteorological conditions (IMC) or at night.

(2) No operator shall operate a single engine turbine powered aeroplane under instrument meteorological conditions (IMC) or at night unless an approval for such operations is issued by the Authority.

(3) In approving operations by single-engine turbine-powered aeroplanes at night or in IMC, the Authority shall ensure that the airworthiness certification of the aeroplane is appropriate and that the overall level of safety intended by the provisions of the Third Schedule to this Part and Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018 is provided by—

(a) the reliability of the turbine engine;

(b) the operator's maintenance procedures, operating practices, flight dispatch procedures and crew training programs; and

(c) equipment and other requirements provided in accordance with the Third Schedule.

(4) All single-engine turbine-powered aeroplanes operated at night or in IMC shall have an engine trend monitoring system, and those aeroplanes for which the individual certificate of airworthiness is first issued on or after 1 January 2005 shall have an automatic trend monitoring system.

SUB PART V

AEROPLANE INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

GENERAL

Instruments, equipment and flight documents to be installed or carried in aeroplanes

52 (1) In addition to the minimum equipment necessary for the issuance of a certificate of airworthiness, the instruments, equipment and flight documents prescribed in subsections (3) to (5) shall be installed or carried, as appropriate, in aeroplanes according to the aeroplane used and to the circumstances under which the flight is to be conducted.

(2) The prescribed instruments and equipment, including their installation, shall be approved or accepted by the State of Registry.

(3) An aeroplane shall carry a certified true copy of the air operator certificate, and a copy of the operations specifications relevant to the aeroplane, issued in conjunction with the certificate:

Provided that where the certificate and the associated operations specifications are issued by the Authority in a language other than English, an English translation shall be included.

(4) An 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:

Provided that where Zimbabwe is not the State of Registry, the Authority shall ensure that the MEL does not affect the aeroplane's compliance with the airworthiness requirements applicable in the State of Registry.

(5) An operator shall provide operations staff and flight crew with an aircraft operating manual, which shall— include details of the aircraft systems and of the checklists to be used for each aircraft type operated;

- (a) contain the normal, abnormal and emergency procedures relating to the operation of the aircraft; and
- (b) be designed in a manner that observes Human Factors principles.

Aeroplane operated under an Article 83 bis agreement

53 (1) An operator when operating an aeroplane under an Article 83 *bis* agreement entered into between the State of Registry and the State of the Operator, shall carry on board the aeroplane a certified true copy of the agreement summary, in either an electronic or hard copy format;

Provided that where the summary is issued in a language other than English, an English translation shall be included.

(2) An operator shall ensure that the agreement summary referred to in subsection (1) is —

- (a) accessible to a civil aviation safety inspector to determine which functions and duties are transferred under the agreement by the State of Registry to the State of the Operator when conducting surveillance activities, such as ramp checks ;and
- (b) transmitted to ICAO for registration with the ICAO Council.

(3) The agreement summary shall contain the information and follow the layout specified in the Tenth Schedule

Aeroplanes on all flights

54 (1) An operator shall ensure that an aeroplane is equipped with instruments which will enable the flight crew to —

- (a) control the flight path of the aeroplane;
- (b) carry out any required procedural manoeuvres; and
- (c) observe the operating limitations of the aeroplane in the expected operating conditions.

(2) An operator shall ensure that an aeroplane is equipped with—

(a) accessible and adequate medical supplies which shall comprise of the following—

- (i) one or more first-aid kits for the use of cabin crew in managing incidents of ill health;
- (ii) for aeroplanes required to carry cabin crew as part of the operating crew, one universal precaution kit (two for aeroplanes authorised to carry more than 250 passengers) for the use of cabin crew members 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; and
- (iii) for aeroplanes authorised to carry more than 100 passengers on a sector length of more than two hours, a medical kit for the use of medical doctors or other qualified persons in treating in-flight medical emergencies.

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

- (i) the pilot's compartment; and
- (ii) 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 above;

(d) a seat belt for each seat and restraining belts for each berth;

(e) a safety harness for each flight crew seat, with the safety harness for each pilot seat incorporating a device —

- (i) which will automatically restrain the occupant's torso in the event of rapid deceleration;
- (ii) to prevent a suddenly incapacitated pilot from interfering with flight controls;
- (iii) means of ensuring that the following information and instructions are conveyed to passengers—
 - A. when seat belts are to be fastened;
 - B. when and how oxygen equipment is to be used if the carriage of oxygen is required;
 - C. restrictions on smoking;
 - D. location and use of life jackets or equivalent individual flotation devices where their carriage is required; and
 - E. location and method of opening emergency exits; and

(f) 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 an aeroplane for which the individual certificate of airworthiness is first issued on or after 31 December 2011 and any

extinguishing agent used in a portable fire extinguisher in an aeroplane 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 Layer, Annex A, Group II.
- (4) An operator shall ensure that an aeroplane carries—
- (a) an operations manual prescribed in this Part, or parts of it that pertain to flight operations;
 - (b) a flight manual for the aeroplane, or other documents containing performance data and any other information necessary for the operation of the aeroplane 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.

Marking of break-in points

55 (1) If areas of the fuselage suitable for break-in by rescue crews in an emergency are marked on an aeroplane, the operator shall ensure that such areas shall be marked as shown in the Eleventh Schedule.

(2) The colour of the markings 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.

Flight recorders

56 (1) Crash-protected flight recorders comprise of one or more of the following—

- (a) a flight data recorder (FDR);
 - (b) a cockpit voice recorder (CVR);
 - (c) an airborne image recorder (AIR); or
 - (d) a data link recorder (DLR).
- (2) As per the Eighth Schedule of this Part, image and data link information may be recorded on either the CVR or the FDR.
- (3) Lightweight flight recorders comprise of one or more of the following—
- (a) an aircraft data recording system (ADRS);
 - (b) a cockpit audio recording system (CARS);
 - (c) an airborne image recording system (AIRS); or
 - (d) a data link recording system (DLRS).
- (4) As per the Eighth Schedule, image and data link information may be recorded on either the (CARS) or (ADRS).

Flight data recorders (FDR), and aircraft data recording systems

57 (1) An operator shall ensure that a turbine-engined aeroplane of a maximum certificated take-off mass of 5 700 kg or less for which the individual certificate of airworthiness is first issued on or after 1 January 2016 shall be equipped—

- (a) an FDR which shall record at least the first 16 parameters listed in table A8-1 in the Eighth Schedule of this Part; or
- (b) a class C (AIR) or (AIRS) which shall record at least the flight path and speed parameters displayed to the pilot or pilots; as defined in the Eighth Schedule of this Part; or
- (c) an ADRS which shall record at least the first 7 parameters listed in table A8-3 in the Eighth Schedule of this Part.

(2) An operator shall ensure that a multi-engined turbine-engined aeroplane of a maximum certificated take-off mass of 5 700 kg or less for which the individual certificate of airworthiness was first issued on or after 1 January 1990 shall be equipped with an FDR which shall record at least the first 16 parameters listed in table A8-1 of the Eighth Schedule of this Part.

(3) An operator shall ensure that a turbine-engined aeroplane, for which the individual certificate of airworthiness was first issued before 1 January 1987 but before 1 January 1989, with a maximum certificated take-off mass of over 5 700 kg, except those in subsection (7), shall be equipped with an FDR which shall record at least the first 9 parameters listed in table A8-1 of the Eighth Schedule of this Part.

Recording technology - FDR

58 An operator shall ensure that FDRs or ADRS do not use engraving metal foil, frequency modulation, photographic film or magnetic tape.

Duration of FDR

59 (1) An operator shall ensure that all FDRs shall retain the information recorded during at least the last 25 hours of their operation, with exception of those installed on aeroplanes referred in section 64 (4) for which the FDR shall retain the information recorded during at least the last 30 minutes of its operation, and in addition sufficient information from the preceding take-off for calibration purpose.

Cockpit voice recorders and cockpit audio recording systems - Application

60 (1) An operator shall ensure that all turbine-engined aeroplanes of a maximum certificated take-off mass of 5 700 kg or less for which the individual certificate of airworthiness are first issued on or after 1 January 2016 and required to be operated by more than one pilot is equipped with either a CVR or a CARS.

CVR and CARS Recording technology

61 An operator shall ensure that CVRS and CARS do not use magnetic tape or wire.

CVR duration

62 An operator shall ensure that a CVR retains the information recorded during at least the last 2 hours of its operation.

CVR - alternate power source

63 (1) An operator shall ensure that an aeroplane is installed with a CVR that has an alternate power source that shall automatically engage and provide 10 minutes, plus or minus one minute, of operation whenever aeroplane power to the recorder ceases, either by normal shutdown or by any other loss of power and the alternate power source shall power the CVR and its associated cockpit area microphone components.

(2) The CVR referred to in subsection (1) shall be located as close as practicable to the alternate power source.

Flight recorders general - Construction and installation

64 (1) An operator shall ensure that flight recorders—

- (a) are constructed, located and installed so as to provide maximum practical protection for the recordings so that the recorded information may be preserved, recovered and transcribed;
- (b) meet the prescribed crashworthiness and fire protection specifications.

Operation

65 (1) No person shall switch off flight recorders during flight time.

(2) To preserve flight recorder records, every operator shall ensure that flight recorders are deactivated upon completion of flight time following an accident or incident:

Provided that the flight recorders shall not be reactivated before their disposition as determined in accordance with Civil Aviation (Accident and Incident Investigation) Regulations.

Continued serviceability

66 Every operator shall conduct operational checks and evaluations of recordings from the flight recorder systems to ensure the continued serviceability of the recorders in accordance with the Eighth Schedule to this Part.

Flight recorder electronic documentation

67 An operator shall provide to accident investigation authorities the documentation required concerning FDR and ADRS parameters in electronic format and take account of industry specifications.

All aeroplanes operated as VFR flights

68 (1) An operator shall ensure that all aeroplanes when operated as VFR flights shall be equipped with—

- (a) a magnetic compass;
- (b) an accurate timepiece indicating the time in hours, minutes and seconds;
- (c) a sensitive pressure altimeter;
- (d) an airspeed indicator; and

(e) such additional instruments or equipment as may be prescribed by the Authority.

(2) VFR flights which are operated as controlled flights shall be equipped in accordance with section...6.9.

All aeroplanes on flights over water

Seaplanes

69 (1). An operator of a seaplane shall ensure that a seaplane for all flights 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;
- (b) equipment for making the sound signals prescribed in the International Regulations for Preventing Collisions at Sea, where applicable; and
- (c) one sea anchor (drogue).

Landplanes

70 (1) An operator of a landplane shall ensure that a landplane shall carry 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 when—

- (a) flying over water and at a distance of more than 93 km (50 NM) away from the shore, in the case of landplanes operated in accordance with section 54 (4) or 56 (5)
- (b) flying en route over water beyond gliding distance from the shore, in the case of all other landplanes; and
- (c) taking off or landing at an aerodrome 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 a likelihood of a ditching.

(2) Life jackets accessible from seats or berths located in crew rest compartments are required only when the seats or berths concerned are certified to be occupied during take-off and landing.

All aeroplanes on long-range over-water flights

72 (1) Every operator shall ensure that in addition to the equipment referred to in section 82 and 83, whichever is applicable, the following equipment shall be installed in all aeroplanes when used over routes on which the aeroplane may be over water and at more than a distance corresponding to 120 minutes at cruising speed or 740 km (400 NM), whichever is the lesser, away from land suitable for making an emergency landing in the case of aircraft operated in terms of sections 54 (4) and 54 (5), and 30 minutes or 185 km (100 NM), whichever is the lesser, for all other aeroplanes—

- (a) 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;
- (b) equipment for making the pyrotechnical distress signals described in Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018;

(2) Each life jacket and equivalent individual flotation device, when carried in terms of sections 82(1)(a), and 83(1), shall be equipped with a means of electric illumination for the purpose of facilitating the location of persons, except where the requirements in section 83 (1)(c) are met by the provision of individual flotation devices other than life jackets.

All Aeroplanes on flights over designated land areas

85. When operating across land areas which have been designated by the State concerned as areas in which search and rescue would be especially difficult, an operator shall ensure that the aeroplane is equipped with such signalling devices and life-saving equipment, including means of sustaining life as may be appropriate to the area overflown.

All aeroplanes on high altitude flights

73 (1) An operator shall ensure that an aeroplane intended to be operated at flight altitudes at which the atmospheric pressure is less than 700 hPa in personnel compartments shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the oxygen supplies required in terms of section 33(2).

(2) An operator shall ensure that an aeroplane intended to be operated at flight altitudes at which the atmospheric pressure is less than 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 terms of section 33(3).

(3) An operator shall ensure that all pressurised aeroplanes intended to be operated at flight altitudes at which the atmospheric pressure is less than 376 hPa shall be equipped with a device to provide positive warning to the flight crew of any dangerous loss of pressurisation.

(4) An operator shall ensure that an aeroplane intended to be operated at flight altitudes at which the atmospheric pressure is less than 376 hPa, or which, when operated at flight altitudes at which the atmospheric pressure is more than 376 hPa, cannot descend safely within 4 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 in terms of section 33(3).

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

All aeroplanes in icing conditions

74 An operator shall ensure that an aeroplane is equipped with suitable de-icing or anti-icing devices when operated in circumstances in which icing conditions are reported to exist or are expected to be encountered.

All aeroplanes operated in accordance with instrument flight rules

75 (1) An operator shall ensure that an aeroplane when operated in accordance with the instrument flight rules, or when the aeroplane cannot be maintained in a desired attitude without reference to one or more flight instruments, shall be equipped with—

- (a) a magnetic compass;
- (b) an accurate timepiece indicating the time in hours, minutes and seconds;
- (c) two sensitive pressure altimeters with counter drum-pointer; or equivalent presentation;
- (d) an airspeed indicating system with means of preventing malfunctioning due to either condensation or icing;
- (e) a turn and slip indicator;
- (f) an attitude indicator (artificial horizon);
- (g) a heading indicator (directional gyroscope);
- (h) a means of indicating whether the power supply to the gyroscopic instrument is adequate;
- (i) a means of indicating in the flight crew compartment the outside air temperature;
- (j) a rate-of-climb and descent indicator; and

(l) such additional instruments or equipment as may be prescribed by the Authority.

(2) The requirements of subsection 1(e), (f) and (g) may be met by combinations of instruments or by integrated flight director systems provided that the safeguards against total failure, inherent in the three separate instruments, are retained.

All aeroplanes when operated at night

76 (1) An operator shall ensure that an aeroplane when operated at night shall be equipped with—

- (a) all equipment specified in section 88 and 89;
- (b) the lights required by Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018 and the specifications for the lights as specified in the First Schedule for aircraft in flight or operating on the movement area of an aerodrome;
- (c) two landing lights;
- (d) illumination for all instruments and equipment that are essential for the safe operation of the aeroplane that are used by the flight crew;
- (e) lights in all passenger compartments; and
- (f) an independent portable light for each crew member station.

Pressurised aeroplanes when carrying passengers — weather radar

77 An operator shall ensure that a pressurised aeroplane when carrying passengers shall be equipped with operative weather radar whenever such aeroplanes are being operated in areas where thunderstorms or other potentially hazardous weather conditions, regarded as detectable with airborne weather radar, may be expected to exist along the route either at night or under instrument meteorological conditions.

All aeroplanes complying with noise certification

78 An operator shall ensure that an aeroplane carries a document attesting noise certification and where 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.

Mach number indicator

79 An operator shall ensure that an aeroplane with speed limitations expressed in terms of Mach number shall be equipped with a Mach number indicator.

Aeroplanes required to be equipped with ground proximity warning systems (GPWS)

80 (1) A ground proximity warning system shall provide automatically a timely and distinctive warning to the flight crew when the aeroplane is in potentially hazardous proximity to the earth's surface.

(2) A ground proximity warning system shall provide, unless otherwise specified herein, warnings of the following circumstances—

- (a) excessive descent rate;
- (b) excessive terrain closure rate;
- (c) excessive altitude loss after take-off or go-around;
- (d) unsafe terrain clearance while not in landing configuration—
 - (i) gear not locked down;
 - (ii) flaps not in a landing position; and
- (e) excessive descent below the instrument glide path.

Emergency locator transmitter (ELT)

81 (1) An operator shall ensure that an aeroplane shall carry an automatic ELT.

(2) ELT equipment carried in terms of this section shall operate in compliance with Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019.

Location of aeroplane in distress

82 An operator shall make position information of a flight in distress available to the appropriate organisations, as established by the Authority in the applicable technical guidance material.

Aeroplanes required to be equipped with airborne collision avoidance system (ACAS II)

-Requirements for pressure-altitude reporting transponders

83 (1) An operator shall ensure that an aeroplane is equipped with a pressure-altitude reporting transponder which operates in accordance with the relevant provisions of Civil Aviation (Aeronautical Telecommunications) Regulations, published in statutory instrument 110 of 2019.

(2) An operator shall ensure that an aeroplane is equipped with a data source that provides pressure-altitude information with a resolution of 7.62 m (25 ft) or better.

(3) The Mode S transponder shall be provided with the airborne or on-the-ground status if the aeroplane is equipped with an automatic means of detecting such status.

Microphones

84 An operator shall ensure that flight crew members required to be on flight deck duty communicate through boom or throat microphones below the transition level or altitude.

Turbo-jet aeroplanes — forward-looking wind shear warning system

All aeroplanes operated by a single pilot under IFR or at night

85 (1) In order for an operator to obtain an approval required in terms of section 50, the operator shall ensure that an aeroplane operated by a single pilot under the IFR or at night shall be equipped with—

- (a) a serviceable autopilot that has at least altitude hold and heading select modes;
- (b) a headset with a boom microphone or equivalent; and
- (c) means of displaying charts that enables them to be readable in all ambient light conditions.

Electronic flight bags-equipment

86 Where portable EFBs are used on board an aeroplane, the operator shall ensure that they do not affect the performance of the aeroplane systems, equipment or the ability to operate the aeroplane.

EFB Functions

87 (1) Where EFBs are used on board an aeroplane the operator shall—

- (a) assess the safety risks 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.

(2) The Authority shall issue a specific approval for the operational use of EFB functions to be used for the safe operation of aeroplanes.

EFB specific approval

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

- (a) the EFB equipment and its associated installation hardware, including interaction with aeroplane systems where applicable, meet the appropriate airworthiness certification requirements;
- (b) the operator has assessed the safety risks associated with the operations supported by the EFB functions;
- (c) the operator has established requirements for redundancy of the information where appropriate as contained in and displayed by the EFB functions;
- (d) the operator has established and documented procedures for the management of the EFB functions including any database it may use; and
- (e) the operator has established and documented the procedures for the use of, and training requirements for, the EFB and the EFB function.

SUB PART VI

AEROPLANE COMMUNICATION, NAVIGATION AND SURVEILLANCE EQUIPMENT

Communication equipment

89 (1) An operator shall ensure that an aeroplane is provided with radio communication equipment capable of—

- (a) conducting two-way communication for aerodrome 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) The radio communication equipment required in accordance with subsection (1) shall provide for communications on the aeronautical emergency frequency 121.5 MHz.

(3) For operations where communication equipment is required to meet required communication performance (RCP) specification for performance-based communication (PBC), an aeroplane shall, in addition to the requirements specified in subsection (1)—

- (a) be provided with communication equipment which will enable it to operate in accordance with the prescribed RCP specifications;
- (b) have information relevant to the aeroplane RCP specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of Design or State of Registry; and
- (c) have information relevant to the aeroplane RCP specification capabilities included in the MEL.

(4) The Authority shall, for operations where an RCP specification for PBC 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 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 of those aeroplanes referred to in subsection (3), adequate provisions exist for—

- (a) receiving the reports of observed communication performance issued by monitoring programmes established in accordance with the applicable Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018 and
- (b) taking immediate corrective action for individual aircraft, aircraft types or operators, identified in such reports as not complying with the RCP specifications.

Navigation equipment

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

- (a) its operational flight plan;
- (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) For operations where a navigation specification for PBN has been prescribed, an operator shall ensure that an aeroplane shall, in addition to the requirements specified in subsection (1)—

- (a) be provided with navigation equipment which will enable it to operate in accordance with the prescribed navigation specifications;
- (b) have information relevant to the aeroplane navigation specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of Design or State of Registry; and
- (c) have information relevant to the aeroplane navigation specification capabilities included in the MEL.

(3) The Authority shall, for operations where a navigation specification for PBN 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 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 the appropriate navigation specifications.

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

(5) An operator shall ensure that an aeroplane 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 aeroplane to navigate in terms of subsection (1).

(6) An operator shall ensure that on flights in which it is intended to land in instrument meteorological conditions, an aeroplane shall be provided with radio equipment capable of receiving signals providing guidance to a point from which a visual landing can be effected.

(7) The equipment referred to in subsection (13) shall be capable of providing such guidance for each aerodrome at which it is intended to land in instrument meteorological conditions and for any designated alternate aerodromes.

Surveillance equipment

91 (1) An operator shall ensure that an aeroplane is provided with surveillance equipment which will enable it to operate in accordance with the requirements of air traffic services.

(2) For operations where surveillance equipment is required to meet a Required Surveillance Performance (RSP) specification for performance-based surveillance (PBS), an aeroplane 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 specifications;
- (b) have information relevant to the aeroplane RSP specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of Design or State of Registry; and
- (c) have information relevant to the aeroplane RSP specification capabilities included in the MEL.

(3) The 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.

(4) The Authority shall ensure that, in respect of those aeroplanes mentioned in subsection (2), adequate provisions exist for—

- (a) receiving the reports of observed surveillance performance issued by monitoring programmes established in accordance with Civil Aviation (Rules of the Air and Air Traffic Services) Regulations, published in statutory instrument 197 of 2018; and
- (b) taking immediate corrective action for individual aircraft, aircraft types or operators, identified in such reports as not complying with the RSP specifications.

Installation

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

Electronic navigation data management

93 (1) No operator shall 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.

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

SUB PART VII AEROPLANE CONTINUING AIRWORTHINESS

Operator's Continuing Airworthiness Responsibilities

94 (1) For the purpose of this subpart "airplane" includes engines, propellers, components, accessories, instruments, equipment and apparatus including emergency equipment.

(2) An operator shall ensure that, in accordance with procedures acceptable to the Authority—

- (a) each aeroplane they operate is maintained in an airworthy condition;
- (b) the operational and emergency equipment necessary for an intended flight is serviceable; and
- (c) the certificate of airworthiness of each aeroplane they operate remains valid.

(3) An operator shall not operate an aeroplane unless maintenance on the aeroplane, including any associated engine, propeller and part, is carried out—

- (a) by an organisation complying with Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018 that is either approved by the Authority or is approved by another Contracting State and is accepted by the Authority; or
- (b) by a person or organisation in accordance with procedures that are authorised by the Authority; and there is a maintenance release in relation to the maintenance carried out.

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

(5) An operator shall ensure that the maintenance of its aeroplanes is performed in accordance with the approved maintenance programme.

Operator's maintenance control manual

95 (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 operator's maintenance control manual.

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

(3) An operator shall ensure that the maintenance control manual is amended as necessary to keep the information contained therein up to date.

(4) 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.

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

Maintenance programme

96 (1) An operator shall provide, for the use and guidance of maintenance and operational personnel concerned, a maintenance programme, approved by the Authority, containing the information required in section 186 of this Part.

(2) The design and application of the operator's maintenance programme shall observe Human Factors principles.

(3) 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.

Continuing airworthiness records

97 (1) An operator shall ensure that the following records are kept for a minimum period of 90 days—

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

(b) the current status of compliance with all mandatory continuing airworthiness information;

(c) appropriate details of modifications and repairs;

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

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

(f) the detailed maintenance records to show that all requirements for the signing of a maintenance release have been met.

(2) The continuing airworthiness records referred to 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 referred to in subsection (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. In the event of any permanent change of operator, the records shall be transferred to the new operator.

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

Continuing airworthiness information

98 (1) An operator shall monitor and assess maintenance and operational experience with respect to continuing airworthiness and provide the information as prescribed by the Authority and report through the system specified in Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018.

(2) An operator 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 Authority.

Modifications and repairs

99 An operator shall ensure that all modifications and repairs comply with airworthiness requirements acceptable to the Authority and procedures shall be established to ensure that the substantiating data supporting compliance with the airworthiness requirements are retained.

Approved maintenance organisation

100. An approved maintenance organisation shall comply with Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018.

Maintenance release

101 (1) When maintenance is carried out by an approved maintenance organisation, the maintenance release shall be issued by the approved maintenance organisation in accordance with the provisions of Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018.

(2) When maintenance is not carried out by an approved maintenance organisation, the maintenance release shall be completed and signed by a person appropriately licensed in accordance with Civil Aviation (Personnel Licensing) Regulations, published in statutory instrument 176 of 2019 to certify that the maintenance work performed has been completed satisfactorily and in accordance with approved data and procedures acceptable to the Authority.

(3) When maintenance is not carried out by an approved maintenance organisation, the maintenance release shall include the following—

- (a) basic details of the maintenance carried out including detailed reference of the approved data used;
- (b) the date such maintenance was completed; and
- (c) the identity and licence details of the person or persons signing the release.

SUB PART VIII
AEROPLANE FLIGHT CREW

Composition of the flight crew

102 (1) An operator shall ensure that the number and composition of the flight crew is not less than that specified in the approved operations manual.

(2) The flight crew referred to in subsection (1) shall include flight crew members in addition to the minimum numbers specified in the flight manual or other documents associated with the certificate of airworthiness, when necessitated by considerations related to the type of aeroplane used, the type of operation involved and the duration of flight between points where flight crew are changed.

Radio operator

103 The flight crew shall include at least one member who holds a valid license, issued or rendered valid by the State of Registry, authorising operation of the type of radio transmitting equipment to be used.

Flight crew member emergency duties

104 (1) An operator shall, for each type of aeroplane, assign to all flight crew members the necessary functions they are to perform in an emergency or in a situation requiring emergency evacuation.

(2) Annual training in accomplishing these functions shall be contained in the operator's training programme and shall include instruction in the use of all emergency and life-saving equipment required to be carried, and drills in the emergency evacuation of the aeroplane.

Flight crew member training programmes

105 (1) An operator shall establish and maintain a ground and flight training programme including—

- (a) initial recurrent;
- (b) transition (conversion);
- (c) requalification;
- (d) upgrade;
- (e) recency of experience;
- (f) familiarisation;
- (g) differences; and
- (h) other specialised training as applicable.

(2) An operator shall ensure that the training programme referred to in subsection (1), which ensures that all flight crew members are adequately trained to perform their assigned duties is approved by the Authority

(3) The training programme shall—

- (a) include ground and flight training facilities and properly qualified instructors as determined by the Authority;
 - (b) consist of ground and flight training in the type(s) of aeroplane on which the flight crew member serves;
 - (c) include proper flight crew coordination and training in all types of emergency and abnormal situations or procedures caused by engine, airframe or systems malfunctions, fire or other abnormalities;
 - (d) include upset prevention and recovery training;
 - (e) include training in knowledge and skills related to visual and instrument flight procedures for the intended area of operation, charting, human performance including threat and error management and in the transport of dangerous goods;
 - (f) ensure that all flight crew members know the functions for which they are responsible and the relation of these functions to the functions of other crew members, particularly in regard to abnormal or emergency procedures; and
 - (g) be undertaken on a recurrent basis, as determined by the Authority and shall include an assessment of competence.
- (4) The requirement for recurrent flight training in a particular type of aeroplane shall be considered fulfilled by—
- (a) the use, to the extent deemed feasible by the Authority, of flight simulation training devices approved by the Authority for that purpose; or
 - (b) the completion within the appropriate period of the proficiency check required by section 135 in that type of aeroplane.

Duties during critical phases of flight

106 (1) No flight crew member shall—

- (a) perform any duties during a critical phase of flight except duties required for the safe operation of the aircraft;
- (b) engage in any activity during a critical phase of flight which may distract or interfere with the performance of that flight crew member's assigned duties.

Manipulation of the controls

107 (1) No pilot in command shall allow an unqualified person to manipulate the controls of an aircraft during commercial air transport operations.

(2) No person shall manipulate the controls of an aircraft during commercial air transport operations unless such person is qualified to manipulate the controls and is authorised to do so by the air operator certificate holder.

Power to inspect

108 (1) The pilot in command shall give an inspector free and uninterrupted access to the aircraft, including the cockpit, when an inspector from the Authority presents valid aviation safety inspector credentials to the PIC in order to conduct an inspection.

(2) The pilot in command may refuse an inspector access to the cockpit if, in his opinion, the safety of the aircraft may be endangered.

Qualifications-recent experience — pilot-in-command and co-pilot

109 (1) No operator shall assign a pilot-in-command or a co-pilot to operate at the flight controls of a type or variant of a type of aeroplane 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 aeroplane or in a flight simulator approved for the purpose.

(2) Where a pilot-in-command or a co-pilot is flying 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 decide under which conditions the requirements of subsection (1) for each variant or each type of aeroplane can be combined.

(3) The take-offs and landings required by subsection (1) may be performed in a visual synthetic flight trainer approved by the Authority to include take-off and landing manoeuvres and any person who fails to make the 3 required take-offs and landings within any consecutive 90 day period shall re-establish recency of experience as provided in this Part.

(4) In addition to meeting all applicable training and checking requirements of this Part, a flight crew member who has not met the requirements of subsection (1) shall re-establish recency of experience as follows—

- (a) under the supervision of a check pilot, make at least 3 take-offs and landings in the type of aircraft in which that person is to serve or where an advanced synthetic flight trainer is used, the requirements of this Part shall be met; and
 - (b) the take-offs and landings required in this paragraph shall include—
 - (i) at least one take-off with a simulated failure of the most critical engine;
 - (ii) at least one landing from an instrument landing system approach to the lowest instrument landing system minimum authorised for the certificate holder; and
 - (iii) at least one landing to a full stop.
- (5) A required flight crew member who performs the manoeuvres prescribed in subsection (3) in a visual synthetic flight trainer shall—
- (a) have previously logged 100 hours of flight time in the same aircraft type in which the pilot is to serve; and
 - (b) be observed on the first 2 landings made in operations under this Part by an approved check pilot who acts as pilot-in-command and occupies a pilot seat and the landings shall be made in weather minima that are not less than those contained in the AOC holder's operation specifications for Category I operations, and shall be made within 45 days following completion of training in the synthetic flight trainer.
- (6) When using a synthetic flight trainer to accomplish any of the requirements of subsection (1) or (3), a required flight crew member position shall be operated as if in a normal in-flight environment without use of the repositioning features of the synthetic flight trainer.
- (7) A check pilot who observes the take-offs and landings prescribed in subsection (3)(a) and (4) shall certify that the person being observed is proficient and qualified to perform flight duty in operations under this Part and may require any additional manoeuvres that are determined necessary to make this certifying statement.

Pilot operating limitations and pairing requirements

110 (1) Where a co-pilot has fewer than 50 hours of flight time as co-pilot in operations in the aircraft type being flown, and the pilot-in-command is not an appropriately qualified check pilot, the pilot in command shall make all take-offs and landings in the following situations—

- (a) special airports designated by the Authority or special airports designated by the AOC holder; and
 - (b) in any of the following conditions—
 - (i) the prevailing visibility value in the latest weather report for the airport is at or below 1200 m;
 - (ii) the Runway Visual Range (RVR) for the runway to be used is at or below 4,000 ft;
 - (iii) the runway to be used has water, snow, slush or similar conditions that may adversely affect aircraft performance;
 - (iv) the braking action on the runway to be used is reported to be less than “good”;
 - (v) the crosswind component for the runway to be used is in excess of 15 knots;
 - (vi) wind shear is reported in the vicinity of the airport; or
 - (vii) any other condition in which the pilot in command determines to be prudent to exercise the PIC's prerogative.
- (2) No person shall conduct operations under this Part unless, for that type of aircraft, either the pilot in command or the co-pilot has at least 75 hours of line operating flight time, either as pilot in command or co-pilot.
- (3) The Authority may, upon application by the AOC holder, authorize exemptions from the requirements of this Part by an appropriate amendment to the operations specifications in any of the following circumstances—
- (a) a newly certificated AOC holder does not employ any pilots who meet the minimum requirements of this Part;
 - (b) an existing AOC holder adds to its fleet an aircraft type not before proven for use in its operations; or
 - (c) an existing certificate holder establishes a new domicile to which it assigns pilots who will be required to become qualified on the aircraft operated from that domicile.

Recent experience — cruise relief pilot

111 (1) No operator shall assign a pilot to act in the capacity of cruise relief pilot in a type or variant of a type of aeroplane unless, within the preceding 90 days that pilot has either—

- (a) operated as a pilot-in-command, co-pilot or cruise relief pilot on the same type of aeroplane; or
- (b) carried out flying skill refresher training including normal, abnormal and emergency procedures specific to cruise flight on the same type of aeroplane or in a flight simulator approved for the purpose, and has practiced approach

and landing procedures, where the approach and landing procedure practice may be performed as the pilot who is not flying the aeroplane.

(2) When a cruise relief pilot is flying 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 decide under which conditions the requirements of this section for each variant or each type of aeroplane can be combined.

Pilot-in-command area, route and aerodrome qualification

112 (1) No operator shall utilise a pilot as pilot-in-command of an aeroplane on a route or route segment for which that pilot is not currently qualified until such pilot has complied with subsections (2) and (3).

(2) Each pilot referred to in subsection (1) shall demonstrate to the operator an adequate knowledge of—

(a) the route to be flown, and the aerodromes which are to be used and this shall include knowledge of—

(i) the terrain and minimum safe altitudes;

(ii) the seasonal meteorological conditions;

(iii) the meteorological, communication and air traffic facilities, services and procedures;

(iv) the search and rescue procedures; and

(v) the navigational facilities and procedures, including any long-range navigation procedures, associated with the route along which the flight is to take place; and

(b) 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 and the portion of the demonstration relating to arrival, departure, holding and instrument approach procedures may be accomplished in an approved training device which is adequate for this purpose.

(3) A pilot-in-command shall have made an actual approach into each aerodrome of landing on the route, accompanied by a pilot who is qualified for the aerodrome, as a member of the flight crew or as an observer on the flight deck, unless—

(a) the approach to the aerodrome is not over difficult terrain and the instrument approach procedures and aids available are similar to those with which the pilot is familiar, and a margin to be approved by the Authority is added to the normal operating minima, or there is reasonable certainty that approach and landing can be made in visual meteorological conditions; or

(b) the descent from the initial approach altitude can be made by day in visual meteorological conditions; or

(c) the operator qualifies the pilot-in-command to land at the aerodrome concerned by means of an adequate pictorial presentation; or

(d) the aerodrome concerned is adjacent to another aerodrome at which the pilot-in-command is currently qualified to land.

(4) An 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) An operator shall not continue to utilise a pilot as a pilot-in-command on a route or within an area specified by the operator and approved by the Authority unless, within the preceding 12 months, that pilot has made at least one trip as a pilot member of the flight crew, or as a check pilot, or as an observer in the flight crew compartment—

(a) within that specified area; and

(b) where appropriate, on any route where procedures associated with that route or with any aerodromes intended to be used for take-off or landing require the application of special skills or knowledge.

(6) In the event that more than 12 months elapse in which a pilot-in-command has not made such a trip on a route in close proximity and over similar terrain, within such a specified area, route or aerodrome, and has not practiced such procedures in a training device which is adequate for this purpose, prior to again serving as a pilot-in-command within that area or on that route, that pilot shall re-qualify in accordance with this Part.

Pilot proficiency checks

113 (1) An 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 aeroplane.

(2) Where the operation may be conducted under instrument flight rules, 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 shall be performed twice within any period of one 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.

Single pilot operations under the instrument flight rules (IFR) or at night

114 (1) An operator shall comply with the experience, recency and training requirements applicable to single pilot operations intended to be carried out under the IFR or at night as specified in this Part.

(2) The pilot-in-command shall—

- (a) for operations under the IFR or at night, have accumulated at least 50 hours flight time on the class of aeroplane, of which at least 10 hours shall be as pilot-in-command;
- (b) for operations under the IFR, have accumulated at least 25 hours flight time under the IFR on the class of aeroplane, which may form part of the 50 hours flight time in paragraph (a);
- (c) for operations at night, have accumulated at least 15 hours flight time at night, which may form part of the 50 hours flight time in paragraph (a);
- (d) for operations under the IFR, have acquired recent experience as a pilot engaged in a single pilot operation under the IFR of—
 - (iii) at least 5 IFR flights, including 3 instrument approaches carried out during the preceding 90 days on the class of aeroplane in the single pilot role; or
 - (iv) an IFR instrument approach check carried out on such an aeroplane during the preceding 90 days;
- (e) for operations at night, have made at least 3 take-offs and landings at night on the class of aeroplane in the single pilot role in the preceding 90 days; and
- (f) have successfully completed training programmes that include, in addition to the requirements of section 127, passenger briefing with respect to emergency evacuation, autopilot management, and the use of simplified in-flight documentation.

(3) The initial and recurrent flight training and proficiency checks indicated in sections 127 and 135 shall be performed by the pilot-in-command in the single pilot role on the class of aeroplane in an environment representative of the operation.

Flight crew equipment

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

Pilot authorisation in lieu of a type rating

116 (1) The Authority may authorise a pilot without a type rating to operate an aircraft requiring a type rating for a period not exceeding 60 days, provided that—

- (a) the applicant has demonstrated to the satisfaction of the Authority that an equivalent level of safety can be achieved through the operating limitations on the authorisation;
- (b) the applicant shows that compliance with this Part is impracticable for the flight or series of flights;
- (c) the operations—
 - (i) involve only a ferry flight, training to qualify on type or test flight;
 - (ii) are within Zimbabwe, unless by previous agreement with the Authority, the aircraft is flown to an adjacent Contracting State for maintenance;
 - (iii) are not for compensation or hire unless the compensation or hire involves payment for the use of the aircraft for training; and
 - (iv) involve only the carriage of flight crew members considered essential for the flight.

Licences required

117 (1) No person shall act as pilot-in-command or in any other capacity as a required flight crew member of an aircraft—

- (a) registered in Zimbabwe, unless that person carries in his personal possession the appropriate and valid licence for that flight crew position for that type of aircraft; or
- (b) of foreign registry, unless that person carries in his personal possession a valid licence for that type of aircraft issued to them by the State of registry.

(2) The flight crew for international and domestic operations shall hold a valid radiotelephony operator licence or endorsement issued or rendered valid by the State of Registry, authorising operation of the type of radio transmitting equipment to be used.

Pilot Qualifications

118 (1) No person shall operate an aircraft in commercial air transport unless that person is qualified for the specific operation and in the specific type of aircraft used.

(2) An operator or owner of the aircraft shall ensure that flight crew engaged in civil aviation operations speak and understand the English Language.

Fitness of crew members

119 (1) No person shall act as a crew member at any time when that person is aware of any decrease in the medical fitness which might render him unable to safely and properly execute the duties of a crew member.

(2) An operator and the pilot in command shall be responsible for ensuring that a flight is not—

- (a) commenced if any crew member is incapacitated or unable to perform duties by any cause such as injury, sickness, fatigue, the effects of alcohol or drugs; or
- (b) continued beyond the nearest suitable aerodrome where a flight crew member's capacity to perform functions is significantly reduced by impairment of faculties from causes such as fatigue, sickness or lack of oxygen.

Special authorisation required for Category II or III operations

120 (1) No person shall act as a pilot of an aircraft in a Category II or III operations unless—

- (a) in the case of a pilot-in-command, the person holds a current Category II or III pilot authorisation for that aircraft type; or
- (b) in the case of a co-pilot, the person is authorised by the State of Registry to act in that capacity in that aircraft in Category II or III operations.

(2) An authorisation is not required for individual pilots of an AOC holder operations specifications approved for Category II or III operations.

Recording of flight time

121 (1) A pilot shall record and keep details of all flights he or she has flown in a logbook format acceptable to the Authority.

(2) An AOC holder—

- (a) may record details of flights flown by a pilot in an acceptable computerised format maintained by the AOC holder; and
- (b) shall make the records of all flights operated by the pilot, including differences and familiarisation training, available on request to the pilot concerned.

(3) The record referred to in subsection (1) and (2) shall contain the following information—

- (a) name and address of the holder;
- (b) for each flight:
 - (i) name of the PIC;
 - (ii) date of flight;
 - (iii) place and time of departure and arrival, times to be UTC and block to block;
 - (iv) type, aircraft make, model and variant, aircraft nationality and registration marks of aircraft;
 - (v) single engine or multi-engine;
 - (vi) total time of flight; and
 - (vii) accumulated total time of flight;

(c) for each synthetic flight trainer or flight and navigation procedures trainers session:

- (i) type and qualification number of training device;
 - (ii) synthetic training device instruction;
 - (ii) date;
 - (iv) total time of session; and accumulated total time.
- (d) pilot function—
- (i) the PIC;
 - (ii) the co-pilot;
 - (iii) dual;
 - (iv) authorised instructor or authorised examiner; and
 - (v) remarks column to give details of specific functions such as student PIC time,
 - (vi) PIC under supervision time, PIC instrument flight time.
- (e) operational conditions—
- (i) night; or
 - (ii) instrument flight rules.
- (4) Logging of time—
- (a) PIC flight time—
- (i) the holder of a licence may log as PIC time all of the flight time during which he or she is the PIC;
 - (ii) the applicant for or the holder of a pilot licence may log as PIC time all solo flight time and flight time as student PIC provided that such student PIC time is countersigned by the instructor;
 - (iii) the holder of an instructor rating may log as PIC all flight time during which he acts as an instructor in an aeroplane;
 - (iv) the holder of an examiner's authorisation may log as PIC all flight time during which he or she occupies a pilot's seat and acts as an examiner in an aeroplane;
 - (v) a co-pilot acting as PIC under the supervision of the PIC on an aeroplane on which more than one pilot is required under the certificate of airworthiness of the aeroplane or by this Part may log as PIC under supervision flight time, provided such PIC time under supervision is countersigned by the PIC; or
 - (vi) where the holder of a licence carries out a number of flights upon the same day returning on each occasion to the same place of departure and the interval between successive flights does not exceed thirty minutes, such series of flights are to be recorded as a single entry.
- (b) co-pilot flight time- the holder of pilot licence occupying a pilot seat as co-pilot may log all flight time as co-pilot flight time on an aeroplane on which more than one pilot is required under the certificate of airworthiness of the aeroplane;
- (c) cruise relief co-pilot flight time- a cruise relief co-pilot may log all flight time as co-pilot when occupying a pilot's seat;
- (d) instruction time- a summary of all time logged by an applicant for a licence or rating as flight instruction, instrument flight instruction, instrument ground time, shall be certified by the appropriately rated or authorised instructor from whom it was received; and
- (e) PIC under supervision- a co-pilot may log as PIC under supervision flight time flown as PIC under supervision, when all of the duties and functions of PIC on that flight were carried out, such that the intervention of the PIC in the interest of safety was not required, provided that the method of supervision is acceptable to the Authority.
- (5) Presentation of flight time record—
- (a) a holder of a licence or a student pilot shall without undue delay present his flight time record for inspection upon request by an authorised person; and
- (b) a student pilot shall carry his flight time record logbook with him on all solo cross-country flights as evidence of the required instructor authorisation.

Completion of the technical logbook

122 A pilot-in-command shall ensure that all portions of the technical logbook required under Civil Aviation (Air Operator Certification and Administration) Regulations, published in statutory instrument 87 of 2018, are completed at the appropriate points before, during and after flight operations.

Reporting mechanical irregularities

123 (1) A pilot-in-command shall ensure that all mechanical irregularities occurring during flight time are—

- (a) reported to the operator at the termination of the flight;
- (b) entered in the aircraft logbook and dealt with in accordance with the Minimum Equipment List or other approved or prescribed procedure;
- (c) for commercial air transport operations, entered in the technical log of the aircraft at the end of that flight time.

Reporting of facility and navigation aid inadequacies

124 (1) An operator shall report, without delay, any inadequacy or irregularity of a facility or navigational aid observed in the course of operations to the person responsible for that facility or navigational aid.

(2) Subject to their published conditions of use, aerodromes and their facilities shall be kept continuously available for flight operations during their published hours of operations, irrespective of weather conditions.

Pilot privileges and limitations

125 A pilot shall not conduct flight operations unless the operations are within the privileges and limitations of each licence he or she holds as specified in the Civil Aviation (Personnel Licensing) Regulations.

Crew resource management (CRM) Training

126 (1) No AOC holder shall use a person as a crew member or flight dispatcher unless that person has completed the initial crew resource management curriculum approved by the Authority.

(2) An AOC holder shall ensure that all crew members have crew resource management training as part of their initial and recurrent training requirements.

(3) A crew resource management training program shall include—

- (a) an initial indoctrination or awareness segment;
- (b) a method to provide recurrent practice and feedback; and
- (c) a method of providing continuing reinforcement.

(4) Curriculum topics to be contained in an initial crew resource management training course include—

- (a) communications processes and decision behaviour;
- (b) internal and external influences on interpersonal communications;
- (c) barriers to communication;
- (d) listening skills;
- (e) decision making skills;
- (f) effective briefings;
- (g) developing open communications;
- (h) inquiry, advocacy, and assertion training;
- (i) crew self-critique;
- (j) conflict resolution;
- (k) team building and maintenance;
- (l) leadership and fellowship training;
- (m) interpersonal relationships;
- (n) workload management;
- (o) situational awareness;
- (p) how to prepare, plan and monitor task completions;
- (q) workload distribution;
- (r) distraction avoidance;
- (s) individual factors; and
- (t) stress reduction.

Human Factors (HF) Training

127 (1) No AOC holder shall use a person as a crew member or flight dispatcher unless that person has completed the initial HF curriculum approved by the Authority.

(2) An AOC holder shall ensure that all crew members have Human Factors training as part of their initial and recurrent training requirements.

- (3) A Human Factors training program shall include—
- (a) an initial or induction training;
 - (b) a recurrent training; and
 - (c) a requalification
- (4) Curriculum topics to be contained in an initial Human Factors training course include—
- (a) Elements of Human Factors;
 - (b) Clinical Psychology;
 - (c) Experimental Psychology;
 - (d) Anthropometrics;
 - (e) Computer Science;
 - (f) Cognitive Science;
 - (g) Medical Science;
 - (h) Organisational Psychology; and
 - (i) Educational Psychology;

Initial emergency equipment drills

128 (1) No AOC holder shall use a person as a crew member unless that person has completed the appropriate initial emergency equipment curriculum and drills for the crew member position approved by the Authority for the emergency equipment available on the aircraft to be operated.

(2) A crew member shall complete emergency training during the specified training periods, using the items of installed emergency equipment for each type of aircraft in which that crew member is to serve.

(3) During initial training, a crew member shall perform the following one time emergency drills—

- (a) protective breathing equipment or fire-fighting drill—
 - (i) locate the source of fire or smoke for an actual or simulated fire;
 - (ii) implement procedures for effective crew co-ordination and communication, including notification of flight crew members about the fire situation;
 - (iii) don and activate installed protective breathing equipment or approved protective breathing equipment simulation device;
 - (iv) manoeuvre in limited space with reduced visibility;
 - (v) effectively use the aircraft's communication system;
 - (vi) identify the class of fire;
 - (vii) select the appropriate extinguisher;
 - (viii) properly remove the extinguisher from the securing device;
 - (ix) prepare, operate and discharge the extinguisher properly; and
 - (x) utilise the correct fire-fighting techniques for type of fire.
- (b) emergency evacuation drill—
 - (i) recognise and evaluate an emergency;
 - (ii) assume the appropriate protective position;
 - (iii) command passengers to assume protective position;
 - (iv) implement crew co-ordination procedures;
 - (v) ensure activation of emergency lights;
 - (vi) assess aircraft condition;
 - (vii) initiate evacuation, dependent on signal or decision;
 - (viii) command passengers to release their seatbelts and evacuate;
 - (ix) assess exit and redirect passengers, where necessary, to open exits, including deploying slides and commanding helpers to assist;
 - (x) command the passengers to evacuate at exit and run away from the aircraft;
 - (xi) assist special need passengers, such as handicapped, elderly, and persons in a state of panic; and
 - (xii) actually exit the aircraft or training device using at least one of the installed emergency evacuation slides.

(4) In the case of an emergency evacuation drill, the crew member may either observe the aircraft exits being opened in the emergency mode and the associated exit slider or aft pack being deployed and inflated, or perform the tasks resulting in the accomplishment of these actions.

(5) An aircraft crew member shall accomplish additional emergency drills during initial and recurrent training, including performing the following emergency drills—

- (a) emergency exit drill—
 - (i) correctly pre-flight each type of emergency exit and evacuation slide or slide raft, if part of cabin crew member's assigned duties;
 - (ii) disarm and open each type of door exit in normal mode;
 - (iii) close each type of door exit in normal mode;
 - (iv) arm each type of door exit in emergency mode;
 - (v) open each type of door exit in emergency mode;
 - (vi) use the manual slide inflation system to accomplish or ensure slide or slide raft inflation;
 - (vii) open each type of window exit; and
 - (viii) remove the escape rope and position it for use.
- (b) hand fire extinguisher drill fighting an actual or a simulated fire is not necessary during this drill—
 - (i) pre-flight each type of hand fire extinguisher;
 - (ii) locate the source of fire or smoke and identify class of fire;
 - (iii) select the appropriate extinguisher and remove from securing device;
 - (iv) prepare the extinguisher for use;
 - (v) actually operate and discharge each type of installed hand fire extinguisher;
 - (vi) utilise correct fire-fighting techniques for the type of fire; and
 - (vii) implement procedures for effective crew coordination and communication, including notification of crew members about the type of fire situation.
- (c) emergency oxygen system drill—
 - (i) actually operate portable oxygen bottles, including masks and tubing;
 - (ii) verbally demonstrate operation of chemical oxygen generators;
 - (iii) prepare for use and properly operate an oxygen device, including donning and activation;
 - (iv) administer oxygen to self, passengers, and to those persons with special oxygen needs;
 - (v) utilise proper procedures for effective crew coordination and communication;
 - (vi) activate protective breathing equipment;
 - (vii) manually open each type of oxygen mask compartment and deploy oxygen masks;
 - (viii) identify compartments with extra oxygen masks;
 - (ix) implement immediate action decompression procedures; and
 - (x) reset the oxygen system, where applicable.
- (c) flotation device drill—
 - (i) don and inflate life vests;
 - (ii) remove and use flotation seat cushions; and
 - (iii) demonstrate swimming techniques using a seat cushion.
- (d) ditching drill, where applicable, during which ditching drill trainees shall perform the "prior to impact" and "after impact" procedures for a ditching, as appropriate to the specific operator's type of operation—
 - (i) implement crew coordination procedures, including a briefing with the captain to obtain pertinent ditching information and briefing cabin crew members;
 - (ii) coordinate time-frame for cabin and passenger preparation;
 - (iii) adequately brief passengers on ditching procedures;
 - (iv) ensure the cabin is prepared, including the securing of carry-on baggage, lavatories, and galleys;
 - (v) demonstrate how to properly deploy and inflate slide rafts;
 - (vi) remove, position and attach slide rafts to aircraft;
 - (vii) inflate the rafts;
 - (viii) use escape ropes at over wing exits;
 - (ix) command any helpers to assist;
 - (x) use slides and seat cushions as flotation devices;
 - (xi) remove appropriate emergency equipment from the aircraft;
 - (xii) board rafts properly;

- (xiii) initiate raft management procedures, such as disconnecting rafts from aircraft, applying immediate first aid, rescuing persons in water, salvaging floating rations and equipment, deploying sea anchor, tying rafts together, and activating or ensuring operation of emergency locator transmitter;
 - (xiv) initiate basic survival procedures, such as removing and utilising survival kit items, repairing and maintaining raft, ensuring protection from exposure, erecting canopy, communicating location, providing continued first aid, and providing sustenance;
 - (xv) use heaving line to rescue persons in the water;
 - (xvi) tie slide rafts or rafts together;
 - (xvii) use life line on edge of slide raft or raft as a handhold; and
 - (xviii) secure survival kit items.
- (6) An aircraft crew member shall accomplish additional emergency drill requirements during initial and recurrent training including observing the following emergency drills:
- (a) life raft removal and inflation drill, if applicable—
 - (i) removal of a life raft from the aircraft or training device; and
 - (ii) inflation of a life raft.
 - (b) slide raft transfer drill—
 - (i) transfer each type of slide raft pack from an unusable door to a usable door;
 - (ii) disconnect the slide raft at an unusable door;
 - (iii) redirect passengers to the usable slide raft; and
 - (iv) install and deploy the slide raft at a usable door.
 - (c) slide and slide raft deployment, inflation, and detachment—
 - (i) engage slide girt bar in floor brackets;
 - (ii) inflate slides with and without quick-release handle, manually and automatically;
 - (iii) disconnect slide from aircraft for use as a flotation device;
 - (iv) arm slide rafts for automatic inflation; and
 - (v) disconnect slide raft from the aircraft.
 - (d) emergency evacuation slide drill—
 - (i) open armed exit with slide or slide raft deployment and inflation; and
 - (ii) egress from aircraft via the evacuation slide and run away to a safe distance.

Initial aircraft ground training: flight crew

129 (1) No AOC holder shall use a person as a flight crew member unless that person has completed the initial ground training approved by the Authority for the aircraft type.

(2) Initial aircraft ground training for flight crew members shall include the pertinent portions of the operations manuals relating to aircraft-specific performance, mass and balance, operational policies, systems, limitations, normal, abnormal and emergency procedures on the aircraft type to be used.

(3) An AOC holder shall have an initial aircraft ground training curriculum for the flight crew applicable to the type of operations conducted and aircraft flown.

(4) Instructions shall include at least the following general subjects—

- (a) AOC holder's dispatch, flight release, or operational control or flight following procedures;
- (b) principles and methods for determining mass and balance, and runway limitations for take-off;
- (c) adverse weather recognition and avoidance, and flight procedures which shall be followed when operating in the following conditions—
 - (i) icing;
 - (ii) fog;
 - (iii) Turbulence;
 - (iv) heavy precipitation;
 - (v) thunderstorms;
 - (vi) low-level wind shear and microburst; and
 - (vii) low visibility.
- (d) normal and emergency communications procedures and navigation equipment including the AOC holder's communications procedures and air traffic control clearance requirements;

- (e) navigation procedures used in area departure, en route, area arrival, approach and landing phases;
 - (f) approved crew resource management or CRM training;
 - (g) air traffic control systems, procedures, and phraseology;
 - (h) aircraft performance characteristics during all flight regimes, including—
 - (i) the use of charts, tables, tabulated data and other related manual information;
 - (ii) normal, abnormal, and emergency performance problems;
 - (iii) meteorological and weight limiting performance factors, such as temperature, pressure, contaminated runways, precipitation, climb and runway limits;
 - (iv) inoperative equipment performance limiting factors, such as minimum equipment list or configuration deviation list, inoperative antiskid; and
 - (v) special operational conditions, such as unpaved runways, high altitude aerodromes and drift down requirements.
- (5) An AOC holder shall have an initial aircraft ground training curriculum for the flight crew applicable to the type of operations conducted and aircraft flown, including at least the following aircraft systems—
- (a) aircraft—
 - (i) aircraft dimensions, turning radius, panel layouts, cockpit and cabin configurations; and
 - (ii) other major systems and components or appliances of the aircraft.
 - (b) power plants—
 - (i) basic engine description;
 - (ii) engine thrust ratings; and
 - (iii) engine components such as accessory drives, ignition, oil, fuel control, hydraulic, and bleed air features.
 - (c) electrical—
 - (i) sources of aircraft electrical power, such as engine driven generators, auxiliary power unit or APU generator, and external power;
 - (ii) electrical buses;
 - (iii) circuit breakers;
 - (iv) aircraft battery; and
 - (v) standby power systems.
 - (d) hydraulic—
 - (i) hydraulic reservoirs, pumps, accumulators, filters, check valves, interconnects and actuators; and
 - (ii) other hydraulically operated components.
 - (e) fuel—
 - (i) fuel tanks, including location and quantities;
 - (ii) engine driven pumps;
 - (iii) boost pumps;
 - (iv) system valves and cross feeds;
 - (v) quantity indicators;
 - (vi) quantity indicators; and
 - (vii) provisions for fuel jettisoning.
 - (f) pneumatic—
 - (i) bleed air sources, auxiliary power unit or external ground air; and
 - (ii) means of routing, venting and controlling bleed air via valves, ducts, chambers, and temperature and pressure limiting devices.
 - (g) air conditioning and pressurization—
 - (i) heaters, air conditioning packs, fans, and other environmental control devices;
 - (ii) pressurisation system components such as outflow and negative pressure relief valves; and
 - (iii) automatic, standby, manual pressurisation controls and annunciations.
 - (h) flight controls—
 - (i) primary controls, including yaw, pitch, and roll devices;
 - (ii) secondary controls, including leading or trailing edge devices: flaps, trim, and damping mechanisms;
 - (iii) means of actuation, whether direct or indirect or fly by wire; and
 - (iv) redundancy devices.
 - (i) landing gear—

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- (i) landing gear extension and retraction mechanism including the operating sequence of struts, doors, and locking devices, and brake and antiskid systems, where applicable;
 - (ii) steering, including nose or body steering gear;
 - (iii) bogie arrangements;
 - (iv) air or ground sensor relays; and
 - (v) visual down lock indicators.
- (j) ice and rain protection—
- (i) rain removal systems;
 - (ii) anti-icing or de-icing systems affecting flight controls, engines; and
 - (iii) pitot static probes, fluid outlets, cockpit windows, and aircraft structures.
- (k) equipment and furnishings—
- (i) exits;
 - (ii) galleys;
 - (iii) water and waste systems;
 - (iv) lavatories;
 - (v) cargo areas;
 - (vi) crew member and passenger seats;
 - (vii) bulkheads;
 - (viii) seating and cargo configurations; and
 - (ix) non-emergency equipment and furnishings.
- (l) navigation equipment—
- (i) flight directors;
 - (ii) horizontal situation indicator;
 - (iii) radio magnetic indicator;
 - (iv) navigation receivers such as global positioning system, automatic direction finder (ADF), very high frequency omnidirectional radio range (VOR), OMEGA, long range navigation (LORAN-C), area navigation (RNAV), marker beacon, distance measuring equipment (DME);
 - (v) inertial systems such as inertia navigation system (INS) and inertia reference (IRS);
 - (vi) functional displays;
 - (vii) fault indications and comparator systems;
 - (viii) aircraft transponders;
 - (ix) radio altimeters;
 - (x) weather radar; and
 - (xi) cathode ray tube or computer-generated displays of aircraft position and navigation information.
- (m) auto flight system—
- (i) autopilot;
 - (ii) auto throttles;
 - (iii) flight director and navigation systems;
 - (iv) automatic approach tracking;
 - (v) auto land; and
 - (vi) automatic fuel and performance management systems.
- (n) flight instruments—
- (i) panel arrangement;
 - (ii) flight instruments, including attitude indicator, directional gyro, magnetic compass, airspeed indicator, vertical speed indicator, altimeters, standby instruments; and
 - (iii) instrument power sources, and instrument sensory sources, such as pitot static pressure.
- (o) display systems—
- (i) weather radar; and
 - (ii) other Cathode ray tube (CRT) displays, such as checklist, vertical navigation or longitudinal navigation displays.
- (p) communication equipment—
- (i) very high frequency (VHF) or high frequency (HF);

- (ii) audio panels;
 - (iii) in flight interphone and passenger address systems;
 - (iv) voice recorder; and
 - (v) aircraft communication addressing and reporting system (ACARS).
- (q) warning systems—
- (i) aural, visual, and tactile warning systems, including the character and degree of urgency related to each signal; and
 - (ii) warning and caution annunciator systems, including ground proximity and take-off warning systems.
- (r) fire protection—
- (i) fire and overheat sensors, loops, modules, or other means of providing visual or aural indications of fire or overheat detection;
 - (ii) procedures for the use of fire handles, automatic extinguishing systems and extinguishing agents; and
 - (iii) power sources necessary to provide protection for fire and overheat conditions in engines, auxiliary power unit, cargo bay or wheel well, cockpit, cabin and lavatories.
- (s) oxygen—
- (i) passenger, crew, and portable oxygen supply systems;
 - (ii) sources of oxygen such as gaseous or solid;
 - (iii) flow and distribution networks;
 - (iv) automatic deployment systems;
 - (v) regulators, pressure levels and gauges; and
 - (vi) servicing requirements.
- (t) lighting—
- (i) cockpit, cabin, and external lighting systems;
 - (ii) power sources;
 - (iii) switch positions; and
 - (iv) spare light bulb locations;
- (u) emergency equipment—
- (i) fire and oxygen bottles;
 - (ii) first aid kits;
 - (iii) life rafts and life preservers;
 - (iv) crash axes;
 - (v) emergency exits and lights;
 - (vi) slides and slide rafts;
 - (vii) escape straps or handles; and
 - (viii) hatches, ladders and movable stairs.
- (v) auxiliary power unit—
- (i) electric and bleed air capabilities;
 - (ii) interfaces with electrical and pneumatic systems;
 - (iii) inlet doors and exhaust ducts; and
 - (iv) fuel supply.
- (6) An AOC holder shall have an initial aircraft ground training curriculum for the flight crew applicable to the type of operations conducted and aircraft flown, including at least the following aircraft systems integration items—
- (a) use of checklist—
- (i) safety chocks;
 - (ii) cockpit preparation (switch position and checklist flows);
 - (iii) checklist callouts and responses; and
 - (iv) checklist sequence.
- (b) flight planning—
- (i) performance limitations, including meteorological, weight, minimum equipment list and configuration deviation list items;
 - (ii) required fuel loads; and
 - (iii) weather planning, lower than standard take-off minimums or alternate requirements.

- (c) navigation systems—
 - (i) pre-flight and operation of applicable receivers;
 - (ii) onboard navigation systems; and
 - (iii) flight plan information input and retrieval.
 - (d) auto flight— autopilot, auto thrust, and flight director systems, including the appropriate procedures, normal and abnormal indications, and enunciators;
 - (e) cockpit familiarisation—
 - (i) activation of aircraft system controls and switches to include normal, abnormal and emergency switches; and
 - (ii) control positions and relevant enunciators, lights, or other caution and warning systems.
- (7) An AOC holder may have separate initial aircraft ground training curricula of varying lengths and subject emphasis which recognise the experience levels of a flight crew members approved by the Authority.

Initial flight Training- flight crew member

130 (1) No AOC holder shall use a person as a flight crew member unless that person has completed the initial flight training approved by the Authority for the aircraft type.

(2) Initial flight training of a flight crew member shall focus on the manoeuvring and safe operation of the aircraft in accordance with AOC holder's normal, abnormal and emergency procedures.

(3) An AOC holder may have separate initial flight training curriculum which recognise the experience levels of flight crew members approved by the Authority.

(4) Flight training may be conducted in an appropriate aircraft or adequate synthetic flight trainer—

- (a) having landing capability; and
- (b) qualified for training or checking on circling manoeuvres.

(5) An AOC holder shall ensure that pilot initial flight training includes at least the following—

- (a) preparation—
 - (i) visual inspection, and use authorised of pictorial display for aircraft with a flight engineer;
 - (ii) pre-taxi procedures; and
 - (iii) performance limitations
- (b) surface operation—
 - (i) pushback;
 - (ii) power back taxi, where applicable to type of operation to be conducted;
 - (iii) starting;
 - (iv) taxi; and
 - (v) pre-take-off checks.
- (c) take-off—
 - (i) normal;
 - (ii) crosswind;
 - (iii) rejected;
 - (iv) power failure after v₁; and
 - (v) lower than standard minimum, where applicable to type of operation to be conducted.
- (d) climb—
 - (i) normal; and
 - (ii) one-engine inoperative during climb to en route altitude.
 - (iii) en-route;
 - (iv) steep turns;
 - (v) approaches to stalls, take-off, en route, and landing configurations;
 - (vi) in flight power plant shutdown;
 - (vii) in-flight power plant restart;
 - (viii) high speed handling characteristics.
- (e) descent—
 - (i) normal; and
 - (ii) maximum rate.
- (f) approaches—

- (i) visual flight rules procedures;
 - (ii) visual approach with 50% loss of power on one-side 2 engines inoperative on 3-engine aircraft for pilot-in-command only;
 - (iii) visual approach with slat or flap malfunction;
 - (iv) instrument flight rules precision approaches such as instrument landing system normal and instrument landing system with one-engine inoperative;
 - (v) IFR non-precision approaches non-directional radio beacon or NDB normal and VHF omni-directional radio range beacon or VOR normal;
 - (vi) non-precision approach with one engine inoperative Localizer back course procedures, SDF or localizer type directional aid, a global positioning system, TACAN and circling approach procedures;
 - (vii) missed approach from precision approach;
 - (viii) missed approach from non-precision approach; and
 - (ix) missed approach with engine failure.
- (g) landings—
- (i) normal with a pitch mis-trim small aircraft only;
 - (ii) normal from precision instrument approach;
 - (iii) normal from precision instrument approach with most critical engine inoperative;
 - (iv) normal with 50% loss of power on one side 2 engines inoperative on 3-engine aircraft;
 - (v) normal with flap or slat malfunction;
 - (vi) rejected landings;
 - (vii) crosswind;
 - (viii) manual reversion or degraded control augmentation;
 - (ix) short or soft field small aircraft, land amphibian aircraft only; and
 - (x) glassy or rough water, seaplanes only.
- (h) after landing—
- (i) parking;
 - (ii) emergency evacuation; and
 - (iii) docking, mooring, and ramping, seaplanes only.
- (i) other flight procedures during any airborne phase—
- (i) holding;
 - (ii) ice accumulation on airframe;
 - (iii) air hazard avoidance; and
 - (iv) wind shear or microburst.
 - (v) normal, abnormal and alternate systems procedures during any phase:
 - (vi) pneumatic or pressurisation;
 - (vii) air conditioning;
 - (viii) fuel and oil;
 - (ix) electrical;
 - (x) hydraulic;
 - (xi) flight controls;
 - (xii) anti-icing and de-icing systems;
 - (xiii) autopilot;
 - (xiv) flight management guidance systems and automatic or other approach and landing aids;
 - (xv) stall warning devices, stall avoidance devices, and stability augmentation systems;
 - (xvi) airborne weather radar;
 - (xvii) flight instrument system malfunction;
 - (xviii) communications equipment; and
 - (xix) navigation systems.
- (j) emergency systems procedures during any phase—
- (i) aircraft fires;
 - (ii) smoke control;
 - (iii) power plant malfunctions;

- (iv) fuel jettison;
 - (v) electrical, hydraulic, pneumatic systems;
 - (vi) flight control system malfunction; and
 - (vii) landing gear and flap system malfunction.
- (k) procedures for upset prevention and recovery training in a flight simulation training device as contained in the Procedures for Air Navigation Services.”
- (6) An AOC holder shall ensure that flight engineer training includes at least the following—
- (a) training and practice in procedures related to the carrying out of flight engineer duties and functions, where this training and practice may be accomplished either in flight or, in a synthetic flight trainer;
 - (b) training in knowledge and skills related to visual and instrument flight procedures for the intended area of operation, human performance including threat and error management and in the transport of dangerous goods; and
 - (c) a proficiency check as specified in this Part.

Initial specialised operations training

131 (1) No AOC holder shall use a person as a flight crew member unless that person has completed the appropriate initial specialised operations training curriculum approved by the Authority.

(2) Specialised operations for which initial training curricula shall be developed include—

- (a) low minima operations, including low visibility take-offs and Category II and III operations;
- (b) extended range operations;
- (c) specialised navigation; and
- (d) pilot-in-command right seat qualification.

(3) An AOC holder shall provide initial specialised operations training to ensure that each pilot and flight dispatcher is qualified in the type of operation in which that person serves and in any specialised or new equipment, procedures, and techniques, such as—

- (a) class II navigation—
 - (i) knowledge of specialised navigation procedures, such as Required Navigation Performance (RNP), Minimum Navigation Performance System (MNPS) and Reduced Vertical Separation Minimum (RVSM); and
 - (ii) knowledge of specialised equipment, such as Inertia Navigation System (INS), Long Range Navigation (LORAN), OMEGA.
- (b) Category II and CAT III operations approaches—
 - (i) special equipment, procedures and practice;
 - (ii) a demonstration of competency;
- (c) lower than standard minimum take-offs—
 - (i) runway and lighting requirements;
 - (ii) rejected take-offs at or near V1 with a failure of the most critical engine;
 - (iii) taxi operations; and
 - (iv) procedures to prevent runway incursions under low visibility conditions.
- (d) extended range operations with two turbine engine aeroplanes.
- (e) airborne radar approaches; and
- (f) autopilot instead of co-pilot.

Aircraft differences training

132 (1) No AOC holder shall use a person as a crew member on an aircraft of a type for which a differences curriculum is included in the AOC holder’s approved training programme, unless that person has satisfactorily completed that curriculum, with respect to both the crew member position and the particular variant of that aircraft.

(2) An operator shall ensure that a crew member completes—

- (a) differences training which requires additional knowledge and training on an appropriate training device or the aircraft—
 - (i) when operating another variant of an aircraft of the same type or another type of the same class currently operated; or
 - (ii) when changing equipment procedures on types or variants currently operated.

- (b) familiarisation training which requires the acquisition of additional knowledge—
 - (i) when operating another aircraft of the same type; or
 - (ii) when changing equipment procedures on types of variants currently operated.
 - (c) the operator referred to in subsection (1) shall specify in the operations manual when such differences training or familiarization training is required.
- (3) An AOC holder shall provide aircraft differences training for flight dispatcher when the operator has aircraft variances within the same type of aircraft, which includes at least the following—
- (a) operations procedures—
 - (i) operations under adverse weather phenomena conditions, including clear air turbulence, wind shear, and thunderstorms;
 - (ii) mass and balance computations and load control procedures;
 - (iii) aircraft performance computations, to include take-off mass limitations based on departure runway, arrival runway, and en-route limitations, and also engine-out limitations;
 - (iv) flight planning procedures, to include route selection, flight time, and fuel requirements analysis;
 - (v) dispatch release preparation;
 - (vi) crew briefings;
 - (vii) flight monitoring procedures;
 - (viii) flight crew response to various emergency situations, including the assistance the aircraft flight dispatcher can provide in each situation;
 - (ix) minimum equipment list and configuration deviation list procedures;
 - (x) manual performance of required procedures in case of the loss of automated capabilities;
 - (xi) training in appropriate geographic areas;
 - (xii) air traffic control and instrument flight rules procedures, to include ground hold and central flow control procedures; and
 - (xiii) radiotelephony procedures.
 - (b) emergency procedures—
 - (i) actions taken to aid the flight crew; and
 - (ii) AOC holder and Authority notification.

Use of synthetic flight trainers

133 A synthetic flight trainer that is used for flight crew member qualification shall—

- (a) be specifically approved by the Authority for the—
 - (i) air operator certificate holder;
 - (ii) type aircraft, including type variations, for which the training or check is being conducted; and
 - (iii) particular manoeuvre, procedure, or flight crew member function involved.
- (b) maintain the performance, functional, and other characteristics that are required for approval;
- (c) be modified to conform with any modification to the aircraft being simulated that results in changes to performance, functional, or other characteristics required for approval;
- (d) be given a daily functional pre-flight check before use;
- (e) have a daily discrepancy logbook kept by the appropriate instructor or check pilot at the end of each training or check flight; and
- (f) for initial aircraft type training, be qualified for training and checking on the circling manoeuvre.

Aircraft and instrument proficiency checks

134 (1) No AOC holder shall use a person as a pilot flight crew member unless, since the beginning of the sixth calendar month before that service, that person has passed the proficiency check prescribed by the Authority in the make and model of aircraft on which their services are required.

(2) No AOC holder shall use a person as a flight crew member in instrument flight rules operations unless, from the beginning of the sixth calendar month before that service, that pilot has passed the instrument competency check prescribed by the Authority.

(3) A flight crew member may complete the requirements of subsections (1) and (2) of this regulation simultaneously in a make and model of the aircraft.

(4) The completion of an approved operator training programme for the particular aircraft type and the satisfactory completion of a PIC proficiency check, shall satisfy the requirement for an aircraft type rating practical test provided that the proficiency check—

- (a) includes all manoeuvres and procedures required for a type rating practical test; and
- (b) is conducted by an examiner.

(5) Aircraft and instrument proficiency checks for PIC and co-pilot shall include the following operations and procedures listed in Table 6.

(6) Examiners or check pilots may waive certain events on the proficiency check based on an assessment of the pilot's demonstrated level of performance.

(7) The oral and flight phases of a proficiency check should not be conducted simultaneously.

(8) When the examiner or check pilot determines that a pilot's performance is unsatisfactory, the examiner or check pilot may terminate the immediately.

(9) If the proficiency check must be terminated for mechanical or other reasons, and there are events which still need to be repeated, the examiner or check pilot shall issue a letter of discontinuance, valid for sixty days, listing the specific areas of operation that have been successfully completed.

(10) At least one of the two annual proficiency checks shall be conducted by an examiner.

(11) The other proficiency check may be conducted by a check pilot or the Authority.

Introduction of new equipment or procedures

135 A person shall not serve or an AOC holder shall not use any other person as a flight crew unless such person attends the AOC holder's approved training programme to both the crew member position and the particular variant of that aircraft.

Flight engineer proficiency checks

136 (1) No AOC holder shall use a person as a flight engineer on an aircraft unless within the preceding twelve calendar months he or she has—

- (a) had a proficiency check in accordance with the requirements prescribed by the Authority; or
- (b) 50 hours flight time for the AOC holder as flight engineer in the type aircraft.

(2) Examiners shall include during proficiency checks for flight engineers an oral or written examination of the normal, abnormal, and emergency procedures listed below—

(a) normal procedures—

- (i) interior pre-flight;
- (ii) panel set-up;
- (iii) fuel load;
- (iv) engine start procedures;
- (v) taxi and before take-off procedures;
- (vi) take-off and climb pressurization;
- (vii) cruise and fuel management;
- (viii) descent and approach;
- (ix) after landing and securing;
- (x) crew coordination;
- (xi) situational awareness;
- (xii) performance computations; and
- (xiii) anti-ice and de-ice measures.

(b) abnormal and emergency procedures—

- (i) troubleshooting;
- (ii) knowledge of checklist;
- (iii) crew coordination;
- (iv) minimum equipment list or MEL
- (v) configuration deviation list or CDL; and
- (vi) emergency or alternate operation of aircraft flight systems.

Supervised line flying- pilots

137 (1) A pilot initially qualifying as a PIC shall complete a minimum of ten flights performing the duties of a PIC under the supervision of an check pilot.

(2) A PIC transitioning to a new aircraft type shall complete a minimum of five flights performing the duties of a PIC under the supervision of an check pilot.

(3) A pilot qualifying for duties other than PIC shall complete a minimum of five flights performing those duties under the supervision of an check pilot.

(4) During the time that a qualifying PIC is acquiring operating experience, an authorised instructor who is also serving as the PIC shall occupy a co-pilot station.

(5) In the case of a transitioning PIC, the check pilot serving as PIC may occupy the observer's seat if the transitioning pilot has made at least two take-offs and landings in the type aircraft used, and has satisfactorily demonstrated to the authorised instructor that he is qualified to perform the duties of a PIC for that type of aircraft.

Supervised line flying- flight engineers

138 A flight engineer who has qualified on a new type rating on an aircraft shall perform the functions of a flight engineer for a minimum of five flights under the supervision of a flight instructor or qualified flight engineer approved by the air operator certificate holder and accepted by the Authority

Route and area checks: pilot qualification

139 (1) No AOC holder shall use a person as a pilot unless, within the preceding twelve months, that person has passed a route check in which the person satisfactorily performed his assigned duties in one of the types of aircraft he is to fly.

(2) No person shall perform PIC duties over a designated special operational area that requires a special navigation system or procedures or in EDTO operations unless his or her competency with the system and procedures has been demonstrated to the AOC holder within the past twelve months.

(3) A PIC of an aircraft shall demonstrate special operational competency by navigation over the route or area as PIC under the supervision of a check pilot on an annual basis by demonstrating a knowledge of—

- (a) the terrain and minimum safe altitudes;
- (b) the seasonal meteorological conditions;
- (c) the search and rescue procedures;
- (d) the navigational facilities and procedures, including any long-range navigation procedures, associated with the route along which the flight is to take place;
- (e) procedures applicable to flight paths over heavily populated areas of high air traffic density, obstructions, physical layout, lighting, approach aids and arrival, departure, holding and instrument approach procedures, and applicable operating minima; and
- (f) the meteorological, communication and air traffic facilities, services and procedures.

Low minimums authorization- PIC

140 Where a PIC has not completed—

- (a) fifteen flights performing PIC duties in an aircraft type, including five approaches to landing using Category I or II operations procedures, that PIC shall not plan for or initiate an instrument approach when the ceiling is less than 300 feet and the visibility is less than 2000 m; and
- (b) twenty flights performing PIC duties in an aircraft including five approaches and landing using Category III operations procedures, that PIC shall not plan for or initiate an approach when the ceiling is less than 100 feet or the visibility is less than 400 m runway visual range (RVR).

Designated Special aerodromes- PIC qualification

141 (1) The Authority may determine that certain aerodrome, due to items such as surrounding terrain obstructions, or complex approach or departure procedures are special airport qualifications and that certain areas or routes, or both require a special type of navigation qualification.

(2) No AOC holder shall use a person as PIC for operations at special airport qualifications aerodromes unless within the preceding twelve months the PIC—

- (a) has been qualified by the AOC holder through a pictorial means acceptable to the Authority for that aerodrome;
- or

- (b) the assigned co-pilot has made a take-off and landing at that aerodrome or while serving as a flight crew member for the AOC holder.

Designated special airport qualifications aerodrome limitations

- 142 (1) Designated special airport qualifications aerodrome limitations are not applicable if the operation occurs—
- (a) during daylight hours;
 - (b) when the visibility is at least 5 km; and
 - (c) when the ceiling at that aerodrome is at least 1,000 feet above the lowest initial approach altitude prescribed for an instrument approach procedure.

Recurrent training and checking- flight crew members

- 143 (1) An operator shall ensure that—
- (a) a flight crew member undergoes recurrent training listed in subsection (2) and checking in subsection (3) and that all such training and checking is relevant to the type or variant of aircraft on which the flight crew member operates; and
 - (b) a recurrent training and checking programme is established in the operations manual and approved by the Authority.
- (3) Recurrent training referred to in subsection (1) shall be conducted by the following personnel—
- (a) ground and refresher training: by suitably qualified personnel;
 - (b) aeroplane synthetic flight trainer training: by an authorised instructor or in the case of the synthetic flight trainer content schedule, a synthetic flight trainer authorised instructor provided that the authorised instructor or synthetic flight trainer authorised instructor satisfied the operator's experience and knowledge requirements sufficient to instruct on the items specified in the operations manual;
 - (c) emergency and safety equipment training: by suitably qualified personnel;
 - (d) crew resource management training: by suitably qualified personnel to integrate elements of crew resource management into all phases of recurrent training; and
 - (e) modular crew resource management training: by at least one Crew Resource Management (CRM) trainer acceptable to the Authority who may be assisted by experts in order to address specific areas.
- (4) The recurrent checking referred to in subsection (1) shall be conducted by the following personnel—
- (a) operator proficiency check: by a check pilot or flight engineer authorized by the AOC holder and accepted by the Authority, as appropriate, or, if the check is conducted in a synthetic flight trainer training device, by check pilot or authorised flight engineer as appropriate; and
 - (b) line checks: by a check pilot of the operator and acceptable to the Authority; and
 - (c) emergency and safety equipment checking by suitably qualified personnel acceptable to the Authority.
- (5) The period of validity of an operator proficiency check shall be—
- (a) six months in addition to the remainder of the month of issue; or
 - (b) if issued within the final three months of validity of a previous operator proficiency check, extended from the date of issue until six months from the expiry date of that previous operator proficiency check.
- (6) An operator shall ensure that each flight crew member undergoes a line check on the aircraft to demonstrate his competence in carrying out normal line operations described in the operations manual.
- (7) The period of validity of a line check referred to in subsection shall be—
- (a) twelve months, in addition to the remainder of the month of issue; or
 - (b) if issued within the final three months of validity of a previous line check, extended from the date of issue until twelve months from the expiry date of that previous check.
- (8) An operator shall ensure that each flight crew member undergoes training and checking on the location and use of emergency and safety equipment carried.
- (9) The period of validity of an emergency and safety equipment check referred to in subsection (7) shall be—
- (a) twelve months in addition to the remainder of the month of issue; or
 - (b) if issued within the final three months of validity of a previous emergency and safety check, extended from the date of issue until twelve months from the expiry date of the previous emergency and safety equipment check.
- (10) An operator shall ensure—
- (a) elements of CRM are integrated into all appropriate phases of the recurrent training; and

- (b) a flight crew member undergoes specific modular CRM training and all major topics of CRM training shall be covered over a period not exceeding three years.
- (11) An operator shall ensure that each flight crew member undergoes—
 - (a) ground and refresher training at least every twelve months, if the training is conducted within three months prior to the expiry of the twelve months period, the next ground and refresher training must be completed within twelve months of the original expiry date of the previous ground and refresher training; and
 - (b) aircraft training or synthetic flight trainer training at least every six months, if the training is conducted within three months prior to the expiry of the twelve months period, the next aircraft or synthetic flight trainer training must be completed within six months of the original expiry date of the previous aircraft or synthetic flight trainer training.

Check pilot training

144 (1) No AOC holder shall use a person as a check pilot in an aircraft or check pilot in a synthetic flight trainer in a training programme unless, with respect to the aircraft type involved, that person has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training, that are required to serve as pilot-in-command PIC.

- (2) An AOC holder shall ensure that initial ground training for check pilots includes—
 - (a) check pilot duties, functions, and responsibilities;
 - (b) applicable regulations and the AOC holder's policies and procedures;
 - (c) appropriate methods, procedures, and techniques for conducting the required checks;
 - (d) proper evaluation of student performance including the detection of:
 - (e) improper and insufficient training; and
 - (f) personal characteristics of an applicant that could adversely affect safety.
 - (g) appropriate corrective action in the case of unsatisfactory checks; and
 - (h) approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the aircraft.
- (3) Transition ground training for all check pilots shall include the approved methods, procedures, and limitations for performing the required normal, abnormal and emergency procedures applicable to the aircraft to which the check pilot is in transition.
- (4) An AOC holder shall ensure that the initial and transition flight training for check pilots in an aircraft include—
 - (a) training and practice in conducting flight evaluations, from the left and right pilot seats for pilot check pilots in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight checks;
 - (b) the potential results of improper, untimely, or non-execution of safety measures during an evaluation; and
 - (c) the safety measures, to be taken from either pilot seat for pilot check pilots, for emergency situations that are likely to develop during an evaluation.
 - (d) training and practice in conducting flight checks in the required normal, abnormal, and emergency procedures to ensure competence to conduct the evaluations checks required by this regulation; and
 - (e) training in the operation of synthetic flight trainers to ensure competence to conduct the evaluations required by this Part.
 - (f) (5) An AOC holder shall accomplish flight training for check pilot in full or in part in an aircraft, in flight in a synthetic flight trainer, as appropriate.

Authorised instructor or synthetic flight trainer and authorised instructor training

145 (1) No AOC holder shall use a person as an authorised instructor or a synthetic flight trainer authorised instructor in a training programme unless—

- (a) that person has satisfactorily completed initial or transition authorized instructor or a synthetic flight trainer authorised instructor training, as appropriate; and
- (b) within the preceding 24 months, that person satisfactorily conducts instruction under the observation of an authorised person, an AOC holder's check pilot, an authorised flight engineer, as appropriate, or an examiner employed by the AOC holder.

- (2) An AOC holder shall—
- (a) accomplish the observation check for a authorized instructor or a synthetic flight trainer authorised instructor, in part or in full, in an aircraft, or a synthetic flight trainer; as appropriate;
 - (b) ensure that initial ground training for an authorised instructor and synthetic flight trainer authorised instructor includes the following—
 - (i) the duties, functions, and responsibilities;
 - (ii) applicable regulations and the AOC holder's policies and procedures;
 - (iii) appropriate methods, procedures, and techniques for conducting the required checks; and
 - (iv) proper evaluation of trainee performance including the detection of—
 - (v) improper and insufficient training; and
 - (vi) personal characteristics of an applicant that could adversely affect safety.
 - (vii) appropriate corrective action in the case of unsatisfactory checks;
 - (viii) approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the aircraft; and
 - (ix) except for holders of a flight instructor licence;
 - (x) the fundamental principles of the teaching-learning process;
 - (xi) teaching methods and procedures; and
 - (xii) the instructor-trainee relationship.
 - (c) ensure that the transition ground training for an authorised instructor and synthetic flight trainer authorised instructor includes the approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the aircraft to which the authorised instructor is in transition;
 - (d) ensure that the initial and transition flight training for an authorized instructor and synthetic flight trainer authorised instructor includes the following—
 - (i) the safety measures for emergency situations that are likely to develop during instruction;
 - (ii) the potential results of improper, untimely, or non-execution of safety measures during instruction;
 - (iii) for pilot authorised instructor:
 - (iv) in-flight training and practice in conducting flight instruction from the left and right pilot seats in the required normal, abnormal, and emergency procedures to ensure competence as an instructor; and
 - (v) the safety measures to be taken from either pilot seat for emergency situations that are likely to develop during instruction; and
 - (vi) for authorised flight engineer instructor, in-flight training to ensure competence to perform assigned duties.
 - (e) accomplish the flight training requirements for an authorised instructor in full or in part in an aircraft, in flight or in a synthetic flight trainer;
 - (f) ensure that the initial and transition flight training for synthetic flight trainer authorised instructor includes the following:
 - (i) training and practice in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight instruction required by this regulation, where the training and practice are accomplished in full or in part in a synthetic flight trainer; and
 - (ii) training in the operation of synthetic flight trainers, to ensure competence to conduct the flight instruction required by this regulation.

Authorised instructor qualifications

- 146 (1) No AOC holder shall use a person as an instructor in an established training programme unless, with respect to the aircraft type involved, that person—
- (a) holds licences and ratings required to serve as a PIC or a flight engineer;
 - (b) has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training, that are required to serve as a PIC or a flight engineer, as applicable;
 - (c) has satisfactorily completed the appropriate proficiency, competency and recency of experience checks that are required to serve as a PIC or a flight engineer, as applicable;

- (d) has satisfactorily completed the applicable initial or transitional training requirements and the Authority-observed in-flight competency check; and
- (e) holds a Class 1 medical certificate.

Check pilot and authorised flight engineer qualifications

147 (1) No AOC holder shall use a person as a check pilot or an flight engineer authorised by the AOC holder and accepted by the Authority in an established training programme unless, with respect to the aircraft type involved, that person—

- (a) holds the pilot licences and ratings required to serve as PIC or a flight engineer;
- (b) has satisfactorily completed the appropriate training phases for the aircraft, including recurrent training, that are required to serve as a PIC or a flight engineer;
- (c) has satisfactorily completed the appropriate proficiency, competency and recency of experience checks that are required to serve as a PIC or a flight engineer;
- (d) has satisfactorily completed the applicable initial or transitional training requirements and the Authority-observed in-flight competency check;
- (e) holds Class I or II medical certificate as may be applicable; and
- (f) has been approved by the Authority for the check pilot or authorised flight engineer duties involved as applicable.

Check pilot designation, authorizations and limitations

148 (1) No AOC holder shall use a person as a check pilot for—

- (a) any flight check unless that person has been designated by name for specified function by the Authority within the preceding twelve months;
- (b) for any check—
 - (i) in an aircraft as a required flight crew member unless that person holds the required flight crew licence and ratings and has completed for the AOC holder all applicable training, qualification and currency requirements under this Part applicable to the crew position and the flight operations being checked;
 - (ii) in an aircraft as an observer check pilot unless that person holds the pilot licences and ratings and has completed all applicable training, qualification and line observation requirements under this Part applicable to the position and the flight operations being checked; or
 - (iii) in a synthetic flight trainer unless that person has completed or observed with the AOC holder all training, qualification and line observation requirements under this Part applicable to the position and flight operations being checked.
- (2) For purposes of subsection (1), a check pilot shall be authorised to—
 - (a) conduct proficiency or competency checks, line checks, and special qualification checks;
 - (b) supervise the re-establishment of landing currency; and
 - (c) supervise any initial operating experience requirements prescribed by the regulations or the Authority.

Synthetic flight trainer approval

149 An AOC holder shall not use a synthetic flight trainer for—

- (a) training or checking unless that synthetic flight trainer has been specifically approved for the AOC holder in writing by the Authority; or
- (b) any purpose other than that specified in the Authority's approval.

Line qualification: check pilot and instructor

150 No air operator certificate holder shall use a person as a check pilot or synthetic flight trainer instructor unless, within the preceding twelve months before that service, that person has—

- (a) flown at least five flights as a required flight crew member for the type of aircraft involved; or
- (b) observed, in the cockpit, the conduct of two complete flights in the aircraft type to which the person is assigned.

Termination of a proficiency, competence or line check

151 No air operator certificate holder shall use a crew member or flight dispatcher in whose check was terminated in commercial air transport operations until the completion of a satisfactory recheck of that crew member or flight dispatcher has been carried out.

Recording of crew member qualifications

152 (1) The air operator certificate holder shall record and maintain for each crew member and flight dispatcher, a record of each test and check as required by this Part.

(2) A pilot may complete the curricula required by this Part concurrently or intermixed with other required curricula, but completion of each of these curricula shall be recorded separately.

Monitoring of training and checking activities

153 (1) An AOC holder shall forward to the Authority, at least five working days prior to the scheduled activity, the dates, location, reporting times and report of all—

- (a) training for which a curriculum is approved in the AOC holder's training programme; and
- (b) proficiency, competence and line checks, so as to enable adequate supervision of its training and checking activities,

(2) Failure to provide the information in subsection (1) may invalidate the training or check and the Authority may require that it be repeated for observation purposes.

Eligibility period

154 (1) A crew member who is required to take a proficiency check, a test or competency check, or recurrent training to maintain qualification for commercial air transport operations shall complete those requirements at any time during the eligibility period.

(2) The eligibility period is defined as the 3 month period including the month prior, the month due, and the month after any due date specified by this Part.

(3) Completion of the requirement at any time during the period shall be considered as completed in the month due for calculation of the next due date.

SUB PART X
MANUALS, LOGS AND RECORDS

Flight manual

155 (1) An operator shall ensure that a flight manual contains the information specified in Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018.

(2) The flight manual shall be updated by implementing changes made mandatory by the Authority.

Operator's maintenance control manual

156 (1) The operator's maintenance control manual provided in accordance with section 115, shall contain the following information—

- (a) a description of the procedures required by section 114 including where applicable—
 - (i) a description of the administrative arrangements between the operator and the approved maintenance organisation;
 - (ii) a description of the maintenance procedures and the procedures for completing and signing a maintenance release when maintenance is based on a system other than that of an approved maintenance organization.
- (b) names and duties of the qualified person or persons required by section 114(4);
- (c) a reference to the maintenance programme required by section 116(5);
- (d) a description of the methods used for the completion and retention of the operator's continuing airworthiness or maintenance records required by section 117;
- (e) a description of the procedures for monitoring, assessing and reporting maintenance and operational experience required by section 118(1).
- (f) a description of the procedures for complying with the service information reporting requirements of Civil Aviation (Airworthiness) Regulations, published in statutory instrument 64 of 2018;
- (g) a description of procedures for assessing continuing airworthiness information and implementing any resulting actions, as required by section 118(2).
- (h) a description of the procedures for implementing action resulting from mandatory continuing airworthiness information;

- (i) a description of establishing and maintaining a system of analysis and continued monitoring of the performance and efficiency of the maintenance programme in order to correct any deficiency in that programme;
 - (j) a description of aircraft types and models to which the manual applies;
 - (k) a description of procedures for ensuring that unserviceabilities affecting airworthiness are recorded and rectified; and
 - (l) a description of the procedures for advising the Authority of significant in-service occurrences.
- (2) An operator shall submit two copies of the maintenance control manual referred to in subsection (1) and any amendments to it review and approval by the Authority.

Maintenance programme

157 (1) An operator shall ensure that maintenance programme for each aeroplane as required by section 116 shall contain the following information—

- (a) maintenance tasks and the intervals at which these are to be performed, taking into account the anticipated utilisation of the aeroplane;
 - (b) where applicable, a continuing structural integrity programme;
 - (c) procedures for changing or deviating from paragraphs (a) and (b); and
 - (d) where applicable, condition monitoring and reliability programme descriptions for aircraft systems, components and engines.
- (2) Maintenance tasks and intervals that have been specified as mandatory in approval of the type design shall be identified as such by the operator.
- (3) The maintenance programme shall be based on maintenance programme information made available by the State of Design or by the organisation responsible for the type design, and any additional applicable experience.
- (4) Electronic Aircraft Maintenance Records (EAMR) may be used in accordance with Civil Aviation (Approved Maintenance Organisation) Regulations, published in statutory instrument 77 of 2018 that address the existence and use of EAMR digital and other paperless forms of maintenance records.

Journey log book

158 (1) An aeroplane journey log book shall contain the following items and the corresponding roman numerals—

- (m) I — Aeroplane nationality and registration
- (n) II — Date
- (o) III — Names of crew members
- (p) IV — Duty assignments of crew members
- (q) V — Place of departure
- (r) VI — Place of arrival
- (s) VII — Time of departure
- (t) VIII — Time of arrival
- (u) IX — Hours of flight
- (v) X — Nature of flight (private, aerial work, scheduled or non-scheduled)
- (w) XI — Incidents, observations, if any
- (x) XII — Signature of person in charge.

- (2) Entries in the journey log book shall be made currently and in ink or indelible pencil.
- (3) Completed journey log book shall be retained to provide a continuous record of the last 6 months of operations.

Records of emergency and survival equipment carried

159 (1) An Operator shall at all times have available for immediate communication to rescue coordination centers, lists containing information on the emergency and survival equipment carried on board any aeroplane engaged in air navigation.

- (2) The information specified in subsection (1) shall include, as applicable—
 - (a) the number, colour and type of life rafts and pyrotechnics;
 - (b) details of emergency medical supplies;
 - (c) water supplies; and
 - (d) the type and frequencies of the emergency portable radio equipment.

Portable electronic devices

160 A PIC or any other crew member shall not permit any person to use, nor shall any person use a portable electronic device on board an aircraft that may adversely affect the performance of aircraft systems and equipment unless—

- (a) for IFR operations other than commercial air transport, the PIC allows such a device prior to its use; or
- (b) for commercial air transport operations, the AOC holder makes a determination of acceptable devices and publishes that information in the Operations Manual for the crew members' use; and
- (c) the PIC informs passengers of the permitted use.

SUB PART XI
SECURITY

Security of the flight crew compartment

161 (1) An operator shall ensure that every aeroplane equipped with a flight crew compartment door is capable of being locked.

(2) An operator shall ensure that in all aeroplanes which are equipped with a flight crew compartment door in accordance with subsection (1)—

- (a) the door shall be closed and locked from the time all external doors are closed following embarkation until any such door is opened for disembarkation, except when necessary to permit access and egress by authorised persons; and
- (b) means shall be provided for monitoring from either pilot's station the entire door area outside the flight crew compartment to identify persons requesting entry and to detect suspicious behaviour or potential threat.

Aeroplane search procedure checklist

162 (1) 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 and for inspecting aeroplanes for concealed weapons, explosives or other dangerous devices when a well-founded suspicion exists that the aeroplane may be the object of an act of unlawful interference.

(2) The checklist referred to in subsection (1) shall be supported by guidance on the appropriate course of action to be taken should a bomb or suspicious object be found and information on the least-risk bomb location specific to the aeroplane.

(3) Specialised means of attenuating and directing the blast shall be provided for use at the least-risk bomb location.

Training programmes

163 (1) An operator shall establish and maintain—

- (a) an approved security training programme which ensures crew members act in the most appropriate manner to minimise the consequences of acts of unlawful interference;
- (b) 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 an aeroplane so that they contribute to the prevention of acts of sabotage or other forms of unlawful interference.

(2) As a minimum, approved security training programme shall include the following elements—

- (a) determination of the seriousness of any occurrence;
- (b) crew communication and coordination;
- (c) appropriate self-defense responses;
- (d) use of non-lethal protective devices assigned to crew members whose use is authorised by the Authority;
- (e) understanding of behaviour of terrorists so as to facilitate the ability of crew members to cope with hijacker behaviour and passenger responses;
- (f) live situational training exercises regarding various threat conditions;
- (g) flight crew compartment procedures to protect the aeroplane; and
- (h) aeroplane search procedures and guidance on least-risk bomb locations where practicable.

Reporting acts of unlawful interference

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

Stowage of weapons removed from passengers

165 Where the operator accepts the carriage of weapons removed from passengers, the aeroplane shall have provision for stowing such weapons in a place so that they are inaccessible to any person during flight time.

SUB PART XII
DANGEROUS GOODS

Operators with no specific approval for the transport of dangerous goods as cargo

166 (1) An operator with no specific approval to transport dangerous goods shall —

- (a) establish a dangerous goods training programme that meets—
 - (i) the requirements of Civil Aviation (Dangerous Goods) Regulations, statutory instrument 51 of 2018;
 - (ii) the applicable requirements of the Technical Instructions, as appropriate and details of the dangerous goods training programme, shall be included in the operator's operations manuals;
 - (iii) establish dangerous goods policies and procedures in its operations manual to meet, at a minimum, the requirements of Civil Aviation (Dangerous Goods) Regulations, statutory instrument 51 of 2018 and the Technical Instructions to allow operator personnel to—
 - A. identify and reject undeclared dangerous goods, including COMAT classified as dangerous goods; and
 - B. report to the appropriate authorities of the State of the operator and the State in which it occurred any—
 - I. occasions when undeclared dangerous goods are discovered in cargo or mail; and
 - II. dangerous goods accidents and incidents.
- (b) report to the appropriate authorities of the State of the Operator and the State of Origin any occasions when dangerous goods are discovered to have been carried—
 - (i) when not loaded, segregated, separated or secured in accordance with the Technical Instructions; and
 - (ii) without information having been provided to the pilot-in-command;
- (c) accept, handle, store, transport, load and unload dangerous goods, including COMAT classified as dangerous goods as cargo on board an aircraft; and
- (d) provide the pilot-in-command with accurate and legible written or printed information concerning dangerous goods that are to be carried as cargo.

Operators with a specific approval for the transport of dangerous goods as cargo

167. The Authority shall issue a specific approval for the transport of dangerous goods and ensure that the Operator—

- (a) establishes a dangerous goods training programme that meets the requirements in the Technical Instructions, and the requirements of Civil Aviation (Dangerous Goods) Regulations, statutory instrument 51 of 2018 as appropriate;
- (b) details of the dangerous goods training programme shall be included in the operator's operations manuals;
- (c) establishes dangerous goods policies and procedures in its operations manual to meet, at a minimum, the requirements of Civil Aviation (Dangerous Goods) Regulations, statutory instrument 51 of 2018 and the Technical Instructions to enable operator personnel to—
 - (i) identify and reject undeclared or misdeclared dangerous goods, including COMAT classified as dangerous goods;
 - (ii) report to the appropriate authorities of the state of the operator and the State in which it occurred any—
 - A. occasions when undeclared or misdeclared dangerous goods are discovered in cargo or mail; and
 - B. dangerous goods accidents and incidents;
- (d) report to the appropriate authorities of the state operator and the State of Origin any occasions when dangerous goods are discovered to have been carried when not loaded, segregated, separated or secured in accordance with the Technical Instructions; and
- (e) accept, handle, store, transport, load and unload dangerous goods, including COMAT classified as dangerous goods as cargo on board an aircraft; and
- (f) provide the pilot-in-command with accurate and legible written or printed information concerning dangerous goods that are to be carried as cargo.

Provision of information

168 (1) 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.

(2) The provisions relating to Dangerous Goods set forth in this subpart shall also apply to domestic commercial air transport operations.

SUB PART XIII
CARGO COMPARTMENT SAFETY

Transport of items in the cargo compartment

169 (1) An Operator shall establish a policy and procedures for the transport of items in the cargo compartment, which include the conduct of a specific safety risk assessment.

(2) The risk assessment specified in subsection (1) shall include at least the—

- (a) hazards associated with the properties of the items to be transported;
- (b) capabilities of the operator;
- (c) operational considerations including area of operations, diversion time;
- (d) capabilities of the aeroplane and its systems including cargo compartment fire suppression capabilities;
- (e) containment characteristics of unit load devices;
- (f) packing and packaging;
- (g) safety of the supply chain for items to be transported; and
- (h) quantity and distribution of dangerous goods items to be transported.

(3) An operator shall comply with the requirements for the transport of dangerous goods as specified in Civil Aviation (Dangerous Goods) Regulations, statutory instrument 51 of 2018.

FIRST SCHEDULE (section 76)

LIGHTS TO BE DISPLAYED BY AEROPLANES

1. TERMINOLOGY

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

(a) Angles of coverage.

- a) Angle of coverage A is formed by two intersecting vertical planes making angles of 70 degrees to the right and 70 degrees to the left respectively, looking aft along the longitudinal axis to a vertical plane passing through the longitudinal axis.
- b) Angle of coverage F is formed by two intersecting vertical planes making angles of 110 degrees to the right and 110 degrees to the left respectively, looking forward along the longitudinal axis to a vertical plane passing through the longitudinal axis.
- c) Angle of coverage L is formed by two intersecting vertical planes, one parallel to the longitudinal axis of the aeroplane, and the other 110 degrees to the left of the first, when looking forward along the longitudinal axis.
- d) Angle of coverage R is formed by two intersecting vertical planes, one parallel to the longitudinal axis of the aeroplane, and the other 110 degrees to the right of the first, when looking forward along the longitudinal axis.

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

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

Making way. An aeroplane on the surface of the water is “making way” when it is under way and has a velocity relative to the water.

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

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

Vertical planes. Planes perpendicular to the horizontal plane.

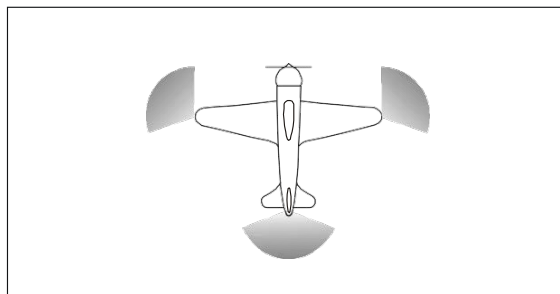
Visible. Visible on a dark night with a clear atmosphere.

2. NAVIGATION LIGHTS TO BE DISPLAYED IN THE AIR

Note.— The lights specified herein are intended to meet the requirements of Civil Aviation (Rules of the Air) Regulations for navigation lights.

As illustrated in Figure 1, the following unobstructed navigation lights shall be displayed:

- a) a red light projected above and below the horizontal plane through angle of coverage L;
- b) a green light projected above and below the horizontal plane through angle of coverage R;



- c) a white light projected above and below the horizontal plane rearward through angle of coverage A.

3. LIGHTS TO BE DISPLAYED ON THE WATER

3.1 General

Note.— The lights specified herein are intended to meet the requirements of Civil Aviation (Rules of the Air) Regulations for lights to be displayed by aeroplanes on the water.

The International Regulations for Preventing Collisions at Sea require different lights to be displayed in each of the following circumstances:

- a) when under way;
- b) when towing another vessel or aeroplane;
- c) when being towed;
- d) when not under command and not making way;
- e) when making way but not under command;
- f) when at anchor;
- g) when aground.

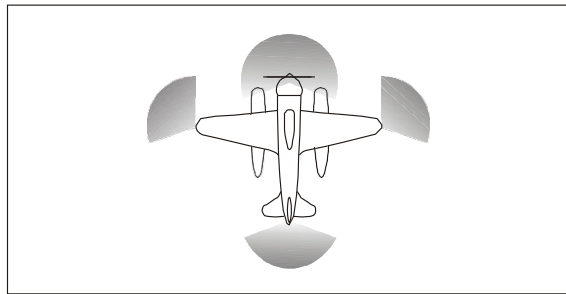
The lights required by aeroplanes in each case are described below.

3.2 When under way

As illustrated in Figure 2, the following appearing as steady unobstructed lights:

- (a) a red light projected above and below the horizontal through angle of coverage L;
- (b) a green light projected above and below the horizontal through angle of coverage R;
- (c) a white light projected above and below the horizontal through angle of coverage A; and
- (d) a white light projected through angle of coverage F.

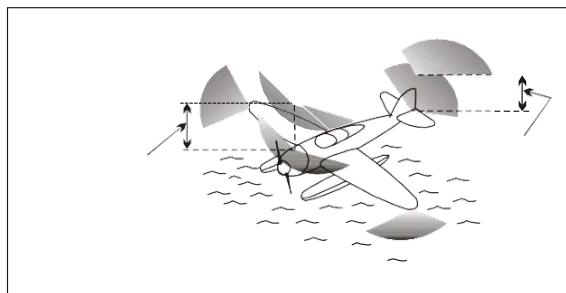
The lights described in 3.2 a), b) and c) should be visible at a distance of at least 3.7 km (2 NM). The light described in 3.2 d) should be visible at a distance of 9.3 km (5 NM) when fitted to an aeroplane of 20 m or more in length or visible at a distance of 5.6 km (3 NM) when fitted to an aeroplane of less than 20 m in length.



3.3 When towing another vessel or aeroplane

As illustrated in Figure 3, the following appearing as steady, unobstructed lights:

- a) the lights described in 3.2;
- b) a second light having the same characteristics as the light described in 3.2 d) and mounted in a vertical line at least 2 m above or below it; and
- c) a yellow light having otherwise the same characteristics as the light described in 3.2 c) and mounted in a vertical line at least 2 m above it.



3.4 When being towed

The lights described in 3.2 a), b) and c) appearing as steady, unobstructed lights.

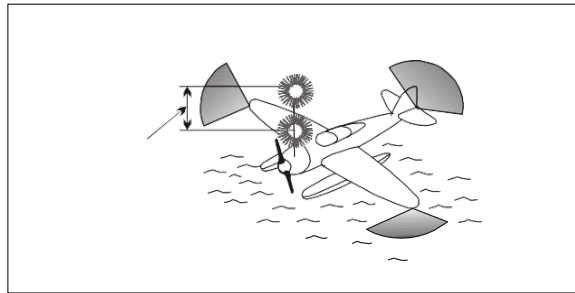
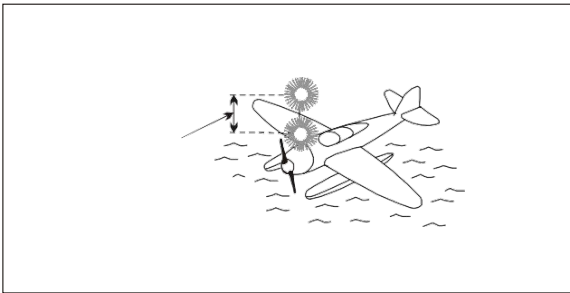
3.5 When not under command and not making way

As illustrated in Figure 4, two steady red lights placed where they can best be seen, one vertically over the other and not less than 1 m apart, and of such a character as to be visible all around the horizon at a distance of at least 3.7 km (2 NM).

3.6 When making way but not under command

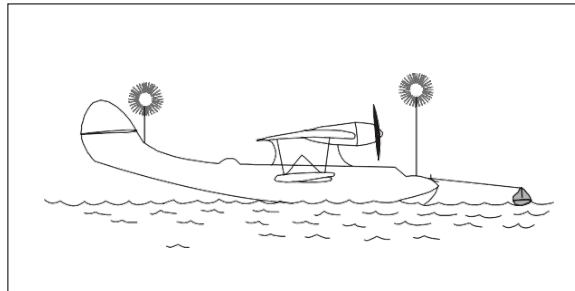
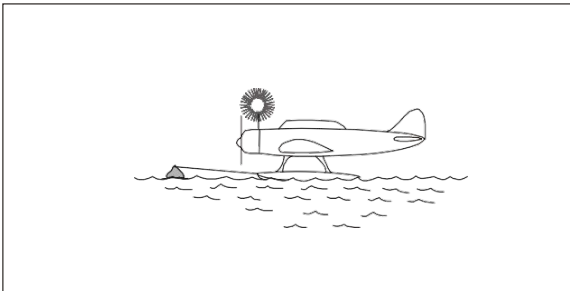
As illustrated in Figure 5, the lights described in 3.5 plus the lights described in 3.2 a), b) and c).

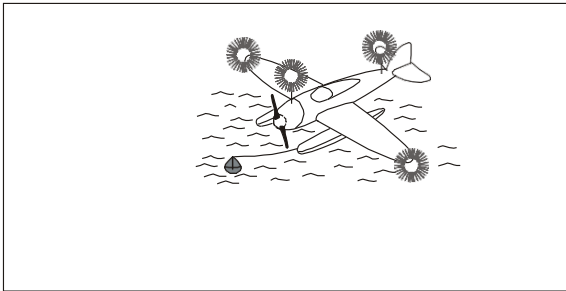
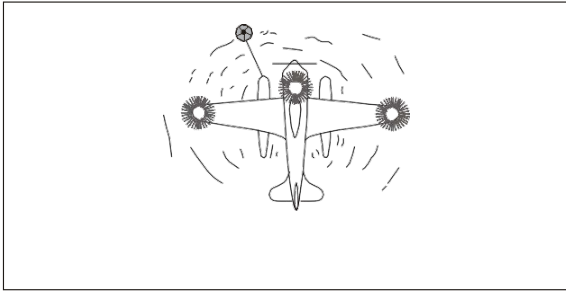
Note.— The display of lights prescribed in 3.5 and 3.6 is to be taken by other aircraft as signals that the aeroplane showing them is not under command and cannot therefore get out of the way. They are not signals of aeroplanes in distress and requiring assistance.



3.7 When at anchor

- a) If less than 50 m in length, where it can best be seen, a steady white light (Figure 6), visible all around the horizon at a distance of at least 3.7 km (2 NM).
- b) If 50 m or more in length, where they can best be seen, a steady white forward light and a steady white rear light (Figure 7) both visible all around the horizon at a distance of at least 5.6 km (3 NM).
- c) If 50 m or more in span a steady white light on each side (Figures 8 and 9) to indicate the maximum span and visible, so far as practicable, all around the horizon at a distance of at least 1.9 km (1 NM).





3.8 *When aground*

The lights prescribed in 3.7 and in addition two steady red lights in vertical line, at least 1 m apart so placed as to be visible all around the horizon.

SECOND SCHEDULE

ORGANISATION AND CONTENTS OF AN OPERATIONS MANUAL

1. ORGANISATION

An operations manual, which may be issued in separate parts corresponding to specific aspects of operations, provided in accordance with section 10, shall be organised with the following structure:

- a) General;
- b) Aircraft operating information;
- c) Areas, routes and aerodromes; and
- d) Training.

2. CONTENTS

The operations manual referred to in 1 shall contain at the least the following:

2.1 *General*

- 2.1.1 Instructions outlining the responsibilities of operations personnel pertaining to the conduct of flight operations.
- 2.1.2 Information and policy relating to fatigue management including:
 - a) policies pertaining to flight time, flight duty period, duty period limitations and rest requirements for flight and cabin crew members in accordance with Commercial Air Transport Aeroplanes) section 51 and
 - b) where applicable, policy and documentation pertaining to the operator's FRMS in accordance with Part II (Air Operator Certificate) Section 62.
- 2.1.3 A list of the navigational equipment to be carried including any requirements relating to operations where performance-based navigation is prescribed.
- 2.1.4 Where relevant to the operations, the long-range navigation procedures, engine failure procedure for EDTO and the nomination and utilization of diversion aerodromes.
- 2.1.5 The circumstances in which a radio listening watch is to be maintained.

- 2.1.6 The method for determining minimum flight altitudes.
- 2.1.7 The methods for determining aerodrome operating minima.
- 2.1.8 Safety precautions during refuelling with passengers on board.
- 2.1.9 Ground handling arrangements and procedures.
- 2.1.10 Procedures, as prescribed in Civil Aviation (Search and Rescue) Regulations, for pilots-in-command observing an accident.
- 2.1.11 The flight crew for each type of operation including the designation of the succession of command.
- 2.1.12 Specific instructions for the computation of the quantities of fuel and oil to be carried, taking into account all circumstances of the operation including the possibility of loss of pressurization and the failure of one or more engines while en route.
- 2.1.13 The conditions under which oxygen shall be used and the amount of oxygen determined in accordance with section 31.
- 2.1.14 Instructions for mass and balance control.
- 2.1.15 Instructions for the conduct and control of ground de-icing/anti-icing operations.
- 2.1.16 The specifications for the operational flight plan.
- 2.1.17 Standard operating procedures (SOPs) for each phase of flight.
- 2.1.18 Instructions on the use of normal checklists and the timing of their use.
- 2.1.19 Departure contingency procedures.
- 2.1.20 Instructions on the maintenance of altitude awareness and the use of automated or flight crew altitude call-out.
- 2.1.21 Instructions on the use of autopilots and auto-throttles in IMC

Note.— Instructions on the use of autopilots and auto-throttles, together with 2.1.26 and 2.1.30, are essential for avoidance of approach and landing accidents and controlled flight into terrain accidents.

- 2.1.22 Instructions on the clarification and acceptance of ATC clearances, particularly where terrain clearance is involved.
- 2.1.23 Departure and approach briefings.
- 2.1.24 Procedures for familiarization with areas, routes and aerodromes.
- 2.1.25 Stabilised approach procedure.
- 2.1.26 Limitation on high rates of descent near the surface.
- 2.1.27 Conditions required to commence or to continue an instrument approach.
- 2.1.28 Instructions for the conduct of precision and non-precision instrument approach procedures.
- 2.1.29 Allocation of flight crew duties and procedures for the management of crew workload during night and IMC instrument approach operations.
- 2.1.30 Instructions and training requirements for the avoidance of controlled flight into terrain and policy for the use of the ground proximity warning system (GPWS).
- 2.1.31 Policy, instructions, procedures and training requirements for the avoidance of collisions and the use of the airborne collision avoidance system (ACAS).
- 2.1.32 Information and instructions relating to the interception of civil aircraft including:
 - a) procedures, as prescribed in Civil Aviation (Rules of the Air) Regulations, for pilots-in-command of intercepted aircraft; and
 - b) visual signals for use by intercepting and intercepted aircraft, as contained in Civil Aviation (Rules of the Air) Regulations.
- 2.1.33 For aeroplanes intended to be operated above 15 000 m (49 000 ft):
 - a) information which will enable the pilot to determine the best course of action to take in the event of exposure to solar cosmic radiation; and
 - b) procedures in the event that a decision to descend is taken, covering:
 - 1) the necessity of giving the appropriate ATS unit prior warning of the situation and of obtaining a provisional descent clearance; and
 - 2) the action to be taken in the event that communication with the ATS unit cannot be established or is interrupted.

Note.— Guidance material on the information to be provided is contained in Circular 126 — Guidance Material on SST Aircraft Operations.

- 2.1.34 Details of the safety management system (SMS) provided in accordance with Civil Aviation (Safety Management) Regulations

2.1.35 Information and instructions on the carriage of dangerous goods, in accordance with this part, including action to be taken in the event of an emergency.

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

- 2.1.36 Security instructions and guidance.
- 2.1.37 The search procedure checklist provided in accordance with section 162
- 2.1.38 Instructions and training requirements for the use of head-up displays (HUD) and enhanced vision systems (EVS) equipment as applicable.
- 2.1.39 Instructions and training requirements for the use of the EFB, as applicable.

2.2 Aircraft operating information

- 2.2.1 Certification limitations and operating limitations.
- 2.2.2 The normal, abnormal and emergency procedures to be used by the flight crew and the checklists relating thereto as required by section 52(5).
- 2.2.3 Operating instructions and information on climb performance with all engines operating, if provided in accordance with section 11
- 2.2.4 Flight planning data for pre-flight and in-flight planning with different thrust/power and speed settings.
- 2.2.5 The maximum crosswind and tailwind components for each aeroplane type operated and the reductions to be applied to these values having regard to gusts, low visibility, runway surface conditions, crew experience, use of autopilot, abnormal or emergency circumstances, or any other relevant operational factors.
- 2.2.6 Instructions and data for mass and balance calculations.
- 2.2.7 Instructions for aircraft loading and securing of load.
- 2.2.8 Aircraft systems, associated controls and instructions for their use, as required by this part
- 2.2.9 The minimum equipment list and configuration deviation list for the aeroplane types operated and specific operations authorized, including any requirements relating to operations where performance-based navigation is prescribed.
- 2.2.10 Checklist of emergency and safety equipment and instructions for its use.
- 2.2.11 Emergency evacuation procedures, including type-specific procedures, crew coordination, assignment of crew's emergency positions and the emergency duties assigned to each crew member.
- 2.2.12 The normal, abnormal and emergency procedures to be used by the cabin crew, the checklists relating thereto and aircraft systems information as required, including a statement related to the necessary procedures for the coordination between flight and cabin crew.
- 2.2.13 Survival and emergency equipment for different routes and the necessary procedures to verify its normal functioning before take-off, including procedures to determine the required amount of oxygen and the quantity available.
- 2.2.14 The ground-air visual signal code for use by survivors, as contained in Civil Aviation (Search and Rescue) Regulations.

2.3 Routes and aerodromes

- 2.3.1 A route guide to ensure that the flight crew will have, for each flight, information relating to communication facilities, navigation aids, aerodromes, instrument approaches, instrument arrivals and instrument departures as applicable for the operation, and such other information as the operator may deem necessary for the proper conduct of flight operations.
- 2.3.2 The minimum flight altitudes for each route to be flown.
- 2.3.3 Aerodrome operating minima for each of the aerodromes that are likely to be used as aerodromes of intended landing or as alternate aerodromes.
- 2.3.4 The increase of aerodrome operating minima in case of degradation of approach or aerodrome facilities.
- 2.3.5 Instructions for determining aerodrome operating minima for instrument approaches using HUD and EVS.
- 2.3.6 The necessary information for compliance with all flight profiles required by regulations, including but not limited to, the determination of:
 - a) take-off runway length requirements for dry, wet and contaminated conditions, including those dictated by system failures which affect the take-off distance;
 - b) take-off climb limitations;
 - c) en-route climb limitations;

- d) approach climb limitations and landing climb limitations;
- e) landing runway length requirements for dry, wet and contaminated conditions, including systems failures which affect the landing distance; and
- f) supplementary information, such as tire speed limitations.

2.4 Training

2.4.1 Details of the flight operations officer/flight dispatcher training programme when employed in conjunction with a method of flight supervision in accordance with section 17

THIRD SCHEDULE

ADDITIONAL REQUIREMENTS FOR APPROVED OPERATIONS BY SINGLE-ENGINE TURBINE-POWERED AEROPLANES AT NIGHT AND/OR IN INSTRUMENT METEOROLOGICAL CONDITIONS (IMC)

1. TURBINE ENGINE RELIABILITY

1.1 Turbine engine reliability shall be shown to have a power loss rate of less than 1 per 100 000 engine hours.

Note.— Power loss in this context is defined as any loss of power, the cause of which may be traced to faulty engine or engine component design or installation, including design or installation of the fuel ancillary or engine control systems. (See Attachment G.)

1.2 An operator shall be responsible for engine trend monitoring.

1.3 To minimise the probability of in-flight engine failure, the engine shall be equipped with:

- a) an ignition system that activates automatically, or is capable of being operated manually, for take-off and landing, and during flight, in visible moisture;
- b) 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
- c) an emergency engine power control device that permits 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.

2. SYSTEMS AND EQUIPMENT

Single-engine turbine-powered aeroplanes approved to operate at night and/or in IMC shall be equipped with the following systems and equipment intended to ensure continued safe flight and to assist in achieving a safe forced landing after an engine failure, under all allowable operating conditions:

- a) 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 at night and/or in IMC;
- b) a radio altimeter;
- c) an emergency electrical supply system of sufficient capacity and endurance, following loss of all generated power, to as a minimum:
 - 1) maintain the operation of all essential flight instruments, communication and navigation systems during a descent from the maximum certificated altitude in a glide configuration to the completion of a landing;
 - 2) lower the flaps and landing gear, if applicable;
 - 3) provide power to one pitot heater, which must serve an air speed indicator clearly visible to the pilot;
 - 4) provide for operation of the landing light specified in 2 j);
 - 5) provide for one engine restart, if applicable; and
 - 6) provide for the operation of the radio altimeter;
- d) two attitude indicators, powered from independent sources;
- e) a means to provide for at least one attempt at engine re-start;
- f) airborne weather radar;
- g) a certified area navigation system capable of being programmed with the positions of aerodromes and safe forced landing areas, and providing instantly available track and distance information to those locations
- h) for passenger operations, passenger seats and mounts which meet dynamically-tested performance standards and which are fitted with a shoulder harness or a safety belt with a diagonal shoulder strap for each passenger seat;
- i) in pressurized aeroplanes, sufficient supplemental oxygen for all occupants for descent following engine failure at the maximum glide performance from the maximum certificated altitude to an altitude at which supplemental oxygen is no longer required;

- j) a landing light that is independent of the landing gear and is capable of adequately illuminating the touchdown area in a night forced landing; and
- k) an engine fire warning system.

3. MINIMUM EQUIPMENT LIST

The State of the Operator shall require the minimum equipment list of the operator approved in accordance with this part,

5.4 to specify the operating equipment required for night and/or IMC operations, and for day/VMC operations.

4. FLIGHT MANUAL INFORMATION

The flight manual shall include limitations, procedures, approval status and other information relevant to operations by single-engine turbine-powered aeroplanes at night and/or in IMC.

5. EVENT REPORTING

5.1 An operator approved for operations by single-engine turbine-powered aeroplanes at night and/or in IMC shall report all significant failures, malfunctions or defects to the State of the Operator who in turn will notify the State of Design.

5.2 The State of the Operator shall review the safety data and monitor the reliability information so as to be able to take any actions necessary to ensure that the intended safety level is achieved. The State of the Operator will notify major events or trends of particular concern to the appropriate Type Certificate Holder and the State of Design.

6. OPERATOR PLANNING

6.1 Operator route planning shall take account of all relevant information in the assessment of intended routes or areas of operations, including the following:

- a) 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;
- b) weather information, including seasonal and other adverse meteorological influences that may affect the flight; and
- c) other criteria and limitations as specified by the State of the Operator.

6.2 An operator shall identify aerodromes or safe forced landing areas available for use in the event of engine failure, and the position of these shall be programmed into the area navigation system.

7. FLIGHT CREW EXPERIENCE, TRAINING AND CHECKING

7.1 The State of the Operator shall prescribe the minimum flight crew experience required for night/IMC operations by single-engine turbine-powered aeroplanes.

7.2 The operator's flight crew training and checking shall be appropriate to night and/or IMC operations by single-engine turbine-powered aeroplanes, covering normal, abnormal and emergency procedures and, in particular, engine failure, including descent to a forced landing in night and/or in IMC conditions.

8. ROUTE LIMITATIONS OVER WATER

The State of the Operator shall apply route limitation criteria for single-engine turbine-powered aeroplanes operating at night and/or in IMC on over water operations if beyond gliding distance from an area suitable for a safe forced landing/ditching having regard to the characteristics of the aeroplane, seasonal weather influences, including likely sea state and temperature, and the availability of search and rescue services.

9. OPERATOR CERTIFICATION OR VALIDATION

An operator shall demonstrate the ability to conduct operations by single-engine turbine-powered aeroplanes at night and/or in IMC through a certification and approval process specified by the State of the Operator.

FOURTH SCHEDULE

ALTIMETRY SYSTEM PERFORMANCE REQUIREMENTS FOR OPERATIONS IN RVSM AIRSPACE

1. In respect of groups of aeroplanes that are nominally of identical design and build with respect to all details that could influence the accuracy of height-keeping performance, the height-keeping performance capability shall be such that the total vertical error (TVE) for the group of aeroplanes shall have a mean no greater than 25 m (80 ft) in magnitude and shall have a standard deviation no greater than $28 - 0.013z^2$ for $0 \leq z \leq 25$ when z is the magnitude of the mean TVE in metres, or $92 - 0.004z^2$ for $0 \leq z \leq 80$ where z is in feet. In addition, the components of TVE shall have the following characteristics:

- a) the mean altimetry system error (ASE) of the group shall not exceed 25 m (80 ft) in magnitude;
- b) the sum of the absolute value of the mean ASE and of three standard deviations of ASE shall not exceed 75 m (245 ft); and
- c) the differences between cleared flight level and the indicated pressure altitude actually flown shall be symmetric about a mean of 0 m, with a standard deviation no greater than 13.3 m (43.7 ft), and in addition, the decrease in the frequency of differences with increasing difference magnitude shall be at least exponential.

2. In respect of aeroplanes for which the characteristics of the airframe and altimetry system fit are unique and so cannot be classified as belonging to a group of aeroplanes encompassed by paragraph 1, the height-keeping performance capability shall be such that the components of the TVE of the aeroplane have the following characteristics:

- a) the ASE of the aeroplane shall not exceed 60 m (200 ft) in magnitude under all flight conditions; and
- b) the differences between the cleared flight level and the indicated pressure altitude actually flown shall be symmetric about a mean of 0 m, with a standard deviation no greater than 13.3 m (43.7 ft), and in addition, the decrease in the frequency of differences with increasing difference magnitude shall be at least exponential.

FIFTH 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.

Note 1.— The term authority as used in this Appendix refers to the Civil Aviation Authority as well as equivalent organizations, including inspectors and staff.

Note 2.— Guidance on the inspection, certification and continued surveillance of operations is contained in the Manual of Procedures for Operations Inspection, Certification and Continued Surveillance (Doc 8335) and the Airworthiness Manual (Doc 9760).

2. 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.

3. STATE SAFETY OVERSIGHT SYSTEM AND FUNCTIONS

- 3.1 The State of the Operator shall ensure that the authority is responsible for the safety oversight of air operators.
- 3.2 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.
- 3.3 **Recommendation.**— *The methodology in 3.2 should be documented.*
- 3.4 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.

4. 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).*

5. TECHNICAL GUIDANCE, TOOLS AND PROVISION OF SAFETY-CRITICAL INFORMATION

- 5.1 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.
- 5.2 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.
- 5.3 The State of the Operator shall ensure that authority inspectors are provided with technical guidance manuals that address ethics, personal conduct and the avoidance of actual or perceived conflicts of interest in the performance of official duties.

6. 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.

Note.— *Attachment D contains further information in this regard.*

7. 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.

8. RESOLUTION OF SAFETY ISSUES

Note.— *Provisions for the resolution of safety issues are contained in Appendix 1 to Annex 19.*

SEVENTH SCHEDULE

AIR OPERATOR CERTIFICATE (AOC)

1. PURPOSE AND SCOPE

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

1.2 The air operator certificate and its associated operations specifications shall define the operations for which the operator is authorized, including specific approvals, conditions and limitations.

2. AOC TEMPLATE

AIR OPERATOR CERTIFICATE		
1	STATE OF THE OPERATOR²	1
	ISSUING AUTHORITY³	
AOC # ⁴ : Expiry date ⁵ :	OPERATOR NAME⁶ Db trading name ⁷ : Operator address ⁸ : Telephone ⁹ : 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 issue ¹⁴ :	Name and signature ¹⁵ : 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, or the operations specifications, page 1” or “... are listed in an attachment to this document”.*
12. *Operator’s registered name.*
13. *Insertion of reference to the appropriate civil aviation regulations.*
14. *Issuance date of the AOC (dd-mm-yyyy).*
15. *Title, name and signature of the authority representative. In addition, an official stamp may be applied on the AOC.*

3. OPERATIONS SPECIFICATIONS FOR EACH AIRCRAFT MODEL

3.1 For each aircraft model in the operator’s fleet, identified by aircraft 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.

3.2 The operations specifications layout 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 name ³ : _____		Date ⁴ : _____ Signature: _____
Dba trading name ³ : _____				
Aircraft model ⁵ :				
Types of operation: Commercial air transportation <input type="checkbox"/> Passengers <input type="checkbox"/> Cargo <input type="checkbox"/> Other ⁶ : _____				
Area(s) of operation ⁷ :				
Special limitations ⁸ :				
SPECIFIC APPROVAL	YES	NO	DESCRIPTION ⁹	REMARKS
Dangerous goods	<input type="checkbox"/>	<input type="checkbox"/>		
Low visibility operations Approach and landing Take-off Operational credit(s)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	CAT ¹⁰ : ____ RVR: ____ m DH: ____ ft RVR ¹¹ : __ m 12	
RVSM ¹³ <input type="checkbox"/> N/A	<input type="checkbox"/>	<input type="checkbox"/>		
EDTO ¹⁴ <input type="checkbox"/> N/A	<input type="checkbox"/>	<input type="checkbox"/>	Threshold time ¹⁵ : __ minutes Maximum diversion time ¹⁵ : _ minutes	
AR navigation specifications for PBN operations	<input type="checkbox"/>	<input type="checkbox"/>	16	
Continuing airworthiness	<input type="checkbox"/>	<input type="checkbox"/>	17	
EFB	<input type="checkbox"/>	<input type="checkbox"/>	18	
Other ¹⁹	<input type="checkbox"/>	<input type="checkbox"/>		

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 aircraft make, model and series, or master series, if a series has been designated (e.g. Boeing-737-3K2 or Boeing-777-232). The

- CAST/ICAO taxonomy is available at: <http://www.intlaviationstandards.org/>.
6. Other type of transportation to be specified (e.g. emergency medical service).
 7. List the geographical area(s) of authorized operation (by geographical coordinates or specific routes, flight information region or national or regional boundaries) 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 precision approach category (CAT II or III). 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. "Not applicable (N/A)" box may be checked only if the aircraft maximum ceiling is below FL 290.
 14. If extended diversion time operations (EDTO) specific approval does not apply based on the provisions in Chapter 4, 4.7, select "N/A". Otherwise a threshold time and maximum diversion time must be specified.
 15. The threshold time and maximum diversion time may also be listed in distance (NM). Details of each particular aeroplane-engine combination for which the threshold time is established and maximum diversion time has been granted may be listed under "remarks". One line per approval may be used if different approvals are granted.
 16. 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 "Description" column.
 17. Insert the name of the person/organization responsible for ensuring that the continuing airworthiness of the aircraft 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).
 18. List the EFB functions used for the safe operation of aeroplanes and any applicable limitations.
 19. Other authorizations or data can be entered here, using one line (or one multi-line block) per authorization (e.g. special approach authorization, approved navigation performance).

EIGHTH SCHEDULE

FLIGHT RECORDERS

Note: The material in this Appendix concerns flight recorders intended for installation in aeroplanes 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 lightweight flight recorder, it is permissible to record it on either the CARS or the ADRS.

1. GENERAL REQUIREMENTS

- 1.1 Non-deployable flight recorder containers shall be painted a distinctive orange colour.
- 1.2 Non-deployable crash-protected flight recorder containers shall:
 - a) carry reflective material to facilitate their location; and
 - b) have securely attached an automatically activated underwater locating device operating at a frequency of

37.5 kHz. At the earliest practicable date, but not later than 1 January 2018, this device shall operate for a minimum of 90 days.

1.3 Automatic deployable flight recorder containers shall:

- a) be painted a distinctive orange colour, however the surface visible from outside the aircraft may be of another colour;
- b) carry reflective material to facilitate their location; and
- c) have an integrated automatically activated ELT.

1.4 The flight recorder systems shall be installed so that:

- a) the probability of damage to the recordings is minimized;
- b) there is an aural or visual means for pre-flight checking that the flight recorder systems are operating properly; and
- c) 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
- d) for aeroplanes 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.

1.5 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.

1.6 The lightweight flight recorders shall be connected to a power source having the characteristics which ensure proper and reliable recording in the operational environment.

1.7 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.

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

1.9 The manufacturer shall provide the appropriate certificating authority with the following information in respect of the flight recorder systems:

- a) manufacturer's operating instructions, equipment limitations and installation procedures;
- b) parameter origin or source and equations which relate counts to units of measurement; and
- c) manufacturer's test reports.

1. FLIGHT DATA RECORDER (FDR) AND AIRCRAFT DATA RECORDING SYSTEMS (ADRS)

1.10 Start and stop logic

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

1.11 Parameters to be recorded

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

1.11.1 The parameters that satisfy the requirements for FDRs are listed in Table A8-1. The number of parameters to be recorded shall depend on aeroplane complexity. The parameters without an asterisk (*) are mandatory parameters which shall be recorded regardless of aeroplane complexity. In addition, the parameters

designated by an asterisk (*) shall be recorded if an information data source for the parameter is used by aeroplane systems or the flight crew to operate the aeroplane. However, other parameters may be substituted with due regard to the aeroplane type and the characteristics of the recording equipment.

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

- a) operational information from electronic display systems, such as electronic flight instrument systems (EFIS), electronic centralized aircraft monitor (ECAM) and engine indication and crew alerting system (EICAS). Use the following order of priority:
 - 1) parameters selected by the flight crew relating to the desired flight path, e.g. barometric pressure setting, selected altitude, selected airspeed, decision height, and autoflight system engagement and mode indications if not recorded from another source;
 - 2) display system selection/status, e.g. SECTOR, PLAN, ROSE, NAV, WXR, COMPOSITE, COPY, ETC.;
 - 3) warnings and alerts; and
 - 4) the identity of displayed pages for emergency procedures and checklists; and
- b) retardation information including brake application for use in the investigation of landing overruns and rejected take-offs.

1.11.3 The parameters that satisfy the requirements for flight path and speed as displayed to the pilot(s) are listed below. The parameters without an (*) are mandatory parameters which shall be recorded. In addition, the parameters designated by an (*) shall be recorded if an information source for the parameter is displayed to the pilot and is practicable to record:

- Pressure altitude
- Indicated airspeed or calibrated airspeed
- Heading (primary flight crew reference)
- Pitch attitude
- Roll attitude
- Engine thrust/power
- Landing-gear status*
- Total or outside air temperature*
- Time*
- Navigation data*: drift angle, wind speed, wind direction, latitude/longitude
- Radio altitude*

1.11.4 The parameters that satisfy the requirements for ADRS are the first 7 parameters in Table A8-3.

1.11.5 If further ADRS recording capacity is available, the recording of any parameters from 8 onwards defined in Table A8-3 shall be considered.

1.12 Additional information

1.12.1 The measurement range, recording interval and accuracy of parameters on installed equipment shall be verified by methods approved by the appropriate certificating authority.

1.12.2 Documentation concerning parameter allocation, conversion equations, periodic calibration and other serviceability/maintenance information shall be maintained by the operator. The documentation needs to be sufficient to ensure that accident investigation authorities have the necessary information to read out the data in engineering units

NINETH SCHEDULE

LOCATION OF AN AEROPLANE IN DISTRESS

1. PURPOSE AND SCOPE

Location of an aeroplane in distress aims at establishing, to a reasonable extent, the location of an accident site within a 6 NM radius.

2. OPERATION

2.1 An aeroplane in distress shall automatically activate the transmission of information from which its position can be determined by the operator and the position information shall contain a time stamp. It shall also be possible for this transmission to be activated manually. The system used for the autonomous transmission of position information shall be capable of transmitting that information in the event of aircraft electrical power loss, at least for the expected duration of the entire flight.

Note.— Guidance on the location of an aeroplane in distress is provided in Attachment K.

2.2 An aircraft is in a distress condition when it is in a state that, if the aircraft behaviour event is left uncorrected, can result in an accident. Autonomous transmission of position information shall be active when an aircraft is in a distress condition. This will provide a high probability of locating an accident site to within a 6 NM radius. The operator shall be alerted when an aircraft is in a distress condition with an acceptable low rate of false alerts. In case of a triggered transmission system, initial transmission of position information shall commence immediately or no later than five seconds after the detection of the activation event.

Note 1.— Aircraft behaviour events can include, but are not limited to, unusual attitudes, unusual speed conditions, collision with terrain and total loss of thrust/propulsion on all engines and ground proximity warnings.

Note 2.— A distress alert can be triggered using criteria that may vary as a result of aircraft position and phase of flight. Further guidance regarding in-flight event detection and triggering criteria may be found in the EUROCAE ED-237, Minimum Aviation System Performance Specification (MASPS) for Criteria to Detect In-Flight Aircraft Distress Events to Trigger Transmission of Flight Information.

2.3 When an aircraft operator or an air traffic service unit (ATSU) has reason to believe that an aircraft is in distress, coordination shall be established between the ATSU and the aircraft operator.

2.4 The State of the Operator shall identify the organizations that will require the position information of an aircraft in an emergency phase. These shall include, as a minimum:

- a) air traffic service unit(s) (ATSU); and
- b) SAR rescue coordination centre(s) (RCC) and sub-centres.

Note 1.— Refer to Annex 11 for emergency phase criteria.

Note 2.— Refer to Annex 12 for required notifications in the event of an emergency phase.

2.5 When autonomous transmission of position information has been activated, it shall only be able to be deactivated using the same mechanism that activated it.

2.6 The accuracy of position information shall, as a minimum, meet the position accuracy requirements established for ELTs.

TENTH SCHEDULE**ARTICLE 83 bis AGREEMENT SUMMARY**

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

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

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

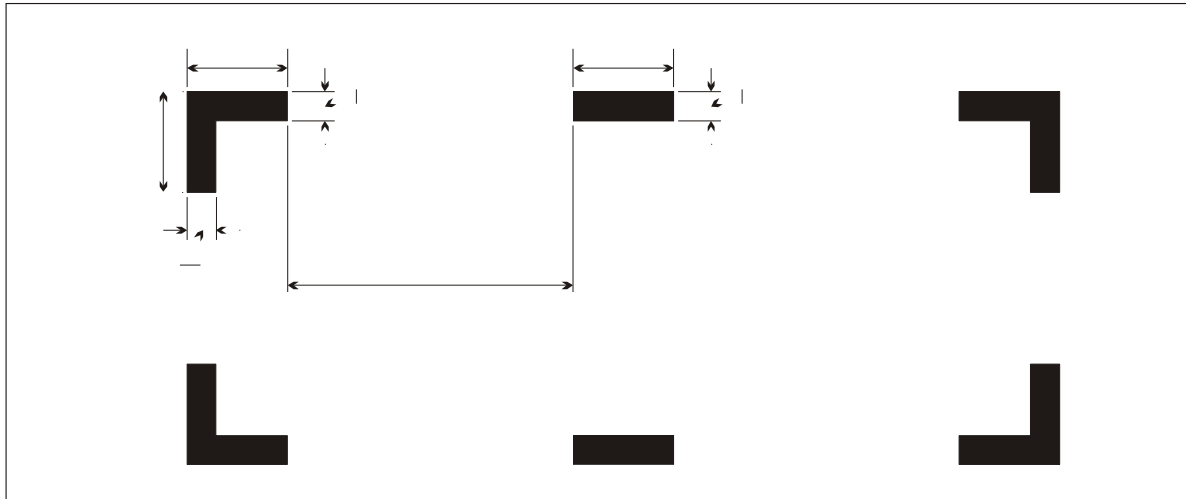
Notes.—

1. dd/mm/yyyy.
2. dd/mm/yyyy or N/A if not applicable.
3. Square brackets indicate information that needs to be provided.

**ELEVENTH SCHEDULE
MARKING OF BREAK-IN POINTS**

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

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



MARKING OF BREAK-IN POINTS

**TWELFTH SCHEDULE:
PRESCRIPTIVE DUTY TIME LIMITATIONS (taken from SI 87)**

The prescriptive duty time limitations are as specified in the twenty First Schedule of the Part II (Air Operator Certificate)

THIRTEENTH SCHEDULE

ATTACHMENT E. MINIMUM EQUIPMENT LIST (MEL)

1. If deviations from the requirements of States in the certification of aircraft were not permitted an aircraft could not be flown unless all systems and equipment were operable. Experience has proved that some unserviceability can be accepted in the short term when the remaining operative systems and equipment provide for continued safe operations.
2. The State should indicate through approval of a minimum equipment list those systems and items of equipment that may be inoperative for certain flight conditions with the intent that no flight can be conducted with inoperative systems and equipment other than those specified.
3. A minimum equipment list, approved by the State of the Operator, is therefore necessary for each aircraft, based on the master minimum equipment list established for the aircraft type by the organization responsible for the type design in conjunction with the State of Design.
4. The State of the Operator should require the operator to prepare a minimum equipment list designed to allow the operation of an aircraft with certain systems or equipment inoperative provided an acceptable level of safety is maintained.
5. The minimum equipment list is not intended to provide for operation of the aircraft for an indefinite period with inoperative systems or equipment. The basic purpose of the minimum equipment list is to permit the safe operation of an aircraft with inoperative systems or equipment within the framework of a controlled and sound programme of repairs and parts replacement.

6. Operators are to ensure that no flight is commenced with multiple minimum equipment list items inoperative without determining that any interrelationship between inoperative systems or components will not result in an unacceptable degradation in the level of safety and/or undue increase in the flight crew workload.

7. The exposure to additional failures during continued operation with inoperative systems or equipment must also be considered in determining that an acceptable level of safety is being maintained. The minimum equipment list may not deviate from requirements of the flight manual limitations section, emergency procedures or other airworthiness requirements of the State of Registry or of the State of the Operator unless the appropriate airworthiness authority or the flight manual provides otherwise.

8. Systems or equipment accepted as inoperative for a flight should be placarded where appropriate, and all such items should be noted in the aircraft technical log to inform the flight crew and maintenance personnel of the inoperative system or equipment.

9. For a particular system or item of equipment to be accepted as inoperative, it may be necessary to establish a maintenance procedure, for completion prior to flight, to de-activate or isolate the system or equipment. It may similarly be necessary to prepare an appropriate flight crew operating procedure.

10. The responsibilities of the pilot-in-command in accepting an aeroplane for operation with deficiencies in accordance with a minimum equipment list are specified in section 52(4).