STATUTORY INSTRUMENTS
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S T A T U T O R Y I N S T R U M E N T

2020 No. 36.

CIVIL AVIATION (OPERATION OF AIRCRAFT) (GENERAL AVIATION AEROPLANES) REGULATIONS, 2020

ARRANGEMENT OF REGULATIONS

Regulations

11. Aerodrome operating minima
12. Passengers
13. Flight preparation
14. Flight planning
15. Meteorological conditions for VFR Flights
16. IFR flights
17. Flight in known icing conditions
18. Destination alternate aerodromes
19. Fuel and oil requirements
20. Refuelling with passengers on board
21. Oxygen supply
22. In flight procedures for aerodrome operating minima.
23. Meteorological and operational observations by pilots
24. Hazardous flight conditions
25. Flight crew members at duty stations
26. Aeroplane operating procedures for landing performance
27. Use of oxygen by flight crew members
28. Safeguarding of cabin crew and passengers in the event of loss of pressurisation
29. In-flight fuel management
30. Instrument approach procedures
31. Duties of pilot-in-command
32. Cabin baggage to be securely stowed

Aeroplane Performance Operating Limitations

33. General aeroplane performance operating limitations

Aeroplane Continuing Airworthiness

34. Owner's continuing airworthiness responsibilities
35. Continuing airworthiness records
36. Modifications and repairs
37. Maintenance release

58. Flight preparation.
59. Operational flight planning
60. Alternate aerodromes.
61. Fuel requirements
62. Additional requirements for operations beyond 60 minutes to an en-route alternate aerodrome.
63. Refuelling with Passengers on board
64. Oxygen supply
65. In-flight procedures instrument approaches
66. Use of Oxygen
67. Aeroplane operating procedures for noise abatement
68. Aeroplane operating procedures for rates of climb and descent
69. Aeroplane operating procedures for landing performance
70. Duties of pilot-in-command
71. Securing cabin baggage for take-off and Landing

Part Iv — Aeroplane Performance Operating Limitations for Large and Turbojet Aeroplanes

72. General
73. Performance limitation of aeroplanes above 5700kg certificated between 13th June, 1960 and 2nd March, 2004 and aeroplanes certificated after 2nd March, 2004
74. Mass limitations

Part V - Aeroplane Continuing Airworthiness

75. Operator's continuing airworthiness responsibilities
76. Operator's maintenance control manual
77. Maintenance programme
78. Continuing airworthiness information
79. Corporate maintenance release

Part VI - Aeroplane Flight Crew

Part VII -Flight Operations Officer/Flight Dispatcher

Part VIII -Manuals, Logs and Records

Part IX –Security

SCHEDULES

S T A T U T O R Y I N S T R U M E N T

2020 No. 35.

Civil Aviation (Operation of Aircraft) (General Aviation Aeroplanes) Regulations, 2020

(Under sections 34(2) and 61 of the Civil Aviation Authority Act, Cap. 354)

IN EXERCISE of the powers conferred upon the Minister responsible for transport by section 5, 34(2) and 61 of the Civil Aviation Authority Act, and on the recommendation of the Civil Aviation Authority, these Regulations are made this 5th day of February, 2020.

Part I — Preliminary

1. Title

These Regulations may be cited as the Civil Aviation Authority (Operation of Aircraft) (General Aviation Aeroplanes) Regulations, 2020.

2. Application

These Regulations shall apply to all aeroplanes engaged in general aviation operations and operators of aeroplanes used in general aviation

3. Interpretation

In these Regulations, unless the context otherwise requires—

"accelerate-stop distance available (ASDA)" means the length of the take-off run available plus the length of stop way, if any;

"Act" means the Civil Aviation Authority Act;

"acts of unlawful interference" means an act or attempted act such as to jeopardise the safety of civil aviation and air transport, and includes—

(a) unlawful seizure of aeroplane in flight;

(b) unlawful seizure of aeroplane on the ground;

(c) hostage-taking on board an aeroplane or on aerodromes;

(d) forcible intrusion on board an aeroplane, at an airport or on the premises of an aeronautical facility;

(e) introduction on board an aeroplane or at an airport of a weapon or hazardous device or material intended for criminal purposes; or

(f) communication of false information as to jeopardise the safety of an aeroplane 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;

"advisory airspace" means an airspace of defined dimensions, or designated route, within which air traffic advisory service is available;

"aerial work" means an aeroplane operation in which an aeroplane is used for specialised services including agriculture, construction, photography, surveying, observation and patrol, search and rescue and aerial advertisement;

"aerodrome" means a defined area on land or water, including any buildings, installations and equipment, used or intended to be used either wholly or in part for the arrival, departure and surface movement of an aeroplane;

"aerodrome operating minima" means the limits of usability of an aerodrome for—

(a) take-off, expressed in terms of runway visual range and visibility and, if necessary, cloud conditions;

(b) landing in 2D instrument approach operations, expressed in terms of visibility or runway visual range, 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) as appropriate to the type or category of the operation;

"aeronautical product" means any aeroplane, an aeroplane engine, propeller, or sub-assembly, appliance, material, part, or component to be installed;

"aeroplane" means a power-driven heavier-than-air aeroplane, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight;

"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 surface;

"aircraft operating manual" means a manual, acceptable to the Authority, containing normal, abnormal and emergency procedures, checklists, limitations, performance information, details of the aeroplane systems and other material relevant to the operation of the aeroplane;

"airframe" means the fuselage, booms, nacelles, cowlings, fairings, airfoil surfaces, including rotors (but excluding propellers and rotating airfoils of a power plant) and landing gear of an aeroplane and their accessories and controls;

"aeroplane tracking" means a process, established by an operator, that maintains and updates, at standardised intervals, a ground-based record of the four dimensional position of individual aeroplane in flight;

"air operator certificate (AOC)" means a certificate authorising an operator to carry out specified commercial air transport operations;

"air traffic control service" means a service provided for the purpose of—

(a) preventing collisions—

(i) between aeroplanes; and

(ii) on manoeuvring area between aeroplanes and obstructions; and

(b) expediting and maintaining an orderly flow of air traffic;

"air traffic control (ATC) unit" means variously, an area control centre, approach control unit or aerodrome control tower;

"air traffic service (ATS)" means variously, flight information service, alerting service, air traffic advisory service, air traffic control service, area control service, approach control service or aerodrome control service;

"aeroplane type" means all aeroplane of the same basic design;

"airworthy" means the status of an aeroplane, engine, propeller or part when it conforms to its approved design and is in a condition for safe operation.

"alternate aerodrome" means an aerodrome to which an aeroplane may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing including the following—

(a) take-off alternate, that is to say, an alternate aerodrome at which an aeroplane can land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure;

(b) en-route alternate, that is to say, an alternate aerodrome at which an aeroplane would be able to land after experiencing an abnormal or emergency condition while en-route; or

(c) destination alternate, that is to say, an alternate aerodrome to which an aeroplane may proceed 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;

"appliance" means any instrument, mechanism, equipment, part, apparatus, appurtenance, or accessory, including communications equipment, that is used or intended to be used in operating or controlling an aeroplane in flight, is installed in or attached to the aeroplane, and is not part of an airframe, power plant, or propeller;

"approach procedure with vertical guidance (APV)" means a performance-based navigation (PBN) instrument approach procedure designed for 3D instrument approach operations Type A;

"appropriate airworthiness requirements" means the comprehensive and detailed airworthiness codes established, adopted or accepted by a contracting State for the class of aeroplane, 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;

"area navigation (RNAV)" means a method of navigation which permits aeroplane operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of both;

"automatic deployable flight recorder (ADFR)" means a combination flight recorder installed on an aeroplane which is capable of automatically deploying from the aeroplane;

"authorised instructor" means a person who—

(a) holds a valid ground instructor licence issued under the Civil Aviation (Personnel Licensing) Regulations, 2020 when conducting ground training;

(b) holds a current flight instructor rating issued under the Civil Aviation (Personnel Licensing) Regulations, 2020 when conducting ground training or flight training; or

(c) is authorised by the Authority to provide ground training or flight training under the Civil Aviation (Personnel Licensing) Regulations, 2020 and the Civil Aviation (Approved Training Organisations) Regulations, 2020;

"Authority" means the Uganda Civil Aviation Authority established by the Civil Aviation Authority Act, Cap. 354;

"cabin crew member" means a crew member who performs, in the interest of the safety of passengers, duties assigned by the operator or the pilot-in-command of the aeroplane, but who shall not act as a flight crew member.

"Category II (CAT II) operations" means a precision instrument approach and landing with a decision height lower than 60 metres (200 feet), but not lower than 30 metres (100 feet), and a runway visual range not less than 350 metres;

"Category IIIA (CAT IIIA) operations" means a precision instrument approach and landing with—

(a) a decision height lower than 30 metres (100 feet) or no decision height; and

(b) a runway visual range not less than 200 metres;

"Category IIIB (CAT IIIB) operations" means a precision instrument approach and landing with—

(a) a decision height lower than 15 metres (50 feet) or no decision height; and

(b) a runway visual range less than 200 metres but not less than 50 metres;

"Category IIIC (CAT IIIC) operations" means a precision instrument approach and landing with no decision height and no runway visual range limitations;

"check pilot" means a pilot approved by the Authority who has the appropriate training, experience, and demonstrated ability to evaluate and certify the knowledge and skills of other pilots;

"commercial air transport operation" means an aircraft operation involving the transport of passengers, cargo or mail for renumeration or higher;

"commercial material "COMAT" means operator material carried on an operator's aeroplane for the operator's own purposes;

"continuing airworthiness" means the set of processes by which an aeroplane, engine, propeller or part complies with the applicable airworthiness requirements and remains in a condition for safe operation throughout its operating life;

"continuing airworthiness records" means records which are related to the continuing airworthiness status of an aeroplane, engine, propeller or associated part;

"co-pilot" means a licensed pilot serving in any piloting capacity other than as a pilot-in-command (PIC) but excluding a pilot who is on board the aeroplane for the sole purpose of receiving flight instruction;

"corporate aviation operation" means the non commercial operation or use of an 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 employed to fly the aircraft;

"cruising level" means a level maintained during a significant portion of a flight;

"crew member" means a person assigned by an operator to duty on an aeroplane during a flight duty period;

"critical engine" means the engine whose failure would most adversely affect the performance or handling qualities of an aeroplane;

"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;

"dangerous goods" means articles or substances which are capable of posing a risk to health, safety, property or the environment and which are shown in the list of dangerous goods in the technical instructions or which are classified according to technical instructions;

"decision altitude (DA)" means a specified altitude or height in the precision approach or approach with vertical guidance at which a missed approach must be initiated if the required visual reference to continue the approach has not been established;

"duty" means any task that a flight or cabin crew member is required by the operator to perform, including flight duty, administrative work, training, positioning and standby when it is likely to induce fatigue;

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

"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 Authority;

"extended diversion time operations (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;

"extended diversion time operations (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;

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

"emergency locator transmitter (ELT)" means equipment which broadcast distinctive signals on designated frequencies and, depending on application, may be automatically activated by impact or be manually activated and an ELT may be any of the following—

(a) automatic fixed ELT (ELT(AF)), that is to say, an automatically activated ELT which is permanently attached to an aeroplane;

(b) automatic portable ELT (ELT(AP)), that is to say, an automatically activated ELT which is rigidly attached to an aeroplane but readily removable from the aeroplane;

(c) automatic deployable ELT (ELT(AD)), that is to say, an ELT which is rigidly attached to an aeroplane and which is automatically deployed and activated by impact, and, in some cases, also by hydrostatic sensors or manual deployment;

(d) survival ELT (ELT(S)), that is to say, an ELT which is removable from an aeroplane, stowed so as to facilitate its ready use in an emergency, and manually activated by survivors;

"engine" means a unit used or intended to be used for aeroplane propulsion and consists of at least those components and equipment necessary for functioning and control, but excludes the propeller or motors, if applicable;

"enhanced vision system (EVS)" means a system that displays electronic real-time images of the external scene achieved through the use of image sensors;

"estimated time of arrival" means for —

(a) instrument flight rules (IFR) flights, the time at which it is estimated that the aeroplane will 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 aerodrome, the time at which the aeroplane will arrive over the aerodrome;

(b) visual flight rules (VFR) flights, the time at which it is estimated that the aeroplane will arrive over the aerodrome;

"fatigue" means a physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness or physical activity that can impair a crew member's alertness and ability to safely operate an aeroplane or perform safety related duties;

"final approach segment" means that segment of an instrument approach procedure in which alignments and descents for landing are accomplished;

"flight crew member" means a licensed crew member charged with duties essential to the operation of an aeroplane during flight time;

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

"flight manual" means a manual, associated with the certificate of airworthiness, containing limitations within which the aeroplane is to be considered airworthy, and instructions and information necessary to the flight crew members for the safe operation of the aeroplane;

"flight operations officer" also referred to as "flight dispatcher" means a person designated by the operator to engage in the control and supervision of flight operations, whether licensed or not, and is suitably qualified in accordance with the Civil Aviation (Personnel Licensing) Regulations, who supports, briefs or assists the pilot-in-command in the safe conduct of the flight;

"flight plan" means specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aeroplane;

"flight recorder" means any type of recorder installed in the aircraft for the purpose of complimenting accidents or incidents investigation;

"flight time" means—

(a) for aeroplanes and gliders, the total time from the moment an aeroplane or a glider moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight and it is synonymous with the term "block to block" or "chock to chock" time in general usage which is measured from the time an aeroplane first moves for the purpose of taking off until it finally stops at the end of the flight;

(b) for helicopters, the total time from the moment a helicopter rotor blades start turning until the moment a helicopter comes to rest at the end of the flight and the rotor blades are stopped;

(c) for airships or free balloons, the total time from the moment an airship or free balloon first becomes detached from the surface until the moment when it next becomes attached thereto or comes to rest thereon;

"general aviation operation" means an aeroplane operation other than a commercial air transport operation or an aerial work operation;

"head-up display (HUD)" means a display system that presents flight information into the pilot's forward external field of view;

"heavier-than-air aeroplane" means any aeroplane deriving its lift in flight chiefly from aerodynamic forces;

"helicopter" means a heavier-than-air aeroplane supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axis;

"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;

"inspection" means the examination of an aeroplane or aeronautical product to establish conformity with a standard approved by the Authority;

"instrument approach operations" means an approach and landing using instruments for navigation guidance based on an instrument approach procedure.

"instrument approach procedure (IAP)" means a series of pre-determined 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 instrument approach procedures may be classified as follows—

(a) non-precision approach (NPA) procedure, that is to say, an instrument approach procedure designed for 2D instrument approach operations Type A;

(b) approach procedure with vertical guidance (APV), that is to say, a performance-based navigation (PBN) instrument approach procedure designed for 3D instrument approach operations Type A;

(c) precision approach (PA) procedure, that is to say, 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;

"isolated aerodrome" means a destination aerodrome for which there is no destination alternate aerodrome suitable for a given aeroplane type;

"journey log" means a form signed by the PIC 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;

"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 programme" means a document which describes the specific scheduled maintenance tasks and their frequency of completion and related procedures, such as a reliability programme, necessary for the safe operation of those aeroplane to which it applies;

"maintenance release" means a document which contains a certification confirming that the maintenance work to which it relates has been completed in a satisfactory manner in accordance with appropriate airworthiness requirements;

"manufacturer" means the contracting State which approved the original type certificate and any subsequent supplemental type certificates for an aeroplane, or which approved the design of an aeroplane, aeroplane component or appliance;

"master minimum equipment list (MMEL)" means a list established for a particular aeroplane type by the organisation responsible for the type design with the approval of the manufacturer containing items, one or more of which is permitted to be unserviceable on the commencement of a flight and the MMEL may be associated with special operating conditions, limitations or procedures;

"maximum mass" means maximum certificated take-off mass;

"minimum descent altitude (MDA) or minimum descent height (MDH)" means a specified altitude or height in a non-precision approach or circling approach 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 an aeroplane, subject to specific conditions, with particular equipment inoperative, prepared by an operator in conformity with, or more restrictive than, the MMEL established for a particular aeroplane type;

"modification" means a change to the type design of an aeroplane or aeronautical product which is not a repair;

"night" means the time between fifteen minutes after sunset and fifteen minutes before sunrise, sunrise and sunset being determined at surface level, and includes any time between sunset and sunrise when an unlighted aeroplane or other unlighted prominent object cannot clearly be seen at a distance of 4,572 m;

"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;

"operator" means a person, organisation or enterprise engaged in or offering to engage in an aeroplane operation;

"operating base" means the location from which operational control is exercised;

"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 aeroplane and the 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 aeroplane performance, other operating limitations, and relevant expected conditions on the route to be followed and at the aerodromes concerned;

"operations manual" means a manual containing procedures, instructions and guidance for use by operational personnel in the execution of their duties;

"operator's maintenance control manual" means a document which describes the operator's procedures necessary to ensure that all scheduled and unscheduled maintenance is performed on the operator's aeroplane on time and in a controlled and satisfactory manner;

"overhaul" means the restoration of an aeroplane or 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 manufacturer, 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);

"performance-based navigation (PBN)" means area navigation based on performance requirements for aeroplane operating along an ATS route, on an instrument approach procedure or in a designated airspace;

"pilot-in-command (PIC)" means the pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight;

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

"power plant" means an engine that is used or intended to be used for propelling aeroplane and includes turbo superchargers, appurtenances, and accessories necessary for its functioning, but does not include propellers;

"practical 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 synthetic flight trainer;

"precision approach (PA) procedure "means an instrument approach procedure based on navigation systems such as ILS, MLS, GLS and SBAS CAT I designed for 3D instrument approach operations Type A or B;

"pressure altitude" means an atmospheric pressure expressed in terms of altitude which corresponds to that pressure in the standard atmosphere;

"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; and

(b) causes or worsens an occupational, social, mental or physical problem or disorder;

"propeller" means a device for propelling an aeroplane that has blades on an engine 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 engines;

"psychoactive substances" means alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents excluding coffee and tobacco;

"rating" means an authorisation entered on or associated with a licence or certificate and forming part of the licence or certificate, stating special conditions, privileges or limitations pertaining to such licence or certificate except as used in 'engine thrust rating;

"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;

"runway surface condition" means the state of the surface of a runway, including —

(a) a contaminated runway, that is to say, a run way where more than 25 per cent of the runway surface area, whether in isolated areas or not, within the required length and width being used is covered by—

(i) water, or slush more than 3 millimetres (0.125 inches) deep;

(ii) loose snow more than 20 millimetres (0.75 inches) deep; or

(iii) compacted snow or ice, including wet ice;

(b) a dry runway, that is to say, a runway which is clear of contaminants and visible moisture within the required length and the width being used;

(c) a wet runway., that is to say, a runway that is neither dry nor contaminated;

"runway visual range (RVR)" means the range over which the pilot of an aeroplane on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line;

"reduced vertical separation minima (RVSM) airspace" means any airspace or route between flight level 290 and flight level 410 inclusive where the aeroplane are separated vertically by 1000ft (300m);

"safety management system" means a systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures;

"safety-sensitive personnel" means persons who might endanger aviation safety if they perform their duties and functions improperly including crew members, aeroplane maintenance personnel and air traffic controllers;

"serious injury" means an injury which is sustained by a person in an accident and which—

(a) requires hospitalisation for more than forty-eight 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 five percent of the body surface; or

(f) involves verified exposure to infectious substances or injurious radiation;

"small aeroplane" means an aeroplane having a maximum certified take-off mass of 5,700 kg (12,500 lbs) or less;

"special visual flight rules (VFR)" means a controlled VFR traffic authorised by air traffic control to operate within the control zone under meteorological conditions below the visual meteorological conditions or at night;

"State of the aerodrome" means the State in whose territory the aerodrome is located;

"State of Registry" means the State on whose register the aeroplane is entered;

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

"synthetic flight trainer" 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 cockpit of a particular aeroplane type to the extent that the mechanical, electrical, electronic, etc., aeroplane systems control functions, the normal environment of flight crew members, and the performance and flight characteristics of that type of aeroplane are realistically simulated;

(b) a flight procedures trainer, which provides a realistic cockpit environment, and which simulates instrument responses, simple control functions of mechanical, electrical, electronic, *etc*. aeroplane systems, and the performance and flight characteristics of aeroplane of a particular class;

(c) a basic instrument flight trainer, which is equipped with appropriate instruments, and which simulates the cockpit environment of an aeroplane in flight in instrument flight conditions;

"technical instructions" means the Technical Instructions for the Safe Transport of Dangerous Goods by Air approved and published by decision of the Council of the International Civil Aviation Organisation;

"threshold time" means the range, expressed in time, established by the Authority, to an en-route alternate aerodrome, whereby any time beyond requires an EDTO approval from the Authority.

"total vertical error (TVE)" means the vertical geometric difference between the actual pressure altitude flown by an aeroplane and its assigned pressure altitude or flight level;

"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 specialty curriculum; and

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

Part II — General Aviation Operations for Small Aeroplanes

4. Application of this Part

This Part applies to small aeroplanes.

5. Compliance with laws, regulations and procedures

(1) A pilot-in-command of a small aeroplane shall comply with the laws, regulations and procedures of any other State in which operations are conducted.

(2) A pilot-in-command of a small aeroplane shall be familiar with—

(a) the laws, regulations and procedures pertinent to the performance of his or her duties;

(b) the prescribed areas to be traversed;

(c) the aerodromes to be used and the air navigation facilities relating to the aerodromes.

(3) A pilot-in-command of a small aeroplane shall ensure that other members of the flight crew are familiar with such laws, regulations and procedures that are pertinent to the performance of their respective duties in the operation of the aeroplane.

(4) A pilot-in-command of a small aeroplane is responsible for operational control.

(5) Where an emergency situation which endangers the safety or security of an 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.

(6) Where required by the State in which an emergency situation arises as specified in subregualation (5), 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 the report to the State of Registry of the aeroplane.

(7) The reports referred to in subregulation (6) shall be submitted to the State in which the incident occurs and the State of Registry within ten days.

(8) A pilot-in-command of a small aeroplane shall have available on board the aeroplane the essential information concerning the search and rescue services in the area over which the aeroplane will be flown.

(9) A pilot-in-command of a small aeroplane shall ensure that flight crew members are able to speak and understand the language used for aeronautical radiotelephony communications as specified in the Civil Aviation (Personnel Licensing) Regulations, 2020.

(10) A pilot in command of a small aeroplane shall ensure that the aeroplane—

(a) has equipment and instrument; and

(b) has communication, navigation and surveillance equipment, specified in the Civil Aviation (Instruments and Equipment) Regulations, 2020.

6. Dangerous goods

(1) A pilot-in-command of a small aeroplane registered in Uganda shall not carry any dangerous goods unless —

(a) the Authority has granted to the operator a dangerous goods permit, subject to such conditions as the Authority considers fit; and

(b) such goods are carried or loaded as cargo in accordance with—

(i) the provisions approved by the Authority and any conditions to which such approval may be subject; and

(ii) in accordance with the Technical Instructions for the Safe Transport of Dangerous Goods by Air approved and published by the Authority in compliance with the decisions of the Council of the International Civil Aviation Organisation for the time being in force.

(2) An application for a dangerous goods permit shall—

(a) be submitted to the Authority for consideration before the proposed date of shipment; and

(b) contain the information required by the Authority; and

(c) be accompanied by the duly completed dangerous goods transport document.

(3) The Authority may issue a dangerous goods permit for the carriage of dangerous goods-

(a) for a single return flight which shall be referred to as an "ad hoc permit"; or

(b) for more than ten return flights over a period of 6 months which shall be referred to as a "block permit".

(4) Subregulations (1) and (2) shall not apply to the following dangerous goods that are carried in compliance with Technical Instructions —

(a) goods required to be aboard the aeroplane in accordance with the relevant airworthiness requirements and operating regulations or that are authorised by the Authority to meet special requirements;

(b) goods required to provide, during flight, medical aid to a patient;

(c) goods required to provide, during flight, veterinary aid or a humane killer for an animal;

(d) goods required to provide, during flight, aid in connection with search and rescue operations;

(e) goods permitted for carriage by passengers or crew members;

(f) goods intended for use or sale during the flight in question;

(g) vehicles carried in aeroplane designed or modified for vehicle ferry operations; or

(h) goods required for the propulsion of the means of transport or the operation of its specialised equipment during transport including refrigeration units or goods that are required in accordance with any operating regulations such as fire extinguishers.

7. Use of psychoactive substances

(1) A member of a flight crew shall not perform any function specified in the privileges applicable to the member's license if that member is under the influence of any psychoactive substance which may render the member unable to perform such functions in a safe and proper manner

(2) Safety-sensitive personnel shall not undertake any function while under the influence of any psychoactive substance, by reason of which human performance is impaired.

(3) A person shall not engage in any kind of problematic use of psychoactive substances.

8. Specific approval

(1) A pilot-in-command of a small aeroplane shall not conduct

operations for which a specific approval is required unless such approval has been issued by the Authority.

(2) Any specific approvals required to be obtained under subregulation (1) shall follow the layout and contain the information specified in Schedule 1.

Flight Operations

9. Operating facilities

A pilot-in-command of a small aeroplane shall ensure that a flight is not commenced unless he or she ascertains 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.

10. General operational management instructions

(1) Subject to subregulation (2), an aeroplane shall not be taxied on the movement area of an aerodrome unless the person at the controls—

(a) is an appropriately qualified pilot;

(b) has received instructions from a competent person with respect to aerodrome layout, and where appropriate, information on routes, signs, marking, lights, ATC signals and instructions, phraseology and procedures, and is able to conform to the operational standards required for safe aeroplane movement at the aerodrome.

(2) An aeroplane may be taxied by a person who-

(a) has been duly authorised by the owner or in the case where it is leased, the lessee, or a designated agent;

(b) is fully competent to taxi the aeroplane;

(c) is qualified to use the radio, if radio communications are required; and

(d) has received instructions from a competent person with respect to aerodrome layout, and where appropriate, information on routes, signs, marking, lights, ATC signals and instructions, phraseology and procedures, and is able to conform to the operational standards required for safe aeroplane movement at the aerodrome.

11. Aerodrome operating minima

(1) A pilot-in-command shall establish aerodrome operating minima in accordance with criteria specified by the Authority for each aerodrome to be used in operations, and such minima shall not be lower than any that may be established for such aerodromes by the State of the aerodrome except when specifically approved by that State.

(2) The Authority may approve operational credit for operations with aeroplanes equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, and such approvals shall not affect the classification of the instrument approach procedure.

(3) 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, that is to say, a minimum descent height or decision height at or above 75 metres (250 feet); and

(b) Type B, that is to say, a decision height below 75 metres (250 feet), where Type B instrument approach operations are categorised as follows—

(i) Category I (CAT I), that is to say, a decision height not lower than 60 metres (200 feet) and

with either a visibility not less than 800 metres or a runway visual range not less than 550 metres;

(ii) Category II (CAT II), that is to say, a decision height lower than 60 metres (200 feet) but not lower than 30 metres (100 feet) and a runway visual range not less than 300 metres;

(iii) Category IIIA (CAT IIIA), that is to say, a decision height lower than 30 metres (100 feet) or no decision height and a runway visual range not less than 175 metres;

(iv) Category IIIB (CAT IIIB), that is to say, a decision height lower than 15 metres (50 feet) or no decision height and a runway visual range less than 175 m but not less than 50 metres; and

(v) Category IIIC (CAT IIIC), that is to say, no decision height and no runway visual range limitations.

(4) 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, if necessary, cloud conditions.

(5) 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.

12. Passengers

(1) A pilot-in-command shall ensure that passengers are made familiar with the location and use of—

(a) the seat belts

(b) the emergency exits;

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

(d) the oxygen dispensing equipment if the use of oxygen is anticipated; and

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

(2) A 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 aeroplane are secured in their seats by means of the seat belts or harnesses provided.

13. Flight preparation

(1) A flight shall not be commenced until the pilot-in-command is satisfied that—

(a) the aeroplane is airworthy, duly registered and that appropriate certificates with respect to the aeroplane 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 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) A pilot-in-command 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 and intended take-off technique.

14. Flight planning

(1) Before commencing a flight, the pilot-in -command shall be 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 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.

15. Meteorological conditions for VFR Flights

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

16. IFR flights

(1) A flight to be conducted in accordance with the IFR 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 these Regulations, 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) The State of Registry shall establish criteria to be used for the estimated time of use of an aerodrome including a margin of time.

17. Flight in known icing conditions

(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, if necessary, has been given appropriate de-icing or anti-icing treatment.

(3) Accumulation of ice or other naturally occurring contaminants shall be removed so that the aeroplane is kept in an airworthy condition prior to take-off.

18. Destination alternate aerodromes

(1) For a flight to be conducted in accordance with the IFR, at least one destination alternate aerodrome shall be selected and specified in the 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; or

(b) the aerodrome of intended landing is isolated and a standard instrument approach procedure is prescribed for the aerodrome of intended landing and a point of no return has been determined; and a flight is not continued 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—

(i) a cloud base of at least 300 metres (1000 feet) above the minimum associated with the instrument approach procedure; and

(ii) visibility of at least 5.5 kilometres (3 NM) or of 4 kilometres (2 NM) more than the minimum associated with the instrument approach procedure.

19. Fuel and oil requirements

(1) A flight shall not be commenced unless, taking into account both the meteorological conditions and any delays that are expected in flight, the aeroplane 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 IFR and a destination alternate aerodrome is not required in accordance with these Regulations, 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 IFR 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 forty-five 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 thirty 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 forty-five 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.

20. Refuelling with passengers on board

(1) An aeroplane shall not be refuelled when passengers are embarking, on board or disembarking unless the refuelling is attended by the pilot-in-command or other qualified personnel and who shall be 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 communications shall be maintained by the aeroplane's intercommunication system or other suitable means between the ground crew supervising the refuelling and the pilot-in-command or other qualified personnel.

21. Oxygen supply

(1) A pilot-in-command 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) For the purposes of supplying sufficient oxygen, the pilot-in-command shall take into consideration the approximate altitudes in the Standard Atmosphere corresponding to the values of absolute pressure as follows-

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

22. In flight procedures for aerodrome operating minima

(1) A flight shall not be continued 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 these Regulations.

(2) An instrument approach shall not be continued below 300 metres (1000 feet) 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) If, after entering the final approach segment or after descending below 300 metres (1000 feet) above the aerodrome elevation, the reported visibility or controlling RVR falls below the specified minimum, the approach may be continued to the descent altitude (DA) or minimum descent altitude or height (MDA/H).

(4) Notwithstanding subregulation (3), an aeroplane shall not continue its approach to land beyond a point at which the limits of the aerodrome operating minima would be infringed.

23. Meteorological and operational observations by pilots

(1) Where meteorological or weather conditions likely to affect the safety of other aircraft are encountered, the pilot-in-command shall, as soon as possible, report the weather conditions to the nearest appropriate aeronautical station or any other appropriate authority.

(2) The pilot-in-command shall report runway braking action where the runway braking action encountered is not as good as given by the appropriate aeronautical station.

24. Hazardous flight conditions

(1) Hazardous flight conditions encountered, other than those associated with meteorological conditions, shall be reported to the appropriate aeronautical station as soon as possible.

(2) The reports referred to in subregulation (1) shall give such details as may be pertinent to the safety of other aircraft.

25. Flight crew members at duty stations

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

(2) During en-route phase of a flight, 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.

(4) Where safety harnesses are provided, any flight crew member occupying a pilot's seat shall keep the safety harness fastened during the take-off and landing phases.

(5) All 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 must remain fastened.

26. Aeroplane operating procedures for landing performance

An approach to land shall not be continued below 300 metres (1000 feet) 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.

27. Use of oxygen by flight crew members

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

28. Safeguarding of cabin crew and passengers in the event of loss of pressurisation

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

(2) Passengers shall be safeguarded by such devices or operational procedures as will ensure reasonable probability of their surviving the effects of hypoxia in the event of loss of pressurisation.

29. In-flight fuel management

(1) An operator shall establish policies and procedures to ensure that in-flight fuel checks and fuel management are performed.

(2) A 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) A pilot-in-command 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) A 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) For the purposes of subregulation (4), a 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.

(6) A declaration of "MINIMUM FUEL" does not qualify as an emergency situation but an indication that an emergency situation is possible should any additional delay occur.

(7) 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.

30. Instrument approach procedures

(1) One or more instrument approach procedures designed to support instrument approach operations shall be approved and promulgated by the State in which the aerodrome is located to serve each instrument runway or aerodrome utilised for instrument flight operations.

(2) An aeroplane operated in accordance with the IFR shall comply with the instrument approach procedures approved by the State in which the aerodrome is located.

31. Duties of pilot-in-command

(1) A pilot-in-command 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) A pilot-in-command shall be responsible for ensuring that a flight—

(a) shall not be commenced if 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) shall 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) A pilot-in-command 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.

32. Cabin baggage to be securely stowed

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

Aeroplane Performance Operating Limitations

33. General aeroplane performance operating limitations

(1) An aeroplane shall be operated-

(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 issued 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 operating limitations prescribed by the certificating authority of the State of Registry for visual presentation, shall be displayed in the aeroplane.

(3) A pilot-in-command shall determine that aeroplane performance will permit the take-off and departure to be carried out safely.

Aeroplane Continuing Airworthiness

34. Owner's continuing airworthiness responsibilities

(1) An owner of an aeroplane, or in the case where an aeroplane 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) An owner or the lessee of an aeroplane shall not operate the aeroplane unless the aeroplane is maintained and released to service under a system acceptable to the Authority.

(3) An owner or the lessee of an aeroplane shall not operate the aeroplane unless maintenance on the aeroplane, including any associated engine, propeller and part, is carried out—

(a) by an organisation complying with the airworthiness regulations that are either approved by the Authority or by another contracting State, and the organisation is acceptable 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.

(4) Where the maintenance release is not issued by an approved maintenance organisation in accordance with these Regulations, the person signing the maintenance release shall be licensed in accordance with the Civil Aviation (Personnel Licensing) Regulations, 2020.

(5) The owner or the lessee of an aeroplane shall ensure that the maintenance of the aeroplane is performed in accordance with a maintenance programme acceptable to the Authority.

35. Continuing airworthiness records

(1) An owner of an aeroplane, or in the case where the aeroplane is leased, the lessee, shall ensure that the following records are kept for the periods mentioned in these Regulations—

(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 applicable mandatory continuing airworthiness information;

(c) the 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 records required under subregulation (1) shall be kept —

(a) in the case of a unit which is permanently withdrawn, for a minimum period of one hundred eighty days after the unit to which the records refer has been permanently withdrawn; and

(b) in the case of a unit which is released after maintenance, for a minimum period for a minimum period of two 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 temporary change of ownership or lessee 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 permanent change of owner or lessee shall be made to the Authority.

(5) Records required to be kept or transferred in accordance with this regulation shall be maintained in a form and format that ensures readability, security and integrity of the records.

36. Modifications and repairs

(1) All modifications and repairs shall comply with airworthiness requirements acceptable to the Authority.

(2) An operator shall establish procedures to ensure that the substantiating data supporting compliance with airworthiness requirements are retained.

37. Maintenance release

(1) Where maintenance work has been completed, a maintenance release shall be completed and signed by the person carrying out the maintenance, to certify that the maintenance work has been performed satisfactorily and in accordance with data and procedures acceptable to the Authority.

(2) Where maintenance work 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 the Civil Aviation (Airworthiness) Regulations, 2020.

(3) A maintenance release shall contain a certification which shall include—

(a) the basic details of the maintenance performed;

(b) the date the maintenance was completed;

(c) where applicable, the identity of the approved maintenance organisation; and

(d) the identity of the authorised person or persons signing the maintenance release.

(4) Where 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, 2020 to certify that the maintenance work performed has been completed satisfactorily and in accordance with data and procedures acceptable to the Authority.

(5) Where maintenance work is not carried out by an approved maintenance organisation, the maintenance release shall include the following—

(a) the basic details of the maintenance work performed;

(b) the date the maintenance work was completed; and

(c) the identity of the authorised person or persons signing the release.

Aeroplane Flight Crew

38. Composition of flight crew

The number and composition of the flight crew shall not be less than that specified in the flight manual or other documents associated with the certificate of airworthiness.

39. Qualifications of crew members

(1) A pilot-in-command shall-

(a) ensure that each flight crew member holds a valid licence issued by the Authority or by another State, and if the licence is issued by another State, the licence is rendered valid by the Authority;

(b) ensure that flight crew members are properly rated; and

(c) be satisfied that flight crew members have maintained competency.

(2) A pilot-in-command of an aeroplane 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.

Manuals, Logs and Records

40. Flight manual

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

41. Journey logbook

(1) A journey logbook shall be maintained for every aeroplane engaged in air navigation in which shall be entered particulars of the aeroplane, its crew and each journey.

(2) An aeroplane journey logbook shall contain the following—

(a) the aeroplane nationality and registration;

(b) the date of the flight;

(c) the names of the crew members and their duty assignments;

(d) the departure and arrival points and times of the flight;

(e) the purpose of the flight;

(f) the observations regarding the flight; and

(g) the signature of the pilot-in-command.

42. Records of emergency and survival equipment

(1) The owner of an aeroplane, 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 aeroplane engaged in international air navigation.

(2) The information shall include, as applicable, the number, color and type of life rafts and pyrotechnics, details of emergency medical supplies, water supplies and the type and frequencies of the emergency portable radio equipment.

Security

43. Security of aeroplane

A pilot-in-command shall be responsible for the security of the aeroplane during its operation.

44. Reporting acts of unlawful interference

Where an act of unlawful interference occurs, the pilot-in-command shall submit a report of the act to the designated local authority.

Part III — General Aviation Operations for Large and Turbojet Aeroplanes

45. Application of Part

This Part applies to—

(a) general aviation operations for aeroplanes with a maximum certificated take-off mass exceeding 5700 kg;

(b) general aviation operations for aeroplanes equipped with one or more turbojet engines;

(c) general aviation operations for aeroplanes with a seating configuration of more than nine passenger seats;

(d) corporate aviation operation involving three or more aircraft that are operated by pilots employed for the purpose of flying the aeroplane.

46. Compliance with laws, regulations and procedures

(1) The operator an aeroplane shall ensure that all employees know that they must comply with the laws, regulations and procedures of those States in which operations of the aeroplane are conducted.

(2) The operator of an aeroplane 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 to the aerodromes.

(3) The operator of an aeroplane shall ensure that members of the flight crew are familiar with the laws, regulations and procedures that are pertinent to the performance of their respective duties in the operation of the aeroplane.

(4) A pilot-in-command of an aeroplane is responsible for operational control of the aeroplane.

(5) An operator shall ensure that the pilot-in-command of an aeroplane 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.

(6) An operator shall ensure that flight crew members able to speak and understand the language used for aeronautical radiotelephony communications as specified in Civil Aviation (Personnel Licensing) Regulations, 2020.

47. Safety management

(1) 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 according to the Civil Aviation (Aircraft Accidents and Incidents Investigations) Regulations, 2020 is prohibited, 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, 2020;

(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 the Civil Aviation (Safety Management) Regulations, 2020; or

(c) used for inspections of flight recorder systems.

(2) 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 according to the Civil Aviation (Aircraft Accidents and Incidents Investigations) Regulations, 2020 is prohibited, except where the recordings or transcripts are subject to the protections accorded by the Civil Aviation (Safety Management) Regulations, 2020 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.

Flight Operations

48. Operating facilities

An operator shall ensure that a flight is not be commenced unless the operator ascertains, 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.

49. Operational management

(1) Where an operator has an operating base in a State other than the State of Registry, the operator shall notify the State in which the operating base is located.

(2) Upon notification in accordance with subregulation (1), safety and security oversight shall be coordinated between the State in which the operating base is located.

50. Operations manual

(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 in the manual is kept up to date.

(3) All amendments or revisions referred to in subregulation (2) shall be issued to all personnel that are required to use the manual.

51. General operating instructions

(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) 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.

(3) The information referred to in subregulation (2) shall be included in the operations manual.

52. In-flight simulation of emergency situations

An operator shall not simulate emergency or abnormal situations where passengers are being carried on board the aeroplane.

53. Checklists

(1) Checklists shall be used by flight crews prior to, during and after all phases of operations, and in emergencies, 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 design and utilisation of checklists shall observe Human Factors principles.

54. Minimum flight altitudes

An operator shall specify, for flights which are to be conducted in accordance with the instrument flight rules, the method of establishing terrain clearance altitudes.

55. Aerodrome operating minima

(1) An operator shall establish aerodrome operating minima, in accordance with criteria specified by the Authority, for each aerodrome to be used in operations.

(2) Notwithstanding subregulation (1), the operating minima established 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

56. Fatigue management programme

(1) An operator shall establish and implement a fatigue management programme that ensures that all operator personnel involved in the operation and maintenance of an aeroplane do not carry out their duties when fatigued.

(2) The programme referred to in subregulation (1) shall address flight and duty times and be included in the operations manual.

57. Passengers

(1) An operator shall ensure that passengers are 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, if the provision of oxygen for the use of passengers is prescribed; and

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

(2) An operator shall ensure that all persons on board an aeroplane are aware 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 are secured in their seats by means of the seat belts or harnesses provided.

58. Flight preparation

(1) An operator shall develop procedures to ensure that a flight does not commence unless—

(a) the aeroplane is airworthy, duly registered and that appropriate certificates with respect to the aeroplane 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 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 on the aeroplane 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) An 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.

59. Operational flight planning

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 such procedures shall be included in the operations manual

60. Alternate aerodromes

(1) A take-off alternate aerodrome shall be selected and specified in the flight plan if either the meteorological conditions at the aerodrome of departure are below the applicable 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 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.

(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.

61. Fuel requirements

(1) An aeroplane shall carry a 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) if 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.

(3) 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.

(4) 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.

(c) contingency fuel, which shall be the amount of fuel required to compensate for unforeseen factors and shall be not 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 perform a missed approach at the destination aerodrome or climb to the expected cruising altitude or fly the expected routing or descend to the point where the expected approach is initiated; and 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—

(aa) 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

(ab) for a turbine-engined 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-engined aeroplane, the amount of fuel required to fly for 30 minutes at holding speed at 450 metres (1500 feet) 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.

(5) 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.

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

62. Additional requirements for operations beyond 60 minutes to an en-route alternate aerodrome

When conducting operations beyond 60 minutes from a point on a route to an en-route alternate aerodrome operators shall ensure that—

(a) en-route alternate aerodromes are identified; and

(b) the pilot-in-command has access to current information on the identified en-route alternate aerodromes, including operational status and meteorological conditions.

63. Refuelling with Passengers on board

(1) An aeroplane shall not be refuelled when passengers are embarking, on board or disembarking unless the aeroplane 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 refueling results in a mixture of aviation kerosene with other aviation turbine fuels, or when an open line is used.

64. Oxygen supply

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

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

(3) When an aeroplane is operated at flight altitudes at which the atmospheric pressure is less than 376 hPa, or which, if operated at flight altitudes at which the atmospheric. pressure is more than 376 hPa and cannot descend safely within four minutes to a flight

altitude at which the atmospheric pressure is equal to 620 hPa, there shall be no less than a 10-minute supply for the occupants of the passenger compartment.

65. In-flight procedures instrument approaches

An operator shall include, in the aircraft operating manual recommended in these Regulations, operating procedures for conducting instrument approaches.

66. Use of Oxygen

(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 is required.

(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.

67. Aeroplane operating procedures for noise abatement

(1) Aeroplane operating procedures for noise abatement shall comply with the provisions of the noise abatement procedures in the operations manual.

(2) Noise abatement procedures specified by the operator for any one aeroplane type shall be the same for all aerodromes.

68. Aeroplane operating procedures for rates of climb and descent

Unless otherwise specified in an air traffic control instruction, to avoid unnecessary airborne collision avoidance system (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 (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.

69. Aeroplane operating procedures for landing performance

An approach to land shall not be continued below 300 metres (1 000 feet) 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.

70. Duties of pilot-in-command

(1) A pilot-in-command shall ensure that the checklists specified in this Part are complied with.

(2) A pilot-in-command 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 a pilot-in-command is incapacitated the operator shall take over the duties of the pilot-in-command.

(4) A pilot-in-command shall be responsible for reporting, all known or suspected defects in the aeroplane, to the operator, at the termination of the flight.

(5) A pilot-in-command shall be responsible for the journey log book or the general declaration containing the information listed in regulation 41.

71. Securing cabin baggage for take-off and Landing

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.

72. General

For aeroplanes above 5700kg certificated between 13th June, 1960 and 2nd March, 2004 and aeroplanes certificated after 2nd March, 2004 for which airworthiness regulations are not applicable because of the exemption provided for; the Authority shall ensure that the level of performance specified in this Part are met as far as practicable.

73. Performance limitation of aeroplanes above 5700kg certificated between 13th June, 1960 and 2nd March, 2004 and aeroplanes certificated after 2nd March, 2004

(1) This regulation applies to large aeroplanes which were certificated between 13th June, 1960 and 2nd March, 2004 and those certificated after 2nd March, 2004.

(2) An aeroplane shall be operated in compliance with the terms of the certificate of airworthiness of that aeroplane and within the approved operating limitations contained in the flight manual of that aeroplane.

(3) The Authority shall take such precautions as are reasonably possible to ensure that the general level of safety contemplated by these Regulations is maintained under all expected operating conditions, including those not covered specifically by this regulation.

(4) A flight shall not be commenced unless the performance information provided in the flight manual indicates that the provisions of this regulation can be complied with for the flight to be undertaken.

(5) In applying this regulation, account shall be taken of all factors that significantly affect the performance of an aeroplane such as mass, operating procedures, the pressure altitude appropriate to the elevation of the aerodrome, temperature, wind, runway gradient and condition of runway, including presence of slush, water or ice, for landplanes, water surface condition for seaplanes.

(6) The factors referred to in subregulation (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.

(7) In applying this regulation, account shall be taken of all factors that significantly affect the performance of the aeroplane such as mass, operating procedures, the pressure altitude appropriate to the elevation of the aerodrome, runway slope, the ambient temperature, wind, and surface conditions of the runway at the expected time of use, including presence of slush, water or ice, for landplanes, water surface condition for seaplanes.

(8) The factors referred to in subregulation (7) 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.

74. Mass limitations

(1) The mass of an aeroplane at the start of take-off shall not exceed the mass at which the requirements of this regulation are complied with, allowing for expected reductions in mass as the flight proceeds, and for such fuel jettisoning as is envisaged and, in respect of alternate aerodromes.

(2) The mass of an 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 estimated mass of an aeroplane 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 if used as a parameter to determine the maximum landing mass, any other local atmospheric condition.

(4) The mass of an aeroplane 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 regulations, 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.

(5) An aeroplane shall be 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 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 this regulation.

(6) In determining the length of the runway available, account shall be taken of the loss, if any, of runway length due to alignment of the aeroplane prior to take-off.

(7) An aeroplane shall 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 this regulation can be met, without flying below the minimum obstacle clearance altitude at any point.

(8) An aeroplane shall, 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 the aeroplane can come to a stop or, for a seaplane, to a satisfactorily low speed, within the landing distance available.

(9) For the purposes of subregulation (8), 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.

Part V — Aeroplane Continuing Airworthiness

75. Operator's continuing airworthiness responsibilities

(1) An operator shall comply with the requirements of regulation 34.

(2) An 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.

76. Operator's maintenance control manual

(1) An operator shall provide a maintenance control manual as specified in regulation 87, for the use and guidance of maintenance and operations personnel.

(2) The operator shall ensure that the design of the manual observes the human factors principles.

77. Maintenance programme

(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 regulation 88.

(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 is issued.

78. Continuing airworthiness information

The operator of an aeroplane shall, as prescribed by the Authority, ensure that the information resulting from maintenance and operational experience with respect to continuing airworthiness, is transmitted as required by the Civil Aviation (Airworthiness) regulations, 2020.

79. Corporate maintenance release

An operator shall comply with the requirements of maintenance release as prescribed in regulation 37.

Part VI — Aeroplane Flight Crew

80. Composition of flight crew

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

(2) 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.

81. Flight crew member emergency duties

(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 subregulation (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.

82. Flight crew member training programmes

(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 the training programmes in the company operations manual.

(3) A training programme shall include training to competency for all equipment installed.

(4) Flight simulators shall be used to the maximum extent practicable for initial and bi-annual recurrent training.

83. Flight crew members to be licenced and competent

(1) An operator shall—

(a) ensure that each flight crew member holds a valid licence issued by the Authority or by another State, and if the licence is issued by another State, the licence is rendered valid by the Authority;

(b) ensure that flight crew members are properly rated; and

(c) ensure that flight crew members are competent to carry out assigned duties.

(2) The operator of an aeroplane equipped with an airborne collision avoidance system (ACAS II) shall ensure that each flight crew member is appropriately trained to competency in the use of ACAS II equipment and the avoidance of collisions.

84. Recent experience

(1) The operator shall not assign a pilot to act as pilot-in - command of an aeroplane unless that pilot has made at least three take-offs and landings within the preceding ninety 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 ninety days on the same type of aeroplane or in a flight simulator approved for the purpose.

85. Pilot proficiency checks

(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 number of times of the checks referred to in subregulation (2) is dependent upon the complexity of both the aeroplane and the operation but, in any case, no longer than six months.

Part VII— Flight Operations Officer/Flight Dispatcher

86. Flight operations officer

An operator shall ensure that any person assigned as a flight operations officer or 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 principle.

87. Operator's Maintenance Control Manual

The operator's maintenance control manual provided in accordance with Regulation 76, 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 under regulation 77;

(b) the means of recording the names and duties of the person or persons required under regulation 77;

(c) the maintenance programme required under regulation 77;

(d) the methods used for the completion and retention of the operator's maintenance records required under regulation 80;

(e) the methods used for the completion and retention of the operator's continuing airworthiness records required under regulation 78;

(f) the procedures for complying with the service information reporting requirements of the Civil Aviation (Airworthiness) Regulations, 2020;

(g) the procedures for implementing action resulting from mandatory continuing airworthiness information;

(h) 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;

(i) the aircraft types and models to which the manual applies;

(j) the procedures for ensuring that unserviceability's affecting airworthiness are recorded and rectified; and

(k) procedures for advising the State of Registry of significant in-service occurrences.

88. Maintenance programme

(1) A maintenance programme for each aeroplane as required by under regulation 77 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) when applicable, a continuing structural integrity programme;

(c) procedures for changing or deviating from subregulation paragraphs (a) and (b) as approved by the State of Registry; and

(d) when 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 organisation responsible for the type design, and any additional applicable experience.

89. Flight Recorder Records

An owner of the 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, if 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, 2020.

90. Cabin crew assignment of emergency duties

The requirement for cabin crew for each type of aeroplane shall be determined by the operator, 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.

91. Cabin crew at emergency evacuation stations

Where applicable, each cabin crew member assigned to emergency evacuation duties shall occupy a seat provided in accordance with Civil Aviation (Instruments and Equipment) Regulations, 2020 during take-off and landing and whenever the pilot-in-command so directs.

92. Protection of cabin crew during flight

Each cabin crew member shall be seated with seatbelt or, when provided, safety harness fastened during take-off and landing and whenever the pilot-in-command so directs.

93. Cabin Crew training

(1) An operator shall ensure that a training programme is completed by all persons before being assigned as cabin crew members.

(2) 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 the operator shall include or make reference to a syllabus for the training programme in the company operations manual.

(3) The training programme shall include human factors principles.

94. Security Programme

the Authority shall ensure that each entity conducting general aviation operations, including corporate operator aviation operations, using aeroplane with a maximum take-off mass greater than 5 700 kg, establishes, implements and maintains a written operator security programme that meets the requirements of the national civil aviation security programme of Uganda.

95. Reporting acts of unlawful interference

Following an act of unlawful interference, the pilot-in-command shall submit a report of such an act to the designated local authority.

96. Lights to be displayed

The provisions of schedule 2 to these Regulations apply to lights that shall be displayed on aeroplanes.

97. System performance requirements

The altimetry system performance requirements are specified in schedule 3 to these Regulations.

98. Flight recorders

The provisions of schedule 4 to these Regulations apply to flight recorders intended for installation in aeroplanes engaged in international air navigation.

SCHEDULE 1

Regulation 8(2)

FORMAT OF SPECIFIC APPROVALS

2. SPECIFIC APPROVAL TEMPLATE

SPECIFIC APPROVAL

ISSUING AUTHORITY and CONTACT DETAILS[1]

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	☐	☐	CAT[6]: _____ RVR: _____ m DH: _____ ft	
Take-off	☐	☐	RVR[7]: _____ m	
Operational credit(s)	☐	☐	[8]	
RVSM	☐	☐		
AR navigation specifications for PBN operations	☐	☐	[9]	
Other [10]	☐	☐		

Notes.—

1. *CivilAaviationAauthority 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 approval or the approval type (with appropriate criteria).*
6. *Insert the applicable precision approach category (CAT II, IIIA, IIIB or IIIC). 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. 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. *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, MNPS).*

SCHEDULE 2

Regulation 96

LIGHTS TO BE DISPLAYED BY AEROPLANES

1. 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.

2. 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.

3. Angle of coverage L is formed by two intersecting vertical planes, one parallel to the longitudinal axis of the aero plane, and the other 110 degrees to the left of the first, when looking forward along the longitudinal axis.

4. 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.

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

6. Longitudinal axis of the aero plane. A selected axis parallel to the direction of flight at a normal cruising speed, and passing through the center of gravity of the aeroplane.

7. 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.

8. Under command. An aeroplane on the surface of the water is "under command" when it is able to execute maneuvers as required by

the International Regulations for Preventing Collisions at Sea for the purpose of avoiding other vessels.

9. 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.

10. Vertical planes. Planes perpendicular to the horizontal plane.

11. Visible. Visible on a dark night with a clear atmosphere.

NAVIGATION LIGHTS TO BE DISPLAYED IN THE AIR

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.

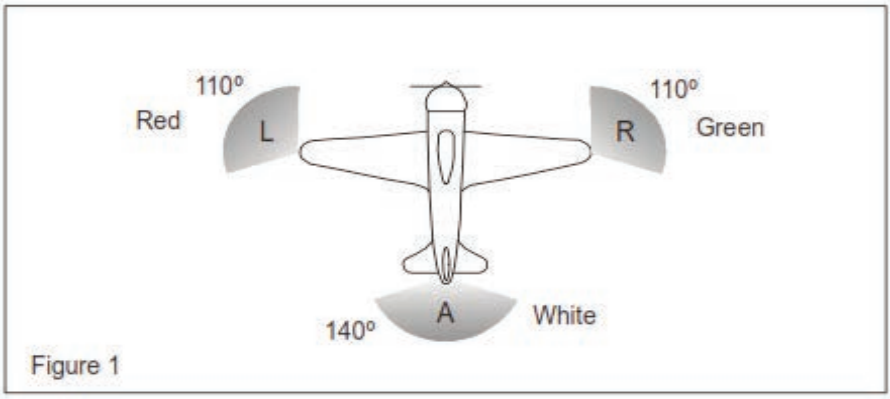


Figure 1

LIGHTS TO BE DISPLAYED ON THE WATER

General

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 aero plane;

(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.

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 kilometres (5 NM) when fitted to an aeroplane of 20 metres or more in

length or visible at a distance of 5.6 kilometres (3 NM) when fitted to an aeroplane of less than 20 metres in length.

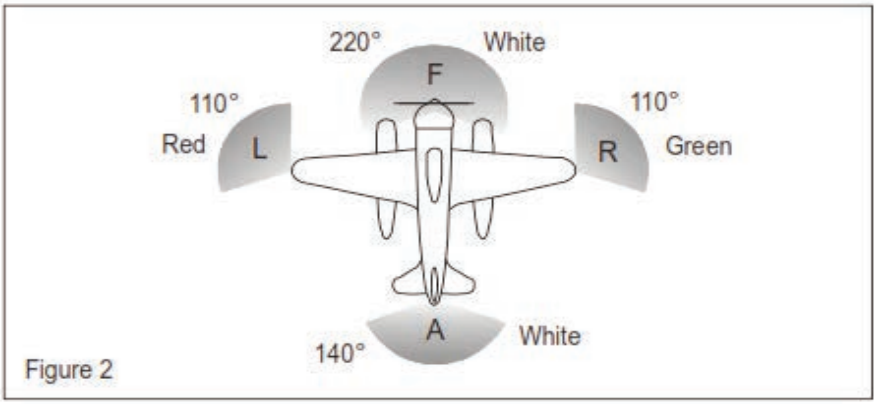


Figure 2

When towing another vessel or aero plane

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.

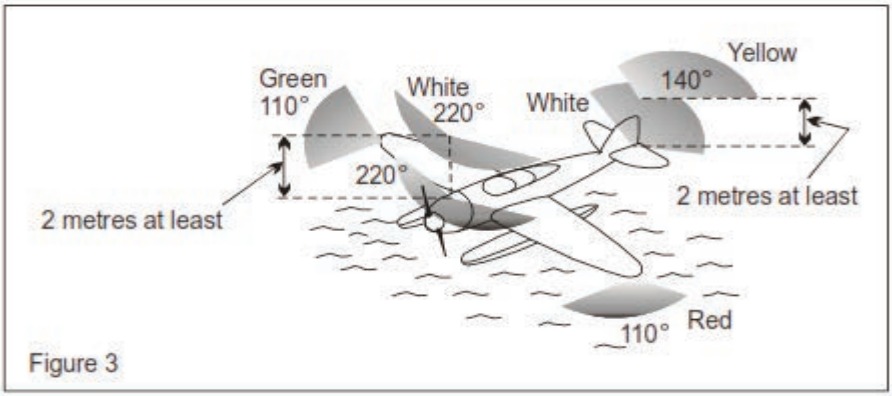


Figure 3

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).

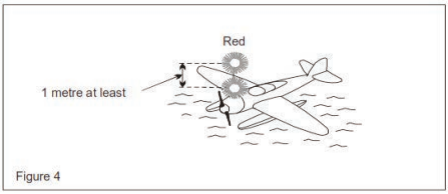


Figure 4

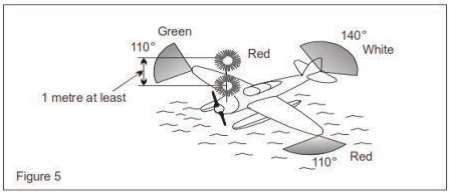


Figure 5

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).

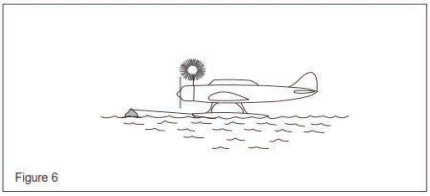


Figure 6

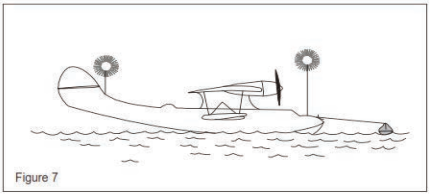
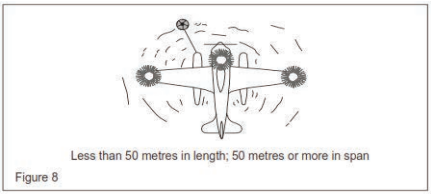
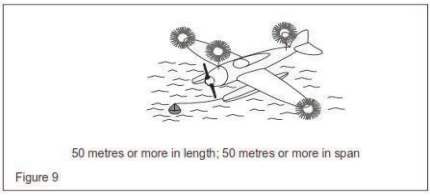


Figure 7



Less than 50 metres in length; 50 metres or more in span

Figure 8



50 metres or more in length; 50 metres or more in span

Figure 9

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.

SCHEDULE 3

Regulation 97

ALTIMETRY SYSTEM PERFORMANCE REQUIREMENTS FOR OPERATIONS IN REDUCED VERTICAL SEPARATION MINIMA 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 $28 - 0.013z2$ for $0 \leq z \leq 25$ when z is the magnitude of the mean TVE in meters, or $92 - 0.004z2$ 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.

SCHEDULE 4

Regulation 98

FLIGHT RECORDERS

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

— a flight data recorder (FDR),

— a cockpit voice recorder (CVR),

— an airborne image recorder (AIR),

— a data link recorder (DLR).

Lightweight flight recorders comprise one or more of the following systems:

— an aeroplane data recording system (ADRS),

— a cockpit audio recording system (CARS),

— an airborne image recording system (AIRS),

— a data link recording system (DLRS).

1. GENERAL REQUIREMENTS

(1) Non-deployable flight recorder containers shall be painted a distinctive orange colour.

(2) Non-deployable crash-protected flight recorder containers shall—

(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.

(3) Automatic deployable flight recorder containers shall:

(a) be painted a distinctive orange colour, however the surface

visible from outside the aeroplane may be of another colour;

(b) carry reflective material to facilitate their location; and

(c) have an integrated automatically activated ELT.

(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.

(5) The flight recorder systems shall be installed so that they receive electrical power from a bus that provides the maximum reliability for operation of the flight recorder systems without jeopardizing service to essential or emergency loads.

(6) 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.

(7) Means shall be provided for an accurate time correlation between the recorder systems recordings.

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 AEROPLANE DATA RECORDING SYSTEM (ADRS)

2.1 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.

2.2 Parameters to be recorded

2.2.1 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.

2.2.2 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 aeroplane monitor (ECAM) and engine indication and crew alerting system (EICAS). Use the following order of priority:

(i) parameters selected by the flight crew relating to the desired flight path, e.g. barometric pressure setting, selected altitude, selected airspeed, decision height, and auto flight system engagement and mode indications if not recorded from another source;

(ii) display system selection/status, e.g. SECTOR, PLAN, ROSE, NAV, WXR, COMPOSITE, COPY;

(iii) warnings and alerts; and

(iv) 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 pilotare 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—

(a) Pressure altitude

(b) Indicated airspeed or calibrated airspeed

(c) Heading (primary flight crew reference)

(d) Pitch attitude

(e) Roll attitude

(f) Engine thrust/power

(g) Landing gear status*

(h) Total or outside air temperature*

(i) Time*

(j) Navigation data*: Drift angle, wind speed, wind direction, latitude/longitude

(k) Radio altitude*

2.2.4 The parameters that satisfy the requirements for ADRS are listed in Table A2.3-3.

2.3 Additional information

2.3.1 The measurement range, recording interval and accuracy of parameters on installed equipment shall be verified by methods approved by the appropriate certificating authority.

2.3.2 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 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.

3.2 Signals to be recorded

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

(a) voice communication transmitted from or received in the aeroplane 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.

3.2.2 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.

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

(a) voice communication transmitted from or received in the aeroplane 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.

3.2.4 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 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.

4.2 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.

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)

5.1 Applications to be recorded

5.1.1 Where the aeroplane flight path is authorised or controlled through the use of data link messages, all data link messages, both uplinks (to the aeroplane) and downlinks (from the aeroplane), shall be recorded on the aeroplane. As far as practicable, the time the messages were displayed to the flight crew and the time of the responses shall be recorded.

5.1.2 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.

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 analysis of the FDR or ADRS recording shall evaluate the quality of the recorded data to determine if the bit error rate (including those errors introduced by recorder, the acquisition unit, the source of the data on the aeroplane and by the tools used to extract the data from the recorder) is within acceptable limits and to determine the nature and distribution of the errors;

(c) 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 aeroplane's electrical bus system need not be checked if their serviceability can be detected by other aeroplane systems;

(d) 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;

(e) 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 aeroplane, the CVR or CARS shall record test signals from each aeroplane source and from relevant external sources to ensure that all required signals meet intelligibility standards;

(f) 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

(g) 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 aeroplane, the AIR or AIRS shall record test images from each aeroplane source and from relevant external sources to ensure that all required images meet recording quality standards.

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 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

Serial number	Parameter	Applicability	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
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
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)

Serial number	Parameter	Applicability	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
21*	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 (terrain alerts, both cautions and warnings, and advisories) and (on/off switch position)		Discrete	1		
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

Serial number	Parameter	Applicability	Measurement range	Maximum sampling and recording interval (seconds)	Accuracy limits (sensor input compared to FDR readout)	Recording resolution
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, discretes 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 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) (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	

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.—

1. V_{s_0} *stalling speed or minimum steady flight speed in the landing configuration is in Section "Abbreviations and Symbols".*

2. V_D *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 Appendix.*

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:					
1	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 altitude 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°	
	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	

No.	Parameter name	Minimum recording range	Maximum recording interval in seconds	Minimum recording accuracy	Minimum recording resolution	Remarks
	c) 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
	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	

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
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 aeroplane 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 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:					
1	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 altitude 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°	
	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	

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	

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/Np 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 (Ng)	0–150%	Each engine each second	As installed	0.2% of full range	
18	Free power turbine speed (Nf)	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	

Cross Reference

The Civil Aviation (Personnel Licensing) Regulations, 2020
The Civil Aviation (Approved Training Organisations) Regulations, 2020
The Civil Aviation (Instruments and Equipment) Regulations, 2020
The Civil Aviation (airworthiness) Regulations, 2020
The Civil Aviation (Safety Management) Regulations, 2020
The Civil Aviation (Aircraft Accidents and Incidents Investigations) Regulations, 2020

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