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MCAR -Air Operations

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Maldives Civil Aviation Authority
Republic of Maldives

Maldivian Civil Aviation Regulations

MCAR-Air Operations

Issue 6.00, 07 May 2025

Foreword

Maldives Civil Aviation Authority, in exercise of the powers conferred on it under Articles 5 and 6 of the Maldives Civil Aviation Authority Act 2/2012 has adopted this Regulation.

This Regulation shall be cited as MCAR-Air Operations and shall come into force on 07 May 2025.

Existing operators shall comply with this regulation in accordance with an implementation plan submitted to CAA no later than 30th October 2025 and shall be in full compliance with the regulations before 31st December 2025.

By way of derogation from the second subparagraph, the following provisions shall apply from 31 December 2027.
1. ERO.GEN.110 (2) and (3)

Organisation and personnel involved in the operation of certain aircraft shall comply with the relevant essential requirements set out in this Regulation and the following regulations as applicable;

1. MCAR-ORO (Organisation Requirements for Air Operations)
2. MCAR-CAT (Commercial Air Transport Operation)
3. MCAR-SPA (Specific Approvals for Air Operations)
4. MCAR-NCC (Non-Commercial Air Operations with Complex Motor-powered Aircraft)
5. MCAR-NCO (Non-Commercial Air Operations with Other-than-complex Motor-powered aircraft)
6. MCAR-SPO (Specialised Operations)
7. MCAR-ARO (Authority Requirements for Air Operations)

Definitions of the terms and abbreviations used in this regulation, unless the context requires otherwise, are in MCAR-1 Definitions and Abbreviations.

'Acceptable Means of Compliance' (AMC) illustrate a means, or several alternative means, but not necessarily the only possible means by which a requirement can be met.

'Guidance Material' (GM) helps to illustrate the meaning of a requirement.

List of Amendments

Rev #	Date	Remarks
Issue 1 Amendment 0	2015-01-01	Initial issue.
Issue 2 Amendment 0	2016-03-31	Published on CAA website.
Issue 3 Amendment 0	2017-03-31	Published on CAA website.
Issue 4.00	2020-01-05	Incorporation of Reg. (EU) 2017/363.
Issue 5.00	2021-08-19	Incorporation of Reg. (EU) 2018/1042, Reg. (EU) 2018/394, Reg. (EU) 2018/1975, Reg. (EU) 2019/1384 and Reg. (EU) 2019/1387.
Issue 6.00	2025-05-07	Incorporation of Reg. (EU) 2020/745, Reg. (EU) 2020/1176, Reg. (EU) 2020/2036, Reg. (EU) 2021/1296, Reg. (EU) 2021/2237, Reg. (EU) 2022/2203, Reg. (EU) 2023/1020.

List of Effective Pages

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ERO	Essential Requirements for Air Operations	55-75	6.00	07 May 2025

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Part DEF - Definitions for terms used in MCARs

For the purpose of this Regulation, the following definitions shall apply:

(1) accelerate-stop distance available (ASDA) means the length of the take-off run available plus the length of stopway, if such stopway is declared available by the State of the aerodrome and is capable of bearing the mass of the aeroplane under the prevailing operating conditions;

(2) acceptable means of compliance (AMC) means non-binding standards adopted by the CAA to illustrate means to establish compliance with this Regulation and its Implementing Rules;

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

(4) adequate aerodrome means an aerodrome on which the aircraft can be operated, taking account of the applicable performance requirements and runway characteristics;

(5) For the purpose of passenger classification:

- **(a) adult** means a person of an age of 12 years and above;
- **(b) child/children** means persons who are of an age of two years and above but who are less than 12 years of age;
- **(c) infant** means a person under the age of two years;

(6) aerodrome operating minima means the limits of usability of an aerodrome for:

- **(a)** take-off, expressed in terms of runway visual range (RVR) and/or visibility and, if necessary, ceiling;
- **(b)** landing in 2D instrument approach operations, expressed in terms of visibility and/or RVR, minimum descent altitude/height (MDA/H) and, if necessary, ceiling;
- **(c)** landing in 3D instrument approach operations, expressed in terms of visibility and/or RVR and decision altitude/height (DA/H) as appropriate to the type and/or category of the operation;

(7) aided night vision imaging system (NVIS) flight means, in the case of NVIS operations, that portion of a visual flight rules (VFR) flight performed at night when a crew member is using night vision goggles (NVG);

(8) aircraft means a machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface;

(8a) aircraft tracking means a ground based process that maintains and updates, at standardised intervals, a record of the four dimensional position of individual aircraft in flight;

(8b) aircraft tracking system means a system that relies on aircraft tracking in order to identify abnormal flight behaviour and provide alert;

(8c) alternate aerodrome means an adequate aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or land at the aerodrome of intended landing,

where the necessary services and facilities are available, where aircraft performance requirements can be met, and which is operational at the expected time of use. 'Alternate aerodrome' includes the following:

- **(a) take-off alternate aerodrome**: an alternate aerodrome at which an aircraft would be able to land if it becomes necessary shortly after take-off and it is not possible to use the aerodrome of departure;
- **(b) en route alternate (ERA) aerodrome**: an alternate aerodrome at which an aircraft would be able to land if a diversion becomes necessary while en route;
- **(c) fuel/energy en route alternate (fuel/energy ERA) aerodrome** means an ERA aerodrome that is required at the planning stage for use in the calculation of fuel/energy;
- **(d) destination alternate aerodrome**: an alternate aerodrome at which an aircraft would be able to land if it becomes either impossible or inadvisable to land at the aerodrome of intended landing;

(8d) air taxi operation means, for the purpose of flight time and duty time limitations, non-scheduled on demand commercial air transport operations with an aeroplane with a maximum operational passenger seating configuration (MOPSC) of 19 or less;

(9) alternative means of compliance means those means that propose an alternative to an existing acceptable means of compliance or those that propose new means to establish compliance with this Regulation and its Implementing Rules for which no associated AMC have been adopted by the CAA;

(10) anti-icing, in the case of ground procedures, means a procedure that provides protection against the formation of frost or ice and accumulation of snow on treated surfaces of the aircraft for a limited period of time (hold-over time);

(11) *(Reserved)*

(11a) *(Reserved)*

(12) cabin crew member means an appropriately qualified crew member, other than a flight crew or technical crew member, who is assigned by an operator to perform duties related to the safety of passengers and flight during operations;

(13) *(Reserved)*

(14) *(Reserved)*

(15) *(Reserved)*

(16) *(Reserved)*

(17) category A with respect to helicopters means a multi-engined helicopter designed with engine and system isolation features specified in the applicable certification specification and capable of operations using take-off and landing data scheduled under a critical engine failure concept that assures adequate designated surface area and adequate performance capability for continued safe flight or safe rejected take-off in the event of engine failure;

(18) category B with respect to helicopters means a single-engined or multi-engined helicopter that does not meet category A standards. Category B helicopters have no guaranteed capability to continue safe flight in the event of an engine failure, and unscheduled landing is assumed;

(18a) ceiling means the height above the ground or water of the base of the lowest layer of cloud below 6 000 m (20 000 ft) covering more than half the sky;

(19) certification specifications (CS) means technical standards adopted by the CAA indicating means to show compliance with this Regulation and its Implementing Rules and which can be used by an organisation for the purpose of certification;

(20) circling means the visual phase of a circling approach operation;

(20a) circling approach operation means a Type A instrument approach operation to bring an aircraft into position for landing on a runway/final approach and take-off area (FATO) that is not suitably located for a straight-in approach;

(21) clearway means a defined rectangular area on the ground or water under the control of the appropriate authority, selected or prepared as a suitable area over which an aeroplane may make a portion of its initial climb to a specified height;

(22) cloud base means the height of the base of the lowest observed or forecast cloud element in the vicinity of an aerodrome or operating site or within a specified area of operations, normally measured above aerodrome elevation or, in the case of offshore operations, above mean sea level;

(22a) cockpit voice recorder (CVR) means a crash-protected flight recorder that uses a combination of microphones and other audio and digital inputs to collect and record the aural environment of the flight crew compartment and communications to, from and between the flight crew members;

(23) code share means an arrangement under which an operator places its designator code on a flight operated by another operator, and sells and issues tickets for that flight;

(23a) competency means a dimension of human performance that is used to reliably predict successful performance on the job and which is manifested and observed through behaviours that mobilise the relevant knowledge, skills and attitudes to carry out activities or tasks under specified conditions;

(23b) competency-based training means assessment and training programmes that are characterised by a performance orientation, emphasis on standards of performance and their measurement and the development of training to the specified performance standards;

(23c) competency framework means a complete set of identified competencies that are developed, trained and assessed in the operator's evidence-based training programme utilising scenarios that are relevant to operations and which is wide enough to prepare the pilot for both foreseen and unforeseen threats and errors;

(23d.M) commercial operation shall mean any operation of an aircraft, in return for remuneration or other valuable consideration, which is available to the public or, when not made available to the public, which is performed under a contract between an operator and a customer, where the latter has no control over the operator;

(23e.M) complex motor-powered aircraft shall mean:

- **(i)** an aeroplane:
    - with a maximum certificated take-off mass exceeding 5 700 kg, or
    - certificated for a maximum passenger seating configuration of more than nineteen, or
    - certificated for operation with a minimum crew of at least two pilots, or
    - equipped with (a) turbojet engine(s) or more than one turboprop engine, or
- **(ii)** a helicopter certificated:
    - for a maximum take-off mass exceeding 3 175 kg, or
    - for a maximum passenger seating configuration of more than nine, or
    - for operation with a minimum crew of at least two pilots, or
- **(iii)** a tilt rotor aircraft;

(24) congested area means in relation to a city, town or settlement, any area which is substantially used for residential, commercial or recreational purposes;

(25) contaminated runway means a runway of which a significant portion of its surface area (whether in isolated areas or not) within the length and width being used is covered by one or more of the substances listed under the runway surface condition descriptors;

(26) contingency fuel/energy means the fuel/energy required to compensate for unforeseen factors that could have an influence on the fuel/energy consumption to the destination aerodrome;

(27) continuous descent final approach (CDFA) means a technique, consistent with stabilised approach procedures, for flying the final approach segment (FAS) of an instrument non-precision approach (NPA) procedure as a continuous descent, without level-off, from an altitude/height at or above the final approach fix altitude/height:

- **(a)** for straight-in approach operations, to a point approximately 15 m (50 ft) above the landing runway threshold or the point where the flare manoeuvre begins; or
- **(b)** for circling approach operations, until MDA/H or visual flight manoeuvre altitude/height is reached;

(28) converted meteorological visibility (CMV) means a value, equivalent to an RVR, which is derived from the reported meteorological visibility;

(29) crew member means a person assigned by an operator to perform duties on board an aircraft;

(30) critical phases of flight in the case of aeroplanes means the take-off run, the take-off flight path, the final approach, the missed approach, the landing, including the landing roll, and any other phases of flight as determined by the pilot-in-command or commander;

(31) critical phases of flight in the case of helicopters means taxiing, hovering, take-off, final approach, missed approach, the landing and any other phases of flight as determined by the pilot-in-command or commander;

(31a) current fuel/energy scheme means the approved fuel/energy scheme that is currently used by the operator;

(32) *(Reserved)*

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

(34) dangerous goods accident means an occurrence associated with and related to the transport of dangerous goods by air which results in fatal or serious injury to a person or major property damage;

(35) dangerous goods incident means:

- **(a)** an occurrence other than a dangerous goods accident associated with and related to the transport of dangerous goods by air, not necessarily occurring on board an aircraft, which results in injury to a person, property damage, fire, breakage, spillage, leakage of fluid or radiation or other evidence that the integrity of the packaging has not been maintained;
- **(b)** any occurrence relating to the transport of dangerous goods which seriously jeopardises an aircraft or its occupants;

(35a) decision altitude (DA) or decision height (DH) means a specified altitude or height in a 3D instrument approach operation at which a missed approach procedure must be initiated if the required visual reference to continue the approach has not been established;

(36) de-icing, in the case of ground procedures, means a procedure by which frost, ice, snow or slush is removed from an aircraft in order to provide uncontaminated surfaces;

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

(38) defined point before landing (DPBL) means the point within the approach and landing phase, after which the helicopter's ability to continue the flight safely, with the critical engine inoperative, is not assured and a forced landing may be required;

(39) distance DR means the horizontal distance that the helicopter has travelled from the end of the take-off distance available;

(40) dry lease agreement means an agreement between undertakings pursuant to which the aircraft is operated under the air operator certificate (AOC) of the lessee or, in the case of commercial operations other than CAT, under the responsibility of the lessee;

(41) dry operating mass means the total mass of the aircraft ready for a specific type of operation, excluding usable fuel and traffic load;

(42) dry runway means a runway whose surface is free of visible moisture and not contaminated within the area intended to be used;

(42a) EFB application means a software application installed on an EFB host platform that provides one or more specific operational functions which support flight operations;

(42b) EFB host platform means the hardware equipment in which the computing capabilities and basic software reside, including the operating system and the input/output software;

(42c) EFB system means the hardware equipment (including any battery, connectivity provisions, input/output components) and software (including databases and the operating system) needed to support the intended EFB application(s);

(42d) EBT module means a combination of sessions in a qualified flight simulation training device as part of the 3-year period of recurrent assessment and training;

(43) ELA1 aircraft means the following manned European Light Aircraft:

- **(a)** an aeroplane with a Maximum Take-off Mass (MTOM) of 1 200 kg or less that is not classified as complex motor-powered aircraft;
- **(b)** a sailplane or powered sailplane of 1 200 kg MTOM or less;
- **(c)** a balloon with a maximum design lifting gas or hot air volume of not more than 3400 m^3 for hot air balloons, 1 050 m^3 for gas balloons, 300 m^3 for tethered gas balloons;

(44) ELA2 aircraft means the following manned European Light Aircraft:

- **(a)** an aeroplane with a Maximum Take-off Mass (MTOM) of 2 000 kg or less that is not classified as complex motor-powered aircraft;
- **(b)** a sailplane or powered sailplane of 2 000 kg MTOM or less;
- **(c)** a balloon;
- **(d)** a Very Light Rotorcraft with a MTOM not exceeding 600 kg which is of a simple design, designed to carry not more than two occupants, not powered by turbine and/or rocket engines; restricted to VFR day operations;

(44a) 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;

(45) elevated final approach and take-off area (elevated FATO) means a FATO that is at least 3 m above the surrounding surface;

(45a) emergency exit means an installed exit-type egress point from the aircraft that allows maximum opportunity for cabin and flight crew compartment evacuation within an appropriate time period and includes floor level door, window exit or any other type of exit, for instance hatch in the flight crew compartment and tail cone exit;

(46) enhanced flight vision system (EFVS) is an electronic means to provide the flight crew with a real-time sensor-derived or enhanced display of the external scene topography (the natural or man-made features of a place or region especially in a way to show their relative positions and elevation) through the use of imaging sensors; an EFVS is integrated with a flight guidance system and is implemented on a head-up display or an equivalent display system; if an EFVS is certified according to the applicable airworthiness requirements and an operator holds the necessary specific approval (when required), then it may be used for EFVS operations and may allow operations with operational credits;

(46a) EFVS operation means an operation in which visibility conditions require an EFVS to be used instead of natural vision in order to perform an approach or landing, identify the required visual references or conduct a roll-out;

(46b) EFVS 200 operation means an operation with an operational credit in which visibility conditions require an EFVS to be used down to 200 ft above the FATO or runway threshold. From that point to land, natural vision is used. The RVR shall not be less than 550 m;

(47) enhanced vision system (EVS) is an electronic means to provide the flight crew with a real-time image of the actual external scene topography (the natural or man-made features of a place or region especially in a way to show their relative positions and elevation) through the use of imaging sensors;

(47a) enrolment means the administrative action carried out by the operator where a pilot participates in the operator's EBT programme;

(47b) enrolled pilot means the pilot that participates in the EBT recurrent training programme;

(47c) equivalency of approaches means all the approaches that place an additional demand on a proficient crew regardless of whether they are used or not in the EBT modules;

(47d) equivalency of malfunctions means all the malfunctions that put a significant demand on a proficient crew regardless of whether they are used or not in the EBT modules;

(47e) evaluation phase means one of the phases of an EBT module which is a line-orientated flight scenario, representative of the operator's environment during which there are one or more occurrences to evaluate key elements of the defined competency framework;

(47f) evidence-based training (EBT) means assessment and training based on operational data that is characterised by developing and assessing the overall capability of a pilot across a range of competencies (competency framework) rather than by measuring the performance in individual events or manoeuvres;

(48) final approach and take-off area (FATO) means a defined area for helicopter operations, over which the final phase of the approach manoeuvre to hover or land is completed, and from which the take-off manoeuvre is commenced. In the case of helicopters operating in performance class 1, the defined area includes the rejected take-off area available;

(48a) flight crew member means a licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period;

(48b) final approach segment (FAS) means that segment of an instrument approach procedure (IAP) in which alignment and descent for landing are accomplished;

(49) flight data monitoring (FDM) means the proactive and non-punitive use of digital flight data from routine operations to improve aviation safety;

(49a) flight operations officer or **flight dispatcher** means a person designated by the operator to engage in the control and supervision of flight operations, who is suitably qualified, who supports, briefs or assists, or both, the pilot-in-command in the safe conduct of the flight;

(49b) flight data recorder (FDR) means a crash-protected flight recorder that uses a combination of data sources to collect and record parameters that reflect the state and performance of the aircraft;

(49c) flight recorder means any type of recorder that is installed on the aircraft for the purpose of facilitating accident or incident safety investigations;

(49d) flight following means the recording in real time of departure and arrival messages by operational personnel to ensure that a flight is operating and has arrived at the destination aerodrome or an alternate aerodrome;

(49e) flight monitoring means, in addition to the requirements defined for flight following:

- **(a)** operational monitoring of flights by suitably qualified operational-control personnel from departure throughout all phases of the flight;
- **(b)** communication of all available and relevant safety information between the operational control personnel on the ground and the flight crew; and
- **(c)** critical assistance to the flight crew in the event of an in-flight emergency or security issue, or at the request of the flight crew;

(50) flight simulation training device (FSTD) means a training device which is:

- **(a)** in the case of aeroplanes, a full flight simulator (FFS), a flight training device (FTD), a flight and navigation procedures trainer (FNPT), or a basic instrument training device (BITD);
- **(b)** in the case of helicopters, a full flight simulator (FFS), a flight training device (FTD) or a flight and navigation procedures trainer (FNPT);

(50a) flight time means:

- **(a)** for aeroplanes, the total time from the moment an aeroplane first moves for the purpose of taking off until the moment the aeroplane finally comes to rest at the end of the flight;
- **(b)** for helicopters, the total time between the moment a helicopter's rotor blades start turning for the purpose of taking off until the moment the helicopter finally comes to rest at the end of the flight, and the rotor blades are stopped;

(50b) flight watch means, in addition to all elements defined for 'flight monitoring', the active tracking of a flight by suitably qualified operational-control personnel throughout all phases of the flight to ensure that the flight is following its prescribed route without unplanned deviations, diversions or delays;

(52) GBAS landing system (GLS) means an approach landing system using ground based augmented global navigation satellite system (GNSS/GBAS) information to provide guidance to the aircraft based on its lateral and vertical GNSS position. It uses geometric altitude reference for its final approach slope;

(52a) go-around means a transition from an approach operation to a stabilised climb. This includes manoeuvres conducted at or above the MDA/H or DA/H, or below the DA/H (balked landings);

(53) ground emergency service personnel means any ground emergency service personnel (such as policemen, firemen, etc.) involved with helicopter emergency medical services (HEMSs) and whose tasks are to any extent pertinent to helicopter operations;

(54) grounding means the formal prohibition of an aircraft to take-off and the taking of such steps as are necessary to detain it;

(55) head-up display landing system (HUDLS) means the total airborne system which provides head-up guidance to the pilot to enable the pilot to either control the aircraft or to monitor the autopilot during take-off (if applicable), approach and landing (and roll-out if applicable), or go around. It includes all the sensors, computers, power supplies, indications and controls;

(56) *(Reserved)*

(57) *(Reserved)*

(58) helicopter hoist operation (HHO) crew member means a technical crew member who performs assigned duties relating to the operation of a hoist;

(59) helideck means a FATO located on a floating or fixed offshore structure;

(60) HEMS crew member means a technical crew member who is assigned to a HEMS flight for the purpose of attending to any person in need of medical assistance carried in the helicopter and assisting the pilot during the mission;

(61) HEMS flight means a flight by a helicopter operating under a HEMS approval, where immediate and rapid transportation is essential and the purpose of which is either of the following:

- **(a)** to facilitate emergency medical assistance by carrying one or more of the following:
    - (i) medical personnel;
    - (ii) medical supplies (equipment, blood, organs, drugs);
    - (iii) ill or injured persons and other persons directly involved;
- **(b)** to perform an operation where a person faces an imminent or anticipated health risk posed by the environment and either of the following conditions is met:
    - (i) that person needs to be rescued or provided with supplies;
    - (ii) persons, animals or equipment need to be transported to and from the HEMS operating site;

(61a) HEMS HEC operation means air and ground operations for the purpose of transporting one or more persons as human external cargo (HEC) within a HEMS flight;

(62) HEMS operating base means an aerodrome at which the crew members and the HEMS helicopter may be on standby for HEMS operations;

(63) HEMS operating site means a site that is selected by the commander during a HEMS flight for a HEMS HEC operation or a landing or a take-off;

(64) HHO flight means a flight by a helicopter operating under an HHO approval, the purpose of which is to facilitate the transfer of persons and/or cargo by means of a helicopter hoist;

(65) HHO offshore means a flight by a helicopter operating under an HHO approval, the purpose of which is to facilitate the transfer of persons and/or cargo by means of a helicopter hoist from or to a vessel or structure in a sea area or to the sea itself;

(66) HHO passenger means a person who is to be transferred by means of a helicopter hoist;

(67) HHO site means a specified area at which a helicopter performs a hoist transfer;

(68) hold-over time (HoT) means the estimated time the anti-icing fluid will prevent the formation of ice and frost and the accumulation of snow on the protected (treated) surfaces of an aeroplane;

(69) hostile environment means:

- **(a)** an area in which:
    - (i) a safe forced landing cannot be accomplished because the surface is inadequate; or
    - (ii) the helicopter occupants cannot be adequately protected from the elements; or
    - (iii) search and rescue response/capability are not provided consistent with anticipated exposure; or
    - (iv) there is an unacceptable risk of endangering persons or property on the ground;
- **(b)** in any case, the following areas:
    - (i) for overwater operations, the open sea area north of 45 N and south of 45 S, unless any part is designated as non-hostile by the responsible authority of the State in which the operations take place; and
    - (ii) those parts of a congested area without adequate safe forced landing areas;

(69a) human–machine interface (HMI) means a component of certain devices that is capable of handling human–machine interactions. The interface consists of hardware and software that allow user inputs to be interpreted and processed by machines or systems that, in turn, provide the required results to the user;

(69b) in-seat instruction means a technique used in the manoeuvres training phase or the scenario-based training phase, where the instructors can:

- **(a)** provide simple instructions to one pilot; or
- **(b)** perform predetermined exercises acting, in a pilot seat, as pilot flying (PF) or pilot monitoring (PM) for:
    - (1) the demonstration of techniques; and/or
    - (2) triggering the other pilot to intervene or interact;

(69c) instructor concordance means the consistency or stability of scores between different EBT instructors which gives a score (or scores) of how much homogeneity, or consensus, there is in the ratings given by instructors (raters);

(69d) instrument approach operation means an approach and landing using instruments for navigation guidance based on an instrument approach procedure (IAP). There are two methods for executing instrument approach operations:

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

(69e) instrument approach procedure (IAP) means a series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix or, where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply. IAPs are classified as follows:

- **(a)** non-precision approach (NPA) procedure, which means an IAP designed for 2D instrument approach operations Type A;
- **(b)** approach procedure with vertical guidance (APV) means a performance-based navigation (PBN) IAP designed for 3D instrument approach operations Type A;
- **(c)** precision approach (PA) procedure means an IAP based on navigation systems designed for 3D instrument approach operations Type A or B;

(70) landing decision point (LDP) means the point used in determining landing performance from which, an engine failure having been recognised at this point, the landing may be safely continued or a balked landing initiated;

(70a) landing distance at time of arrival (LDTA) means a landing distance that is achievable in normal operations based on landing performance data and associated procedures determined for the prevailing conditions at the time of landing;

(71) landing distance available (LDA) means the length of the runway which is declared available by the State of the aerodrome and suitable for the ground run of an aeroplane landing;

(72) landplane means a fixed wing aircraft which is designed for taking off and landing on land and includes amphibians operated as landplanes;

(72a) line-orientated flight scenario means the assessment and training involving a realistic, 'real-time', full mission simulation of scenarios that are representative of line operations;

(72b) line check means a check conducted by the operator and completed by the pilot or the technical crew member to demonstrate competence in carrying out normal line operations described in the operations manual;

(73) local helicopter operation (LHO) means a commercial air transport operation of helicopters with a maximum certified take-off mass (MCTOM) over 3 175 kg and a maximum operational passenger seating configuration (MOPSC) of nine or less, by day, over routes navigated by reference to visual landmarks, conducted within a local and defined geographical area specified in the operations manual;

(74) low-visibility operations (LVOs) means approach or take-off operations on a runway with a runway visual range less than 550 m or with a decision height less than 200 ft;

(75) low-visibility take-off (LVTO) means a take-off with an RVR less than 550 m;

(76) *(Reserved)*

(76a) maintenance check flight (MCF) means a flight of an aircraft with an airworthiness certificate or with a permit to fly which is carried out for troubleshooting purposes or to check the functioning

of one or more systems, parts or appliances after maintenance, if the functioning of the systems, parts or appliances cannot be established during ground checks and which is carried out in any of the following situations:

- **(a)** as required by the aircraft maintenance manual (AMM) or any other maintenance data issued by a design approval holder being responsible for the continuing airworthiness of the aircraft;
- **(b)** after maintenance, as required by the operator or proposed by the organisation responsible for the continuing airworthiness of the aircraft;
- **(c)** as requested by the maintenance organisation for verification of a successful defect rectification;
- **(d)** to assist with fault isolation or troubleshooting;

(76b) manoeuvres training phase means a phase of an EBT module during which, according to aircraft generation, crews have time to practise and improve performance in largely psychomotor skill-based exercises by achieving a prescribed flight path or performing a prescribed event to a prescribed outcome;

(76c) mixed EBT programme means an operator's recurrent training and checking programme as per MCAR.ORO.FC.230, a portion of which is dedicated to the application of EBT but which does not replace proficiency checks as per Appendix 9 to MCAR-FCL;

(77) maximum operational passenger seating configuration (MOPSC) means the maximum passenger seating capacity of an individual aircraft, excluding crew seats, established for operational purposes and specified in the operations manual. Taking as a baseline the maximum passenger seating configuration established during the certification process conducted for the type certificate (TC), supplemental type certificate (STC) or change to the TC or STC as relevant to the individual aircraft, the MOPSC may establish an equal or lower number of seats, depending on the operational constraints;

(78) medical passenger means a medical person carried in a helicopter during a HEMS flight, including but not limited to doctors, nurses and paramedics;

(78a) minor failure condition means a failure condition that would not significantly reduce aircraft safety, and which involves flight crew actions that are well within their capabilities;

(78b) misuse of substances means the use of one or more psychoactive substances by flight crew, cabin crew members and other safety-sensitive personnel in a way that:

- **(a)** constitutes a direct hazard to the user or endangers the lives, health or welfare of others; and/or
- **(b)** causes or worsens an occupational, social, mental or physical problem or disorder;

(78c) minimum descent altitude (MDA) or minimum descent height (MDH) means a specified altitude or height in a 2D instrument approach operation or circling approach operation below which descent must not be made without the required visual reference;

(79) night means the period between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise as may be prescribed by the appropriate authority, as defined by the appropriate authority;

(80) night vision goggles (NVG) means a head-mounted, binocular, light intensification appliance that enhances the ability to maintain visual surface references at night;

(81) night vision imaging system (NVIS) means the integration of all elements required to successfully and safely use NVGs while operating a helicopter. The system includes as a minimum: NVGs, NVIS lighting, helicopter components, training and continuing airworthiness;

(82) non-hostile environment means an environment in which:

- **(a)** a safe forced landing can be accomplished;
- **(b)** the helicopter occupants can be protected from the elements; and
- **(c)** search and rescue response/capability is provided consistent with the anticipated exposure. In any case, those parts of a congested area with adequate safe forced landing areas shall be considered non-hostile;

(83) *(Reserved)*

(84) NVIS crew member means a technical crew member assigned to an NVIS flight;

(85) NVIS flight means a flight under night visual meteorological conditions (VMC) with the flight crew using NVGs in a helicopter operating under an NVIS approval;

(86a) offshore location means a facility intended to be used for helicopter operations on a fixed or floating offshore structure or a vessel;

(86b) open sea area means the area of water to seaward of the coastline;

(87) operating site means a site, other than an aerodrome, selected by the operator or pilot-in-command or commander for landing, take-off and/or external load operations;

(88) operation in performance class 1 means an operation that, in the event of failure of the critical engine, the helicopter is able to land within the rejected take-off distance available or safely continue the flight to an appropriate landing area, depending on when the failure occurs;

(89) operation in performance class 2 means an operation that, in the event of failure of the critical engine, performance is available to enable the helicopter to safely continue the flight, except when the failure occurs early during the take-off manoeuvre or late in the landing manoeuvre, in which cases a forced landing may be required;

(90) operation in performance class 3 means an operation that, in the event of an engine failure at any time during the flight, a forced landing may be required in a multi-engined helicopter and will be required in a single-engined helicopter;

(91) operational control means the responsibility for the initiation, continuation, termination or diversion of a flight in the interest of safety;

(91a) operational credit means a credit for operations with an advanced aircraft enabling lower aerodrome operating minima than would normally be established by the operator for a basic aircraft, based upon the performance of advanced aircraft systems utilising the available external

infrastructure. Lower operating minima may include a lower decision height/altitude or minimum descent height/altitude, reduced visibility requirements or reduced ground facilities or a combination of these;

(92) operator proficiency check means a check conducted by the operator and completed by the pilot or the technical crew member to demonstrate competence in carrying out normal, abnormal and emergency procedures;

(93) performance class A aeroplanes means multi-engined aeroplanes powered by turbo-propeller engines with an MOPSC of more than nine or a maximum take-off mass exceeding 5 700 kg, and all multi-engined turbo-jet powered aeroplanes;

(94) performance class B aeroplanes means aeroplanes powered by propeller engines with an MOPSC of nine or less and a maximum take-off mass of 5 700 kg or less;

(95) performance class C aeroplanes means aeroplanes powered by reciprocating engines with an MOPSC of more than nine or a maximum take-off mass exceeding 5 700 kg;

(95a) personnel-carrying device system (PCDS) means a system including one or more devices that is either attached to a hoist or cargo hook or mounted to the rotorcraft airframe during human external cargo (HEC) or helicopter hoist operations (HHO). The devices have the structural capability and features needed to transport occupants external to the helicopter e.g. a life safety harness with or without a quick release and strop with a connector ring, a rigid basket or a cage;

(95b) simple personnel carrying device system (simple 'PCDS') means a PCDS that complies with the following conditions:

- **(a)** (Reserved)
- **(b)** is designed to restrain no more than a single person (for instance, hoist or cargo hook operator, task specialist or photographer) inside the cabin, or to restrain no more than two persons outside the cabin;
- **(c)** is not a rigid structure such as a cage, a platform or a basket;

(96) pilot-in-command means the pilot designated as being in command and charged with the safe conduct of the flight. For the purpose of commercial air transport operations, the 'pilot-in-command' shall be termed the 'commander';

(96a) portable EFB means a portable EFB host platform, used on the flight deck, which is not part of the configuration of the certified aircraft;

(96b) portable electronic device (PED) means any kind of electronic device, typically but not limited to consumer electronics, brought on board the aircraft by crew members, passengers, or as part of the cargo, that is not included in the configuration of the certified aircraft. It includes all equipment that is able to consume electrical energy. The electrical energy can be provided from internal sources such as batteries (chargeable or non-rechargeable) or the devices may also be connected to specific aircraft power sources;

(97) principal place of business means the head office or registered office of the organisation within which the principal financial functions and operational control of the activities referred to in this Regulation are exercised;

(98) prioritisation of ramp inspections means the dedication of an appropriate portion of the total number of ramp inspections conducted by or on behalf of a competent authority on an annual basis as provided in MCAR-ARO;

(98a) proficient means having demonstrated the necessary skills, knowledge and attitudes that are required to perform any defined tasks to the prescribed standard;

(98b) psychoactive substances means alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, with the exception of caffeine and tobacco;

(99) public interest site (PIS) means a site used exclusively for operations in the public interest;

(100) ramp inspection means the inspection of aircraft, of flight and cabin crew qualifications and of flight documentation in order to verify the compliance with the applicable requirements;

(101) rectification interval means a limitation on the duration of operations with inoperative equipment;

(102) rejected take-off distance available (RTODAH) means the length of the final approach and take-off area declared available and suitable for helicopters operated in performance class 1 to complete a rejected take-off;

(103) rejected take-off distance required (RTODRH) means the horizontal distance required from the start of the take-off to the point where the helicopter comes to a full stop following an engine failure and rejection of the take-off at the take-off decision point;

(103a) required navigation performance (RNP) specification means a navigation specification for PBN operations which includes a requirement for on-board navigation performance monitoring and alerting;

(103b) rules of the air means the rules established in MCAR 2;

(103c) runway condition report (RCR) means a comprehensive standardised report relating to the conditions of the runway surface and their effect on the aeroplane landing and take-off performance, described by means of runway conditions code;

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

(104a) safe landing means, in the context of the fuel/energy policy or fuel/energy schemes, a landing at an adequate aerodrome or operating site with no less than the final reserve fuel/energy remaining and in compliance with the applicable operational procedures and aerodrome operating minima;

(105) safe forced landing means an unavoidable landing or ditching with a reasonable expectancy of no injuries to persons in the aircraft or on the surface;

(105a) safety-sensitive personnel means persons who might endanger aviation safety if they perform their duties and functions improperly, including flight crew and cabin crew members, aircraft maintenance personnel and air traffic controllers;

(105b) scenario-based training phase means a phase of an EBT module which focuses on the development of competencies, whilst the pilot is trained to mitigate the most critical risks identified for the aircraft generation. It should include the management of specific operator's threats and errors in a real-time line orientated environment;

(106) seaplane means a fixed wing aircraft which is designed for taking off and landing on water and includes amphibians operated as seaplanes;

(107) separate runways means runways at the same aerodrome that are separate landing surfaces. These runways may overlay or cross in such a way that if one of the runways is blocked, it will not prevent the planned type of operations on the other runway. Each runway shall have a separate approach procedure based on a separate navigation aid;

(107a) specially prepared winter runway means a runway with a dry frozen surface of compacted snow or ice which has been treated with sand or grit or has been mechanically treated to improve runway friction;

(108) special VFR flight means a VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC;

(109) stabilised approach (SAp) means an approach that is flown in a controlled and appropriate manner in terms of configuration, energy and control of the flight path from a pre-determined point or altitude/height down to a point 50 ft above the threshold or the point where the flare manoeuvre is initiated if higher;

(109a) sterile flight crew compartment means any period of time when the flight crew members are not disturbed or distracted, except for matters critical to the safe operation of the aircraft or the safety of the occupants;

(110) take-off alternate aerodrome means an alternate aerodrome at which an aircraft can land should this become necessary shortly after take-off and if it is not possible to use the aerodrome of departure;

(111) take-off decision point (TDP) means the point used in determining take-off performance from which, an engine failure having been recognised at this point, either a rejected take-off may be made or a take-off safely continued;

(112) take-off distance available (TODA) in the case of aeroplanes means the length of the take-off run available plus the length of the clearway, if provided;

(113) take-off distance available (TODAH) in the case of helicopters means the length of the final approach and take-off area plus, if provided, the length of helicopter clearway declared available and suitable for helicopters to complete the take-off;

(114) take-off distance required (TODRH) in the case of helicopters means the horizontal distance required from the start of the take-off to the point at which take-off safety speed (VTOSS), a selected height and a positive climb gradient are achieved, following failure of the critical engine being recognised at the TDP, the remaining engines operating within approved operating limits;

(115) take-off flight path means the vertical and horizontal path, with the critical engine inoperative, from a specified point in the take-off for aeroplanes to 1 500 ft above the surface and for helicopters to 1 000 ft above the surface;

(116) take-off mass means the mass including everything and everyone carried at the commencement of the take-off for helicopters and take-off run for aeroplanes;

(117) take-off run available (TORA) means the length of runway that is declared available by the State of the aerodrome and suitable for the ground run of an aeroplane taking off;

(117a) task specialist means a person assigned by the operator or a third party, or acting as an undertaking, who performs tasks on the ground directly associated with a specialised task or performs specialised tasks on board or from the aircraft;

(118) technical crew member means a crew member in commercial air transport HEMS, HEMS HEC, HHO or NVIS operations, other than a flight or cabin crew member, assigned by the operator to duties in the aircraft or on the ground for the purpose of assisting the pilot during HEMS, HEMS HEC, HHO or NVIS operations, which may require the operation of specialised on-board equipment;

(119) technical instructions (TI) means the latest effective edition of the 'Technical instructions for the safe transport of dangerous goods by air', including the supplement and any addenda, approved and published by the International Civil Aviation Organisation;

(120) traffic load means the total mass of passengers, baggage, cargo and carry-on specialist equipment and including any ballast;

(120a) type A EFB application means an EFB application whose malfunction or misuse has no safety effect;

(120b) type B EFB application means an EFB application:

- **(a)** whose malfunction or misuse is classified as minor failure condition or below; and
- **(b)** which neither replaces nor duplicates any system or functionality required by airworthiness regulations, airspace requirements, or operational rules;

(120c) training to proficiency means training designed to achieve end-state performance objectives, providing sufficient assurance that the trained individual is capable of consistently carrying out specific tasks safely and effectively;

(120d) Type A instrument approach operation means an instrument approach operation with an MDH or a DH at or above 250 ft;

(120e) Type B instrument approach operation means an operation with a DH below 250 ft. Type B instrument approach operations are categorised as:

- **(a)** Category I (CAT I): a DH not lower than 200 ft and with either a visibility not less than 800 m or an RVR not less than 550 m;
- **(b)** Category II (CAT II): a DH lower than 200 ft but not lower than 100 ft, and an RVR not less than 300 m;
- **(c)** Category III (CAT III): a DH lower than 100 ft or no DH, and an RVR less than 300 m or no RVR limitation;

(121) unaided NVIS flight means, in the case of NVIS operations, that portion of a VFR flight performed at night when a crew member is not using NVG;

(122) undertaking means any natural or legal person, whether profit-making or not, or any official body whether having its own personality or not;

(123) V1 means the maximum speed in the take-off at which the pilot must take the first action to stop the aeroplane within the accelerate-stop distance. V1 also means the minimum speed in the take-off, following a failure of the critical engine at VEF, at which the pilot can continue the take-off and achieve the required height above the take-off surface within the take-off distance;

(124) VEF means the speed at which the critical engine is assumed to fail during take-off;

(124a) visibility (VIS) means visibility for aeronautical purposes, which is the greater of:

- **(a)** the greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognised when observed against a bright background; and
- **(b)** the greatest distance at which lights in the vicinity of 1 000 candelas can be seen and identified against an unlit background;

(125) visual approach operation means an approach operation by an IFR flight when either a part or all parts of an IAP is (are) not completed and the approach operation is executed with visual reference to terrain;

(126) weather-permissible aerodrome means an adequate aerodrome where, for the anticipated time of use, meteorological reports, or forecasts, or any combination thereof, indicate that the meteorological conditions will be at or above the required aerodrome operating minima, and the runway surface condition reports indicate that a safe landing will be possible;

(127) wet lease agreement means an agreement:

- in the case of CAT operations, between air carriers pursuant to which the aircraft is operated under the AOC of the lessor; or
- in the case of commercial operations other than CAT, between operators pursuant to which the aircraft is operated under the responsibility of the lessor;

(128) wet runway means a runway whose surface is covered by any visible dampness or water up to and including 3 mm deep within the area intended to be used.

GM1 Part DEF Annex I

DEFINITIONS FOR TERMS USED IN ACCEPTABLE MEANS OF COMPLIANCE AND GUIDANCE MATERIAL

For the purpose of Acceptable Means of Compliance and Guidance Material to this Regulation, the following definitions should apply:

(a) 'Abnormal flight behaviour' means, in the context of an aircraft tracking system, an event affecting a flight:

(1) which is outside of the parameters defined by the operator for normal operation or which indicates an obvious deviation from normal operation; and

(2) for which the operator has determined that it poses a risk for the safe continuation of the flight or for third parties.

(a) 'Accuracy' means, in the context of PBN operations, the degree of conformance between the estimated, measured or desired position and/or the velocity of a platform at a given time, and its true position or velocity. Navigation performance accuracy is usually presented as a statistical measure of system error and is specified as predictable, repeatable and relative.

(b) 'Aircraft-based augmentation system (ABAS)' means a system that augments and/or integrates the information obtained from the other GNSS elements with information available on board the aircraft. The most common form of ABAS is receiver autonomous integrity monitoring (RAIM).

(ba) 'Airport moving map display (AMMD)' means a software application that displays an airport map on a display device and uses data from a navigation source to depict the aircraft current position on this map while the aircraft is on the ground.

(c) 'Area navigation (RNAV)' means a method of navigation which permits aircraft operation on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

(d) 'Availability' means, in the context of PBN operations, an indication of the ability of the system to provide usable service within the specified coverage area and is defined as the portion of time during which the system is to be used for navigation during which reliable navigation information is presented to the crew, autopilot or other system managing the flight of the aircraft.

(e) 'Committal point' means the point in the approach at which the pilot flying decides that, in the event of an engine failure being recognised, the safest option is to continue to the elevated final approach and take-off area (elevated FATO).

(f) 'Continuity of function' means, in the context of PBN operations, the capability of the total system, comprising all elements necessary to maintain aircraft position within the defined airspace, to perform its function without non-scheduled interruptions during the intended operation.

(fa) 'Controlled portable electronic device (C-PED)' means a PED subject to administrative control by the operator that uses it. This includes, inter alia, tracking the allocation of the devices to specific aircraft or persons and ensuring that no unauthorised changes are made to the hardware, software, or databases. C-PEDs can be assigned to the category of non-intentional transmitters or T-PEDs.

(fb) 'EFB installed resources' means certified EFB hardware components external to the EFB host platform itself, such as input/output components (installed remote displays, keyboards, pointing devices, switches, etc.) or a docking station.

(fc) 'EFB mounting device' means an aircraft certified part that secures a portable or installed EFB, or EFB system components.

(fd) 'EFB system supplier' means the company responsible for developing, or for having developed, the EFB system or part of it.

(g) 'Emergency locator transmitter' is a generic term describing equipment that broadcasts distinctive signals on designated frequencies for the purpose of search and rescue (SAR). The ELT may be activated by various conditions (e.g. manual activation, automatic detection of a distress situation, automatic detection of a crash impact, automatic detection of aircraft immersion into water, etc.). The ELT signals usually include signals that are intended to be detected by the international COSPAS-SARSAT programme, and homing signals that are intended to guide SAR teams to the ELT.

(h) 'Exposure time' means the actual period during which the performance of the helicopter with the critical engine inoperative in still air does not guarantee a safe forced landing or the safe continuation of the flight.

(i) 'Fail-operational flight control system' means a flight control system with which, in the event of a failure below alert height, the approach, flare and landing can be completed automatically. In the event of a failure, the automatic landing system will operate as a fail-passive system.

(j) 'Fail-operational hybrid landing system' means a system that consists of a primary fail-passive automatic landing system and a secondary independent guidance system enabling the pilot to complete a landing manually after failure of the primary system.

(k) 'Fail-passive flight control system': a flight control system is fail-passive if, in the event of a failure, there is no significant out-of-trim condition or deviation of flight path or attitude but the landing is not completed automatically. For a fail-passive automatic flight control system the pilot assumes control of the aeroplane after a failure.

(l) 'Flight control system' in the context of low visibility operations means a system that includes an automatic landing system and/or a hybrid landing system.

(m) 'HEMS dispatch centre' means a place where, if established, the coordination or control of the helicopter emergency medical service (HEMS) flight takes place. It may be located in a HEMS operating base.

(n) 'Hybrid head-up display landing system (hybrid HUDLS)' means a system that consists of a primary fail-passive automatic landing system and a secondary independent HUD/HUDLS enabling the pilot to complete a landing manually after failure of the primary system.

(na) 'Installed EFB' means an EFB host platform installed in an aircraft, capable of hosting type A and/or type B EFB applications. It may also host certified applications. It is an aircraft part, and, is therefore, covered by the aircraft airworthiness approval.

(o) 'Integrity' means, in the context of PBN operations, the ability of a system to provide timely warnings to users when the system should not be used for navigation.

(p) 'Landing distance available (LDAH)' means the length of the final approach and take-off area plus any additional area declared available by the State of the aerodrome and suitable for helicopters to complete the landing manoeuvre from a defined height.

(q) 'Landing distance required (LDRH)', in the case of helicopters, means the horizontal distance required to land and come to a full stop from a point 15 m (50 ft) above the landing surface.

(r) 'Lateral navigation' means a method of navigation which permits aircraft operation on a horizontal plane using radio navigation signals, other positioning sources, external flight path references, or a combination of these.

(ra) 'mass' and 'weight': In accordance with ICAO Annex 5 and the International System of Units (SI), both terms are used to indicate the actual and limiting masses of aircraft, the payload and its constituent elements, the fuel load, etc. These are expressed in units of mass (kg), but in most approved flight manuals and other operational documentation, these quantities are published as weights in accordance with the common language. In the ICAO standardised system of units of measurement, a weight is a force rather than a mass. Since the use of the term 'weight' does not cause any problem in the day-to-day handling of aircraft, its continued use in operational applications and publications is acceptable.

(s) 'Maximum structural landing mass' means the maximum permissible total aeroplane mass upon landing under normal circumstances.

(t) 'Maximum zero fuel mass' means the maximum permissible mass of an aeroplane with no usable fuel. The mass of the fuel contained in particular tanks should be included in the zero fuel mass when it is explicitly mentioned in the aircraft flight manual.

(ta) 'Miscellaneous (non-EFB) software applications' means non-EFB applications that support function(s) not directly related to the tasks performed by the flight crew in the aircraft.

(u) 'Overpack', for the purpose of transporting dangerous goods, means an enclosure used by a single shipper to contain one or more packages and to form one handling unit for convenience of handling and stowage.

(v) 'Package', for the purpose of transporting dangerous goods, means the complete product of the packing operation consisting of the packaging and its contents prepared for transport.

(w) 'Packaging', for the purpose of transporting dangerous goods, means receptacles and any other components or materials necessary for the receptacle to perform its containment function.

(x) 'Personal locator beacon (PLB)' is an emergency beacon other than an ELT that broadcasts distinctive signals on designated frequencies, is standalone, portable and is manually activated by the survivors.

(xa) 'Ramp inspection tool' means the IT application including a centralised database used by all stakeholders to store and exchange data related to ramp inspections.

(y) 'Receiver autonomous integrity monitoring (RAIM)' means a technique whereby a GNSS receiver/processor determines the integrity of the GNSS navigation signals using only GNSS signals or GNSS signals augmented with altitude. This determination is achieved by a consistency check among redundant pseudo-range measurements. At least one satellite in addition to those required for navigation has to be in view for the receiver to perform the RAIM function.

(z) 'Rotation point (RP)' means the point at which a cyclic input is made to initiate a nose-down attitude change during the take-off flight path. It is the last point in the take-off path from which, in the event of an engine failure being recognised, a forced landing on the aerodrome can be achieved.

(za) 'Runway condition assessment matrix (RCAM)' means a matrix that allows the assessment of the runway condition code (RWYCC), using associated procedures, from a set of observed runway surface condition(s) and pilot report of braking action.

(zb) 'Runway condition code (RWYCC)' means a number, to be used in the runway condition report (RCR), that describes the effect of the runway surface condition on aeroplane deceleration performance and lateral control.

(zc) 'Runway surface condition' means a description of the condition of the runway surface used in the RCR which establishes the basis for the determination of the RWYCC for aeroplane performance purposes.

(zd) 'Runway surface condition descriptors' means one of the following elements on the surface of the runway:

(1) 'compacted snow': snow that has been compacted into a solid mass such that aeroplane tyres, at operating pressures and loadings, will run on the surface without significant further compaction or rutting of the surface;

(2) 'dry snow': snow from which a snowball cannot readily be made;

(3) 'frost': ice crystals formed from airborne moisture on a surface whose temperature is at or below freezing; frost differs from ice in that the frost crystals grow independently and, therefore, have a more granular texture;

(4) 'ice': water that has frozen or compacted snow that has transitioned into ice in cold and dry conditions;

(5) 'slush': snow that is so water-saturated that water will drain from it when a handful is picked up or will splatter if stepped on forcefully;

(6) 'standing water': water of depth greater than 3 mm;

(7) 'Wet ice': ice with water on top of it or ice that is melting.

(8) 'wet snow': snow that contains enough water to be able to make a well compacted, solid snowball, but water will not squeeze out.

(aaa) 'Slippery wet runway' means a wet runway where the surface friction characteristics of a significant portion of the runway have been determined to be degraded.

(ab) 'Touch down and lift-off area (TLOF)' means a load-bearing area on which a helicopter may touch down or lift off.

(ac) 'Transmitting PED (T-PED)' means a portable electronic device (PED) that has intentional radio frequency (RF) transmission capabilities.

(ad) 'Vertical navigation' means a method of navigation which permits aircraft operation on a vertical flight profile using altimetry sources, external flight path references, or a combination of these.

(ae) 'Viewable stowage' means a non-certified device that is attached to the flight crew member (e.g. with a kneeboard) or to an existing aircraft part (e.g. using suction cups), and is intended to hold charts or to hold low-mass portable electronic devices that are viewable by the flight crew members at their assigned duty stations.

GM2 Part DEF Abbreviations and Acronyms

The following abbreviations are used in the Annexes to this Regulation:

2D	two-dimensional
3D	three-dimensional
A	aeroplane
a/c	aircraft
AAC	aeronautical administrative communications
AAIM	aircraft autonomous integrity monitoring
AAL	above aerodrome level
ABAS	aircraft-based augmentation system
AC	advisory circular
AC	alternating current
ACAS	airborne collision avoidance system
ADF	automatic direction finder
ADG	air driven generator
ADS	automatic dependent surveillance
ADS-B	automatic dependent surveillance - broadcast
ADS-C	automatic dependent surveillance - contract
AEA	Association of European Airlines
AEO	all-engines-operative
AFFF	aqueous film forming foams
AFM	aircraft flight manual
AFN	aircraft flight notification
AFN	ATS facilities notification
AGL	above ground level
AHRS	attitude heading reference system
AIREP	air-report
AIS	aeronautical information service
ALAP	aerodrome landing analysis programme
ALARP	as low as reasonably practicable
ALD	actual landing distance
ALSF	approach lighting system with sequenced flashing lights
AMC	Acceptable Means of Compliance
AML	aircraft maintenance licence
AMSL	above mean sea level
ANP	actual navigation performance
AOC	aeronautical operational control
AOC	air operator certificate
APCH	approach
APP	approach
APU	auxiliary power unit
APV	approach procedure with vertical guidance

AR	authorisation required
ARA	airborne radar approach
ARA	Authority Requirements for Aircrew
A-RNP	advanced required navigation performance
ARO	Authority Requirements for Air Operations
ARP	Aerospace Recommended Practices
ASC	Air Safety Committee
ASDA	accelerate-stop distance available
ASE	altimeter system error
ATA	Air Transport Association
ATC	air traffic control
ATIS	automatic terminal information service
ATN	air traffic navigation
ATPL	airline transport pilot licence
ATQP	alternative training and qualification programme
ATS	air traffic services
ATSC	air traffic service communication
AVGAS	aviation gasoline
AVTAG	aviation turbine gasoline (wide-cut fuel)
AWO	all weather operations
BALS	basic approach lighting system
Baro VNAV	barometric VNAV
BCAR	British civil airworthiness requirements
BITD	basic instrument training device
CAP	controller access parameters
CAT	commercial air transport
CAT I / II / III	category I / II / III
CBT	computer-based training
CC	cabin crew
CDFA	continuous descent final approach
CDL	configuration deviation list
CFIT	controlled flight into terrain
CG	centre of gravity
CLB	climb
CM	context management
CMV	converted meteorological visibility
CofA	certificate of airworthiness
COM	communication (EBT competency)
COP	code of practice
CoR	certificate of registration
COSPAS-SARSAT	cosmicheskaya sistyema poiska avariynich sudov - search and rescue satellite-aided tracking
CP	committal point
CPA	closest point of approach
CPDLC	controller pilot data link communication

C-PED	controlled portable electronic device
CPL	commercial pilot licence
CRE	class rating examiner
CRI	class rating instructor
CRM	crew resource management
CRZ	cruise
CS	Certification Specifications
CSP	communication service provider
CVR	cockpit voice recorder
CVS	combined vision system
DA	decision altitude
DA/H	decision altitude/height
DAP	downlinked aircraft parameters
D-ATIS	digital automatic terminal information service
DC	direct current
DCL	departure clearance
DES	descent
D-FIS	data link flight information service
DG	dangerous goods
DH	decision height
DI	daily inspection
DIFF	deck integrated fire fighting system
DLR	data link recorder
DME	distance measuring equipment
D-METAR	data link - meteorological aerodrome report
D-OTIS	data link - operational terminal information service
DPATO	defined point after take-off
DPBL	defined point before landing
DR	decision range
DSTRK	desired track
EBT	evidence-based training
EC	European Community
ECAC	European Civil Aviation Conference
EFB	electronic flight bag
EFIS	electronic flight instrument system
EFVS	enhanced flight vision system
EFVS-A	enhanced flight vision system used for approach
EFVS-L	enhanced flight vision system used for landing
EGNOS	European geostationary navigation overlay service
EGT	exhaust gas temperature
ELT	emergency locator transmitter
ELT(AD)	emergency locator transmitter (automatically deployable)
ELT(AF)	emergency locator transmitter (automatic fixed)
ELT(DT)	emergency locator transmitter (distress tracking)
ELT(AP)	emergency locator transmitter (automatic portable)

ELT(S)	survival emergency locator transmitter
EPE	estimated position of error
EPR	engine pressure ratio
EPU	estimated position of uncertainty
ERA	en-route alternate (aerodrome)
ERP	emergency response plan
ETOPS	extended range operations with two-engined aeroplanes
EU	European Union
EUROCAE	European Organisation for Civil Aviation Equipment
EVAL	evaluation phase
EVS	enhanced vision system
FAA	Federal Aviation Administration
FAF	final approach fix
FALS	full approach lighting system
FANS	future air navigation systems
FAP	final approach point
FAR	Federal Aviation Regulation
FAS	final approach segment
FATO	final approach and take-off
FC	flight crew
FCL	flight crew licensing
FCOM	flight crew operating manual
FDM	flight data monitoring
FDO	flying display operation
FDR	flight data recorder
FFS	full flight simulator
FGS	flight control/guidance system
FI	flight instructor
FLIPCY	flight plan consistency
FLTA	forward-looking terrain avoidance
FMECA	failure mode, effects and criticality analysis
FMS	flight management system
FNPT	flight and navigation procedures trainer
FOD	foreign object damage
FOSA	flight operational safety assessment
FOV	field of view
FPA	flight path management — automation (EBT competency)
FPM	flight path management — manual control (EBT competency)
fpm	feet per minute
FRT	fixed radius transition
FSTD	flight simulation training device
ft	feet
FTD	flight training device
FTE	full time equivalent
FTE	flight technical error

FTL	flight and duty time limitations
g	gram
GAGAN	GPS aided geo augmented navigation
GBAS	ground-based augmentation system
GCAS	ground collision avoidance system
GEN	general
GIDS	ground ice detection system
GLS	GBAS landing system
GM	Guidance Material
GMP	general medical practitioner
GND	ground
GNSS	global navigation satellite system
GPS	global positioning system
GPWS	ground proximity warning system
H	helicopter
HEMS	helicopter emergency medical service
HF	high frequency
Hg	mercury
HHO	helicopter hoist operation
HIALS	high intensity approach lighting system
HIGE	hover in ground effect
HLL	helideck limitations list
HOGE	hover out of ground effect
HoT	hold-over time
hPa	hectopascals
HPL	human performance and limitations
HUD	head-up display
HUDLS	head-up guidance landing system
HUMS	health usage monitor system
IAF	initial approach fix
IALS	intermediate approach lighting system
IAP	instrument approach procedure
ICAO	International Civil Aviation Organization
IDE	instruments, data and equipment
IF	intermediate fix
IFR	instrument flight rules
IFSD	in-flight shutdown
IGE	in ground effect
ILS	instrument landing system
IMC	instrument meteorological conditions
in	inches
INS	inertial navigation system
IP	intermediate point
IR	Implementing Rule
IR	instrument rating

IRS	inertial reference system
ISA	international standard atmosphere
ISI	in-seat instruction
ISO	International Organization for Standardization
IV	intravenous
JAA	Joint Aviation Authorities
JAR	Joint Aviation Requirements
kg	kilograms
km	kilometres
KNO	application of knowledge (EBT competency)
kt	knots
LDA	landing distance available
LDF	landing distance factor
LDG	landing
LDP	landing decision point
LDTA	landing distance at time of arrival
LED	light-emitting diode
LHO	local helicopter operation
LHS	left-hand seat
LIFUS	line flying under supervision
LNAV	lateral navigation
LoA	letter of acceptance
LOC	localiser
LOC-I	loss of control in-flight
LOE	line-oriented evaluation
LOFT	line-oriented flight training
LOQE	line-oriented quality evaluation
LOS	limited obstacle surface
LP	Localiser performance
LPV	localiser performance with vertical guidance
LRCS	long range communication system
LRNS	long range navigation system
LSAA	landing system assessment area
LTW	Leadership and teamwork (EBT competency)
LVO	low visibility operation
LVP	low visibility procedures
LVTO	low visibility take-off
m	metres
MALS	medium intensity approach lighting system
MALSF	medium intensity approach lighting system with sequenced flashing lights
MALSR	medium intensity approach lighting system with runway alignment indicator lights
MAPt	missed approach point
MCTOM	maximum certified take-off mass
MDA	minimum descent altitude

MDH	minimum descent height
MEA	minimum en-route altitude
MED	medical
MEL	minimum equipment list
METAR	meteorological aerodrome report
MGA	minimum grid altitude
MHA	minimum holding altitude
MHz	megahertz
MID	midpoint
MLR	manuals, logs and records
MLS	microwave landing system
MLX	millilux
mm	millimetres
MM	multi-mode
MMEL	master minimum equipment list
MNPS	minimum navigation performance specifications
MOC	minimum obstacle clearance
MOCA	minimum obstacle clearance altitude
MOPSC	maximum operational passenger seating configuration
MORA	minimum off-route altitude
MPSC	maximum passenger seating capacity
MSA	minimum sector altitude
MSAS	multi-functional satellite augmentation system
MT	manoeuvres training phase
MTCA	minimum terrain clearance altitude
N	North
NADP	noise abatement departure procedure
NALS	no approach lighting system
NCC	non-commercial operations with complex motor-powered aircraft
NCO	non-commercial operations with other-than-complex motor-powered aircraft
N_F	free power turbine speed
N_G	engine gas generator speed
NM	nautical miles
NOTAM	notice to airmen
NOTECHS	non-technical skills evaluation
NOTOC	notification to captain
NPA	non-precision approach
NPA	Notice of Proposed Amendment
NSE	navigation system error
NVD	night vision device
NVG	night vision goggles
NVIS	night vision imaging system
OAT	outside air temperature
OB	observable behaviour
OCH	obstacle clearance height

OCL	oceanic clearance
ODALS	omnidirectional approach lighting system
OEI	one-engine-inoperative
OFS	obstacle-free surface
OFZ	obstacle free zone
OGE	out of ground effect
OIP	offset initiation point
OM	operations manual
OML	operational multi-pilot limitation
ONC	operational navigation chart
OPS	operations
ORO	Organisation Requirements for Air Operations
OTS CAT II	other than standard category II
PAPI	precision approach path indicator
PAR	precision approach radar
PBCS	performance-based communication and surveillance
PBE	protective breathing equipment
PBN	performance-based navigation
PC/PT	proficiency check/proficiency training
PCDS	personnel carrying device system
PDA	premature descent alert
PDP	predetermined point
PED	portable electronic device
PFC	porous friction course
PIC	pilot-in-command
PIN	personal identification number
PIS	public interest site
PLB	personal locator beacon
PNR	point of no return
POH	pilot's operating handbook
PRM	person with reduced mobility
PRO	application of procedures (EBT competency)
PSD	problem-solving & decision making (EBT competency)
PVD	paravisual display
QAR	quick access recorder
QFE	atmospheric pressure at aerodrome elevation / runway threshold
QNH	atmospheric pressure at nautical height
RA	resolution advisory
RAIM	receiver autonomous integrity monitoring
RAT	ram air turbine
RCAM	runway condition assessment matrix
RCC	rescue coordination centre
RCF	reduced contingency fuel
RCLL	runway centre line lights
RCP	required communication performance

RCR	runway condition report
RF	radius to fix
RF	radio frequency
RFC	route facility chart
RI	ramp inspection
RI	rectification interval
RIE	rectification interval extension
RMA	regional monitoring agency
RNAV	area navigation
RNP	required navigation performance
RNP APCH	RNP approach
RNP AR APCH	RNP approach for which authorisation is required
ROD	rate of descent
RP	rotation point
RSP	required surveillance performance
RTCA	Radio Technical Commission for Aeronautics
RTODAH	rejected take-off distance available (helicopters)
RTODRH	rejected take-off distance required (helicopters)
RTOM	reduced take-off mass
RTZL	runway touchdown zone lights
RVR	runway visual range
RVSM	reduced vertical separation minima
RWYCC	runway condition code
S	South
SA CAT I	special authorisation category I
SA CAT II	special authorisation category II
SAFA	safety assessment of foreign aircraft
SALS	simple approach lighting system
SALSF	simple approach lighting system with sequenced flashing lights
SAp	stabilised approach
SAP	system access parameters
SAR	search and rescue
SAS	stability augmentation system
SAW	situation awareness (EBT competency)
SBAS	satellite-based augmentation system
SBT	scenario-based training
SCC	senior cabin crew
SCP	special category of passenger
SDCM	system of differential correction and monitoring
SFE	synthetic flight examiner
SFI	synthetic flight instructor
SID	standard instrument departure
SMM	safety management manual
SMS	safety management system
SNAS	satellite navigation augmentation system

SOP	standard operating procedure
SPA	operations requiring specific approvals
SPECI	aviation selected special weather report
SPO	specialised operations
SRA	surveillance radar approach
SSALF	simplified short approach lighting system with sequenced flashing lights
SSALR	simplified short approach lighting system with runway alignment indicator lights
SSALS	simplified short approach lighting system
SSEC	static source error correction
SSR	secondary surveillance radar
STAR	standard terminal arrival route
STC	supplemental type certificate
SVS	synthetic vision system
TA	traffic advisory
TAC	terminal approach chart
TAS	true airspeed
TAWS	terrain awareness warning system
TC	technical crew
TC	type certificate
TCAS	traffic collision avoidance system
TCCA	Transport Canada Civil Aviation
TCH	type certificate holder
TDP	take-off decision point
TDZ	touchdown zone
TDZE	touchdown zone elevation
THR	threshold
TI	Technical Instructions
TIT	turbine inlet temperature
TLS	target level of safety
TMG	touring motor glider
TO	take-off
TODA	take-off distance available (aeroplanes)
TODAH	take-off distance available (helicopters)
TODRH	take-off distance required (helicopters)
TOGA	take-off/go around
TORA	take-off run available
T-PED	transmitting portable electronic device
TRE	type rating examiner
TRI	type rating instructor
TSE	total system error
TVE	total vertical error
TWIP	terminal weather information for pilots
UMS	usage monitoring system
UPRT	upset prevention and recovery training

UTC	coordinated universal time
V_2	take-off safety speed
V_{50}	stalling speed
V_{AT}	indicated airspeed at threshold
VDF	VHF direction finder
VFR	visual flight rules
VHF	very high frequency
VIS	visibility
VMC	visual meteorological conditions
V_{MO}	maximum operating speed
VNAV	vertical navigation
VOR	VHF omnidirectional radio range
VSS	visual segment surface
V_T	threshold speed
VTOL	vertical take-off and landing
V_{TOSS}	take-off safety speed
WAAS	wide area augmentation system
WAC	world aeronautical chart
WIFI	wireless fidelity
WLM	workload management (EBT competency)
ZFTT	zero flight-time training

GM3 Part DEF - HELIDECK

The term 'helideck' includes take-off and landing operations on ships and vessels and covers 'shipboard final approach and take off areas (FATOs).

GM4 Part - HEAD-UP GUIDANCE LANDING SYSTEM (HUDLS)

A HUDLS is typically used for primary approach guidance to decision heights of 50 ft.

GM5 Part DEF - HELICOPTER EMERGENCY MEDICAL SERVICES (HEMS) FLIGHT

(a) A HEMS flight (or more commonly referred to as HEMS mission) normally starts and ends at the HEMS operating base following tasking by the 'HEMS dispatch centre'. Tasking can also occur when airborne, or on the ground at locations other than the HEMS operating base.

(b) The following elements should be regarded as integral parts of the HEMS mission:

(1) flights to and from the HEMS operating site when initiated by the HEMS dispatch centre;

(2) flights to and from an aerodrome/operating site for the delivery or pick-up of medical supplies and/or persons required for completion of the HEMS mission; and

(3) flights to and from an aerodrome/operating site for refuelling required for completion of the HEMS mission.

GM6 Part DEF - HOSTILE ENVIRONMENT

Those parts of an open-sea area not considered to constitute a hostile environment should be designated by the appropriate authority in the appropriate aeronautical information publication (AIP) or other suitable documentation.

GM7 Part DEF - NIGHT VISION IMAGING SYSTEM (NVIS)

Helicopter components of the NVIS include the radio altimeter, visual warning system and audio warning system.

GM8 Part DEF - OFFSHORE LOCATION

Offshore location' includes, but is not limited to:

(a) helidecks;

(b) shipboard heliports; and

(c) winching areas on vessels or renewable-energy installations.

GM9 Part DEF - OFFSHORE OPERATIONS

An offshore operation is considered to be a helicopter flight for the purpose of:

(a) support of offshore oil, gas and mineral exploration, production, storage and transport;

(b) support to offshore wind turbines and other renewable-energy sources; or

(c) support to ships including sea pilot transfer.

GM10 Part DEF - COASTLINE

The national definition of coastline should be included by the appropriate authority in the aeronautical information publication (AIP) or other suitable documentation.

GM11 Part DEF - PUBLIC INTEREST SITE

An example of a public interest sites is a landing site based at a hospital located in a hostile environment in a congested area, which due to its size or obstacle environment does not allow the application of performance class 1 requirements that would otherwise be required for operations in a congested hostile environment.

GM12 Part DEF - TECHNICAL INSTRUCTIONS

The ICAO document number for the Technical Instructions is Doc 9284-AN/905.

GM13 Part DEF - V_1

The first action includes for example: apply brakes, reduce thrust, deploy speed brakes.

GM14 Part DEF - TASK SPECIALISTS

For the purpose of this Regulation, persons that are carried in a specialised operation, e.g. on a parachute flight, sensational flight or scientific research flight, are considered to be task specialists.

GM15 Part DEF - UPSET PREVENTION AND RECOVERY TRAINING (UPRT) DEFINITIONS

Aeroplane upset prevention and recovery training (UPRT)' refers to training consisting of:

— aeroplane upset prevention training: a combination of theoretical knowledge and flying training with the aim of providing flight crew with the required competencies to prevent aeroplane upsets; and

— aeroplane upset recovery training: a combination of theoretical knowledge and flying training with the aim of providing flight crew with the required competencies to recover from aeroplane upsets.

—

'Aeroplane upset' refers to an undesired aircraft state characterised by unintentional divergences from parameters normally experienced during operations. An aeroplane upset may involve pitch and/or bank angle divergences as well as inappropriate airspeeds for the conditions.

'Angle of attack (AOA)' means the angle between the oncoming air, or relative wind, and a defined reference line on the aeroplane or wing.

'Approach-to-stall' means flight conditions bordered by the stall warning and stall.
'Competency' means a combination of skills, knowledge, and attitudes required to perform a task to the prescribed standard.

'Developed upset' means a condition meeting the definition of an aeroplane upset.
'Developing upset' means any time the aeroplane begins to unintentionally diverge from the intended flight path or airspeed.

'Energy state' means how much of each kind of energy (kinetic, potential or chemical) the aeroplane has available at any given time.

'Error' means an action or inaction by the flight crew that leads to deviations from organisational or flight crew intentions or expectations.

'Error management' means the process of detecting and responding to errors with countermeasures that reduce or eliminate the consequences of errors, and mitigate the probability of further errors or undesired aircraft states.

'First indication of a stall' means the initial aural, tactile or visual sign of an impending stall, which can be either naturally or synthetically induced.

'Flight crew resilience' means the ability of a flight crew member to recognise, absorb and adapt to disruptions.

'Fidelity level' means the level of realism assigned to each of the defined FSTD features.
'Flight path' means the trajectory or path of the aeroplane travelling through the air over a given space of time.

'Flight path management' means active manipulation, using either the aeroplanes automation or manual handling, to command the aeroplane flight controls to direct the aeroplane along a desired trajectory.

'FSTD Training Envelope' refers to the high and moderate confidence regions of the FSTD validation envelope.
'Load factor' factor means the ratio of a specified load to the weight of the aeroplane, the former being expressed in terms of aerodynamic forces, propulsive forces, or ground reactions.

'Loss of control in flight (LOCI)' means a categorisation of an accident or incident resulting from a deviation from the intended flight path.

'Manoeuvre-based training' means training that focuses on a single event or manoeuvre in isolation.

'Negative training' means training which unintentionally introduces incorrect information or invalid concepts, which could actually decrease rather than increase safety.

'Negative transfer of training' means the application (and 'transfer') of what was learned in a training environment (i.e., a classroom, an FSTD) to normal practice, i.e. it describes the degree to which what was learned in training is applied to actual normal practices. In this context, negative transfer of training refers to the inappropriate generalisation of knowledge and skill to a situation or setting in normal practice that does not equal the training situation or setting.

'Post-stall regime' means flight conditions at an angle of attack greater than the critical angle of attack.

'Scenario-based training' means training that incorporates manoeuvres into real-world experiences to cultivate practical flying skills in an operational environment.

'Stall' means a loss of lift caused by exceeding the aeroplane's critical angle of attack.

Note: A stalled condition can exist at any attitude and airspeed, and may be recognised by continuous stall warning activation accompanied by at least one of the following:

(a) buffeting, which could be heavy at times;

(b) lack of pitch authority and/or roll control; and

(c) inability to arrest the descent rate.

'Stall Event' means an occurrence whereby the aeroplane experiences conditions associated with an approach-to-stall or a stall.

'Stall (event) recovery procedure' means the manufacturer-approved aeroplane-specific stall recovery procedure. If an OEM-approved recovery procedure does not exist, the aeroplane-specific stall recovery procedure developed by the operator, based on the stall recovery template contained in MCAR-ORO GM5 ORO.FC.220&230, may be used.

'Stall warning' means a natural or synthetic indication provided when approaching a stall that may include one or more of the following indications:

(a) aerodynamic buffeting (some aeroplanes will buffet more than others);

(b) reduced roll stability and aileron effectiveness;

(c) visual or aural cues and warnings;

(d) reduced elevator (pitch) authority;

(e) inability to maintain altitude or arrest rate of descent; and

(f) stick shaker activation (if installed).

Note: A stall warning indicates an immediate need to reduce the angle of attack.

'Startle' means the initial short-term, involuntary physiological and cognitive reactions to an unexpected event that commence the normal human stress response.

'Stick pusher' means a device that, automatically applies a nose down movement and pitch force to an aeroplane's control columns, to attempt to decrease the aeroplane's angle of attack. Device activation may occur before or after aerodynamic stall, depending on the aeroplane type.

Note: A stick pusher is not installed on all aeroplane types.

'Stick shaker' means a device that automatically vibrates the control column to warn the pilot of an approaching stall.

Note: A stick shaker is not installed on all aeroplane types.

'Stress (response)' means the response to a threatening event that includes physiological, psychological and cognitive effects. These effects may range from positive to negative and can either enhance or degrade performance.

'Surprise' means the emotionally-based recognition of a difference in what was expected and what is actual.

'Threat' means events or errors that occur beyond the influence of the flight crew, increase operational complexity and must be managed to maintain the margin of safety.
'Threat management' means the process of detecting and responding to threats with countermeasures that reduce or eliminate the consequences of threats and mitigate the probability of errors or undesired aircraft states.

'Train-to-proficiency' means approved training designed to achieve end-state performance objectives, providing sufficient assurances that the trained individual is capable to consistently carry out specific tasks safely and effectively.

Note: In the context of this definition, 'train-to-proficiency' can be replaced by 'training-to-proficiency'.

'Undesired aircraft state' means flight crew-induced aircraft position or speed deviation, misapplication of controls, or incorrect systems configuration, associated with a reduction in margins of safety.

Note: Undesired states can be managed effectively, restoring margins of safety, or flight crew response(s) can induce an additional error, incident, or accident.

Note: All countermeasures are necessary flight crew actions. However, some countermeasures to threats, errors and undesired aircraft states that flight crew employ, build upon 'hard'/systemic-based resources provided by the aviation system.

'Unsafe situation' means a situation, which has led to an unacceptable reduction in safety margin.

GM16 Part DEF - MINOR FAILURE CONDITION

Minor failure conditions may include, for example, a slight reduction in safety margins or functional capabilities, a slight increase in crew workload, such as routine flight plan changes, or some physical discomfort to passengers or cabin crew. Further guidance can be found in AMC 25.1309.
Minor failure conditions are not considered to be unsafe conditions in accordance with AMC 21.A.3B(b).

GM17 Part DEF - SIMPLE AND COMPLEX PERSONNEL-CARRYING DEVICE SYSTEM (PCDS)

(a) The following may qualify as a simple PCDS:

(1) A safety harness or rescue triangle for no more than two persons.

(2) A fixed-rope system for no more than two persons, to be attached under a single cargo hook or Y-rope to be attached to a dual hook.

(b) The following may not qualify as a simple PCDS:

(1) Any system that connects three persons or more to the helicopter.

(2) A PCDS with new or novel features.

(3) A PCDS that has not yet been proven by an appreciable and satisfactory service experience.

(c) The connecting elements to the hoist or cargo hook are part of the PCDS.

(d) The following standards may be used for a simple PCDS:

Table 1: Information on existing available standards applicable to a simple PCDS

Regulation (EU) 2016/425[1] or Directive 89/686/EEC if validly marketed before 21 April 2019	Personal protective equipment
Directive 2006/42/EC[2]	**Machinery**
EN 354	**Personal protective equipment for work positioning and prevention of falls from a height — lanyards**
EN 355	Personal protective equipment against falls from a height — energy absorbers
EN 358	Personal protective equipment for work positioning and prevention of falls from a height — belts for work positioning and restraint and work positioning lanyards
EN 361	Personal protective equipment against falls from a height — full body harnesses
EN 362	Personal protective equipment against falls from a height — connectors
EN 363	Personal fall protection equipment — personal fall-protection systems
EN 364	Personal protective equipment against falls from a height — test methods
EN 365	Marking/packaging/instructions to use
EN 813	Personal fall-protection equipment — sit harnesses
EN 1497	Personal protective equipment against falls from a height — rescue harnesses
EN 1498	Personal protective equipment against falls from a height — rescue loops

Regulation (EU) 2016/425[1] or Directive 89/686/EEC if validly marketed before 21 April 2019	Personal protective equipment
EN 1891	Personal protective equipment for the prevention of falls from a height — low stretch kernmantle ropes
EN 12275	Mountaineering equipment — connectors — safety requirements and test methods
EN 12277	Mountaineering equipment — harnesses — safety requirements and test methods

GM18 Part DEF - DETERMINING THE PRINCIPAL PLACE OF BUSINESS

(a) The principal place of business encompasses the principal financial functions and operational control of the activities of an operator. It may refer to the organisation's site from which the majority of its management personnel specified in MCAR-ORO.GEN.110 directs, controls or coordinates its operational activities, ensuring that the organisation complies with the Regulation. For non-commercial operations, this is usually the home base of the aircraft concerned or the location of the flight department.

(b) Since an operator, especially in the world of non-commercial operations, may use several places where it performs financial transactions, or several operational bases where there are personnel in charge of operational control, for the purpose of an effective oversight, it is relevant that the principal place of business be the one:

(1) where the operator has registered its organisation with the local register and where it pays corporate tax;

(2) where its main building facilities are located;

(3) where main administrative and financial work is being done (where salaries and employment benefits are paid); and

(4) from where the organisation management directs, controls or coordinates a substantial part of its activities, ensuring that the organisation complies with the requirements specified in MCAR-ORO.

(c) Organisations that perform also activities which are not subject to MCAR-ORO, MCAR-NCC or MCAR-SPO are recommended to consider that part of the organisation which is responsible for the operation of aircraft subject to MCAR-ORO, MCAR-NCC or MCAR-SPO.

For such organisations, the accountable manager is that manager who has the authority to ensure that all activities subject to MCAR-ORO, MCAR-NCC or MCAR-SPO can be financed and carried out in accordance with the applicable requirements. If the accountable manager is not located in the part of the organisation that is responsible for the operation of aircraft, but the other criteria mentioned in point (b) apply, the location of the accountable manager does not need to be considered for the determination of the principal place of business.

GM19 Part DEF - EVIDENCE-BASED TRAINING

Behaviour' refers to the way a person responds, either overtly or covertly, to a specific set of conditions, and which is capable of being measured.

'Instructor concordance' is also called 'inter-rater reliability'.

'Conditions' refers to anything that may qualify a specific environment in which performance will be demonstrated.

'Cycle' refers to the combination of two modules where Cycle 1 comprises Modules 1 and 2, Cycle 2 comprises Modules 3 and 4, and Cycle 3 comprises Modules 5 and 6 of the 3-year EBT programme.

'Equivalency of approaches' refers to approach clustering in other industry documentation.
'Equivalency of malfunctions' refers to malfunction clustering in other industry documentation.

'Evaluation phase (EVAL)' refers to the phase where a first assessment of competencies is performed in order to identify individual training needs. On completion of the evaluation phase, any areas that do not meet the minimum competency standard will become the focus of the subsequent training. The evaluation phase comprises a complete mission as a crew but not necessarily a complete flight.

'Facilitation technique' refers to an active training method, which uses effective questioning, listening and a non-judgemental approach, and is particularly effective in developing skills and attitudes, assisting trainees in developing insight and their own solutions, resulting in better understanding, retention and commitment.

'Line-orientated flight scenario(s)' are comprised of scenario elements derived from the table of assessment and training topics.

'Line-orientated safety audit (LOSA)' is one of the tools used to help evaluate the performance of the operations. It consists of line flights that are observed by appropriately qualified operator personnel to provide feedback to validate the EBT programme. LOSA may be one of the tools used to look at those elements of the operation that are unable to be monitored by FDM or Advanced FDM programmes.

'Manoeuvres training phase' refers to the phase where skill retention is trained (body memory actions). Flight path control may be accomplished by a variety of means including manual aircraft control and the use of auto flight systems.

'Monitoring' refers to a cognitive process to compare an actual to an expected state. It requires knowledge, skills and attitudes to create a mental model and to take appropriate action when deviations are recognised.

'Observable behaviour (OB)' refers to a single role-related behaviour that can be observed. The instructor may or may not be able to measure it.

'Performance criteria' refers to statements used to assess whether the required levels of performance have been achieved for a competency. A performance criterion consists of an OB, a condition (or conditions) and a competency standard.

'Practical assessment (or EBT practical assessment)' refers to a method for assessing performance that serves to verify the integrated performance of competencies. It takes place in either a simulated or an operational environment. An EBT assessment is equivalent to a proficiency check and is performed under the instructor privilege in the context of proficiency check in accordance with Appendix 10 to Part-FCL. More information can be found in ICAO Doc 9868 'PANS-TRG'.

'Scenario-based training phase (SBT)' refers to the largest phase in the EBT programme. It is designed to maximise crew's exposure to a variety of situations that develop and sustain a high level of competency and resilience. The scenario for this phase should include critical external and environmental threats, to build effective crew interaction to identify and manage errors. A portion of the phase will also be directed towards the management of critical system malfunctions.

Scenario elements address the training topic and detail the threat and/or error that the crew are exposed to.

'Train-to-proficiency' refers to approved training designed to achieve end-state performance objectives, providing sufficient assurance that the trained individual is capable of consistently carrying out specific tasks safely and effectively.
Note: In the context of this definition, 'train-to-proficiency' can be replaced by 'training-to-proficiency'.

GM20 Part DEF - CONTAMINATED RUNWAY

As the runway condition is reported in runway thirds, a significant portion of the runway surface area is more than 25 % of one third of the runway surface area within the required length and width being used.

The runway length being used in this context is the physical length of runway available, typically from the start of the take-off run available (TORA) in one direction to the start of the TORA in the opposite direction. When the runway is shortened by a notice to airmen (NOTAM) — for example, due to works, or the aerodrome operator is not able to clear the full length of the runway and closes part of it for

operations, the length being used is that declared in the NOTAM and the 'reduced runway length' that declared in the RCR.

The runway width being used in this context is the physical width of the runway (between the runway edge lights), or the 'cleared width' if reported in the RCR. It is not intended that 25 % coverage is reported when contaminants affect only the runway edges after runway cleaning. Runway inspectors are instructed to focus on the area around the wheel tracks when reporting the contaminant type, coverage and depth.

GM21 Part DEF - DRY RUNWAY/WET RUNWAY

The 'area intended to be used' means the area of the runway that is part of the TORA, accelerate and stop distance available (ASDA) or landing distance available (LDA) declared in the aeronautical information publication (AIP) or by a NOTAM.

GM22 Part DEF -RUNWAY CONDITION CODE (RWYCC)

The purpose of the runway condition code (RWYCC) is to permit an operational aeroplane landing performance calculation by the flight crew.

GM23 Part DEF - RUNWAY SURFACE CONDITION(S)

(a) The runway surface conditions used in the RCR establish a common language between the aerodrome operator, the aeroplane manufacturer and the aeroplane operator.

(b) Aircraft de-icing chemicals and other contaminants are also reported but are not included in the list of runway surface condition descriptors because their effect on the runway surface friction characteristics and the RWYCC cannot be evaluated in a standardised manner.

GM24 Part DEF - RUNWAY SURFACE CONDITION DESCRIPTORS — GENERAL

The runway surface condition descriptors are used solely in the context of the RCR and are not intended to supersede or replace any existing World Meteorological Organization (WMO) definitions.
RUNWAY SURFACE CONDITION DESCRIPTORS — FROST

(a) Freezing refers to the freezing point of water (0 °C).

(b) Under certain conditions, frost can cause the surface to become very slippery, and it is then reported appropriately as downgraded RWYCC.

RUNWAY SURFACE CONDITION DESCRIPTORS — STANDING WATER

Running water of depth greater than 3 mm is reported as 'standing water' by convention.

RUNWAY SURFACE CONDITION DESCRIPTORS – WET ICE

Freezing precipitation can lead to runway conditions associated with wet ice from an aeroplane performance point of view. Wet ice can cause the surface to become very slippery. It is then reported appropriately as downgraded RWYCC.

GM25 Part DEF - LANDING DISTANCE AT TIME OF ARRIVAL

The landing distance data to be used for a landing performance assessment at time of arrival allow to establish an operationally achievable landing distance from 50ft above runway threshold to full stop that takes into account AFM procedures for final approach and landing and is provided as a function of the main influence parameters such as aeroplane mass and configuration, pressure altitude, wind, outside air temperature, runway slope and approach speed increments. It may be provided for use of automation such as autobrakes and autoland and may account for reverse thrust use. As the landing distance at time of arrival is the unfactored minimum landing distance achievable for the assumed conditions, an appropriate margin should be applied to this distance to determine the minimum LDA necessary for a safe stop.

GM26 Part DEF - SLIPPERY WET RUNWAY

(a) The surface friction characteristics of the runway are considered degraded when below the minimum standards.

(b) A portion of runway in the order of 100 m long may be considered significant.

GM27 Part DEF - FLIGHT RECORDER

A flight recorder may be crash-protected or lightweight and may be deployable or not. Crash-protected flight recorders are capable of withstanding very severe crash conditions such as those encountered during some accidents of large aeroplanes and large helicopters. 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), or a data link recorder (DLR). Lightweight flight recorders are usually designed to meet less demanding requirements than crash-protected flight recorders, which allows them to be lighter. A non-deployable flight recorder is permanently attached to the aircraft. A deployable flight recorder includes a part that is capable of automatically deploying from the aircraft.

GM28 Part DEF for terms used in MCAR-ARO and MCAR-SPO - FLIGHT MONITORING AND FLIGHT WATCH — RELEVANT SAFETY INFORMATION

Relevant safety information is any element that may affect the safety of the flight, such as:

(a) an aircraft technical failure (e.g. failures where flight operations personnel can help to calculate the landing distance or new trip fuel or to update the aerodrome minima);

(b) unforeseen hazards:

(1) air traffic (e.g. delays and/or long distance to complete the approach, extensive use of radar vectoring);

(2) meteorological conditions (e.g. DH and aerodrome operating minima, adverse or extreme meteorological conditions);

(3) aerodrome and runway status (e.g. insufficient runway length due to brake failure, obstruction or closure of the runway, runway contamination, failure or malfunction caused by on-ground navigation or approach equipment);

(4) navigation aid status (e.g. failure of the navigation aids);

(5) availability of communications (e.g. failure of communications capabilities, interruptions, interferences, change of frequency channels); and

(6) terrain and obstacles (e.g. geophysical phenomena (volcanic eruptions, earthquakes, tsunami), difficult terrain at an unplanned aerodrome (large bodies of water, mountains);

(c) updates of the operational flight plan when they affect the fuel reserves:

(1) diversion to an en route alternate (ERA) aerodrome, a destination alternate, or a take-off alternate aerodrome;

(2) change of the runway selected for landing if the new runway is shorter;

(3) location of the decision point or the point of no return (PNR) due to, for instance, change in altitude, in wind data, etc.;

(4) significant in-flight change of the flight route compared to the route in the flight planning; or

(5) significant deviation from the planned fuel consumption; and

(d) position reporting:

(1) flight-monitoring personnel should report in every phase of the flight: taxi, take-off, climb, cruise, cruise steep climb, descent, approach, landing;

(2) flight watch provides active tracking; and

(3) where no real-time automatic position-reporting is possible, the operator should have an acceptable alternative to ensure in-flight reporting at least every hour.

GM29 Part DEF for terms used in MCAR-ARO and MCAR-SPO- FUEL/ENERGY

The energy used for aircraft propulsion comes from various sources and is of various types.
A frequently used type of energy in aviation is derived from processing (in a piston or turbine engine) hydrocarbon-based fuels that include gasoline (leaded or unleaded), diesel, avgas, JET A-1, and JET B.

Hydrogen may also be used as fuel for fuel cell applications, which generate electricity that is used to generate propulsion. However, as current technologies already use other sources of energy for aircraft propulsion, such as stored electrical energy, the typical term 'fuel' has become restrictive and no longer covers emerging technologies.

Therefore, a broader, combined term is introduced to accommodate new types of energy, other than fuel, used for aircraft propulsion purposes.

The term 'fuel/energy' should cater for both typical fuel and any other type or source of energy used for aircraft propulsion, including but not limited to electrical energy stored in batteries.

When used in the combination 'fuel/energy', the term 'energy' only refers to the electrical energy used for aircraft propulsion purposes. It does not include any other form of stored electrical energy that is used on board an aircraft (e.g. batteries of EFBs, ELTs, underwater locating devices (ULDs), automatic external defibrillators (AEDs), or backup energy sources).

GM30 Part DEF for terms used in MCAR-ARO and MCAR-SPO - FUEL/ENERGY EN ROUTE ALTERNATE (ERA) AERODROME

Fuel/energy ERA aerodromes could be used in the following cases:

(a) 'fuel ERA aerodrome critical scenario': that aerodrome is used when additional fuel is required at the most critical point along the route to comply with point (c)(6) of point MCAR-CAT.OP.MPA.181 'Fuel/energy scheme — fuel/energy planning and in-flight re-planning policy — aeroplanes';

(b) 'fuel ERA aerodrome 3 %': that aerodrome is used when an operator reduces the contingency fuel to 3 %; and

(c) 'fuel ERA aerodrome PNR': that aerodrome is used at the PNR during isolated aerodrome operations.

GM31 Part DEF - DEFINITIONS OF TERMS RELATED TO ALL-WEATHER OPERATIONS

The following terms and concepts are used in the provisions related to all-weather operations in the AMC and GM to this Regulation:

'Advanced aircraft' means an aircraft with equipment in addition to that required for a basic aircraft for a given take-off, approach or landing operation.

'AFM or additional data from the TC/STC holder' — an AFM or additional data from the TC/STC holder may provide:

— limitations, in accordance with which the aircraft must be operated, as described under point 4.a of ERO.OPS.120. This means that the aircraft may NOT exceed those given values; or

— demonstrated capabilities, which are the assumptions, envelope or conditions that were used to demonstrate adequate performance to comply with the appropriate certification specifications.

However, some AFMs (especially for those aircraft or landing systems that were certified before the introduction of CS-AWO Issue 2) may not include all of the assumptions, envelope or conditions that were used to demonstrate adequate performance. Information regarding the assumptions, envelope, or conditions that were used to demonstrate adequate performance of a landing system can be provided by equivalent documentation issued by TC/STC holder.

Other types of information issued by the TC/STC holder may include (not an exhaustive list):

— equivalence between different aircraft models (types);

— equivalence between aircraft types and variants;

— landing systems equivalence;

— a list of runways with their demonstrated performance;

— a letter of no-technical objection/evaluation letter.

Note: 'TC/STC holder' should be understood as the holder of the certificate for the landing system.

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

'Continuous descent final approach (CDFA)': when the circling altitude/height is reached, it is acceptable to maintain altitude (level-off) and transition to the visual segment. The operator may provide a point in the visual segment in which the descent may be resumed to follow a continuous descent to a point approximately 15 m (50 ft) above the landing runway threshold or the point where the flare manoeuvre begins for the type of aircraft flown.

'Enhanced flight vision system (EFVS)-Approach (EFVS-A)' means a system that has been demonstrated to meet the criteria to be used for approach operations from a decision altitude/height (DA/H) or a minimum descent altitude/height (MDA/H) to 100 ft (30 m) threshold elevation while all system components are functioning as intended, but may have failure modes that could result in the loss of EFVS capability. It should be assumed for an EFVS-A that:

(a) the pilot will conduct a go-around at or above 100 ft threshold elevation, in the event of an EFVS failure; and

(b) descent below 100 ft above the threshold elevation through to touchdown and roll-out should be conducted using natural vision so that any failure of the EFVS does not prevent the pilot from completing the approach and landing.

'Enhanced flight vision system (EFVS)-Landing (EFVS-L)' means a system that has been demonstrated to meet the criteria to be used for approach and landing operations that rely on sufficient visibility conditions to enable unaided roll-out and to mitigate for loss of EFVS function.

'Head-up display (HUD) or equivalent display system' means a display system which presents flight information to the pilot's forward external field of view (FOV), and which does not significantly restrict the external view.

'Landing system' means an airborne equipment, which:

(a) provides automatic control of the aircraft during the approach and landing (i.e. automatic landing system); or

(b) has been demonstrated to meet the criteria to be used for approach and landing operations (e.g. HUD landing system, EFVS-L or any other approved system).

'Landing system assessment area (LSAA)' means the part of the runway that extends from the threshold to a distance of 600 m from the threshold.

Note — Although the landing systems certification criteria use a value greater than 600 m after the threshold to evaluate limit conditions, for the purpose of flight operations assessment a distance of 600 m is the relevant part as landing beyond this point is not expected to occur in day-to-day operations. The LSAA may not necessarily be coincident with the touchdown zone. The touchdown zone is specified in CS-ADR DSN.

'Low-visibility procedures (LVPs)' means procedures applied by an aerodrome for the purpose of ensuring safety during low-visibility operations (LVOs).

Regular runway means a runway whose characteristics fit within the acceptable limits demonstrated by the original equipment manufacturer (OEM) during certification. The classification of a runway as a 'regular runway' is different from one set of equipment to another.

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

'Satellite-based augmentation system (SBAS)' means a wide coverage augmentation system in which the user receives augmentation information from a satellite-based transmitter. The most common form of SBAS in Europe is the European Geostationary Navigation Overlay Service (EGNOS).

'Synthetic vision system (SVS)' means a system that displays data derived synthetic images of the external scene from the perspective of the flight deck.

'Landing area' means that part of a movement area intended for the landing or take-off of aircraft.

'Touchdown zone (TDZ)' means the portion of a runway, beyond the threshold, where landing aeroplanes are intended to first contact the runway.

'Type B instrument approach operations categories': where decision height (DH) and runway visual range (RVR) fall into different categories of operation, the instrument approach operation would be conducted in accordance with requirements of the most demanding category. This does not apply if the RVR and/or DH has been approved as operational credits.

GM32 Part DEF - EFVSs — DIFFERENCES WITH ENHANCED VISION SYSTEMS (EVSs)

(a) Introduction to EVSs

EVSs use sensing technology to improve a pilot's ability to detect objects and topographical features ahead of the aircraft. Different types of sensing technology are used on different aircraft installations. Sensing technologies used include forward-looking infrared, millimetre wave radiometry, millimetre wave radar or low-light level intensification; additional technologies may be developed in the future. The image from sensors may be displayed to the pilot in a number of different ways including 'head-up' and 'head-down' displays.

(b) EVSs and EFVSs

An EFVS is an EVS that is integrated with a flight guidance system, which presents the image from sensors to the pilot on a head-up display (HUD) or equivalent display. If EFVS equipment is certified according to the applicable airworthiness requirements and an operator holds the necessary specific approval, then an EFVS may be used for EFVS operations. An EFVS operation is an operation with an operational credit which allows operating in visibility conditions lower than those in which operations without the use of EFVS are permitted.

(c) Functions of EVSs

Depending on the capabilities of the particular system, EVSs may be useful during operations at night or in reduced visibility for the following:

(1) improving visibility of airport features and other traffic during ground operations;

(2) displaying terrain and obstructions in flight;

(3) displaying weather in flight;

(4) improving visibility of the runway environment during approach operations; and

(5) improving visibility of obstructions on a runway (e.g. aircraft, vehicles or animals) during take-off and approach operations.

(d) Limitations of EVSs

EVSs are a useful tool for enhancing situational awareness; however, each EVS installation has its own specific limitations. These may include:

(1) Performance variations depend on conditions including ambient temperature and lighting and weather phenomena. A system may provide very different image qualities in the same visibility depending on the particular phenomena causing restricted visibility, e.g. haze, rain, fog, snow, dust, etc.

(2) An EVS may not be able to detect certain types of artificial lighting. Light emitting diode (LED) lights have a much lower infrared signature than incandescent lights and therefore may not be detected by some types of EVSs. LED lighting is used for runway, taxiway and approach lighting at many airports.

(3) Monochrome display. EVSs will generally not be able to detect and display the colour of airport lighting. This means that colour coding used on airport lighting will not be visible to the pilot using an EVS.

(4) Many EVS installations do not have redundancy, so a single failure may lead to loss of EVS image.

(5) The location of the sensor on the airframe may mean that in certain conditions it could be susceptible to ice accretion or obscuration from impact damage from objects such as insects or birds.

(6) Where an EVS image is presented on a HUD or an equivalent display, the image needs to be consistent with the pilot's external view through the display. Particular installations may have limitations on the conditions under which this consistent image can be generated (e.g. crosswind conditions during approach).

(7) Imaging sensor performance can be variable and unpredictable. Pilots should not assume that a flightpath is free of hazards because none are visible in an EVS image.

(e) Considerations for the use of EVSs

EVSs may be used in all phases of flight and have significant potential to enhance the pilot's situational awareness. No specific approval is required for the use of an EVS; however, the operator is responsible for ensuring that the flight crew members have received training on the equipment installed on their aircraft in accordance with MCAR-ORO.FC.120. In addition, the operator is responsible for evaluating the risks associated with system limitations and for implementing suitable mitigation measures in accordance with MCAR-ORO.GEN.200(a)(3) before using the EVS.

The use of EVSs does not permit the use of different operating minima, and EVS images cannot replace natural vision for the required visual reference in any phase of flight including take-off, approach or landing.

An EVS that is not an EFVS cannot be used for EFVS operations and therefore does not obtain an operational credit.

GM33 Part DEF - INSTRUMENT APPROACH OPERATIONS

(a) Depending on the instrument approach procedure (IAP) in use, the lateral and vertical navigation guidance for an instrument approach operation may be provided by:

(1) a ground-based radio navigation aid; or

(2) computer-generated navigation data from ground-based, space-based or self-contained navigation aids or a combination of these.

(b) A non-precision approach (NPA) procedure flown as CDFA with vertical path guidance calculated by on-board equipment is considered to be a 3D instrument approach operation. Depending on the limitations of the equipment and information sources used to generate vertical guidance, it may be necessary for the pilot to cross-check this guidance against other navigational sources during the approach and to ensure that the minimum altitude/height over published step-down fixes is observed. CDFAs with manual calculation of the required rate of descent are considered 2D operations.

(c) Further guidance on the classification of an instrument approach operation based on the designed lowest operating minima is contained in Appendix J to ICAO Doc 9365 Manual of All-Weather Operations, Fourth Edition, 2017.

GM34 Part DEF - DECISION ALTITUDE (DA) OR DECISION HEIGHT (DH)

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

(b) For operations using DA, the aircraft altimeters are set to QNH. For operations using a barometric DH, the aircraft altimeters are set to QFE.

(c) For SA CAT I, SA CAT II, CAT II/III operations, the DH is based on the use of a radio altimeter or other devices capable of providing equivalent performance. The DH is determined with reference to threshold elevation, but the value of the DH set for the approach will be based on the height of the aircraft above the pre-threshold terrain, which may be higher or lower than the threshold.

(d) For convenience, when both expressions are used, they may be written in the form ‘decision altitude/height’ and abbreviated ‘DA/H’.

GM35 Part DEF - MINIMUM DESCENT ALTITUDE (MDA) OR MINIMUM DESCENT HEIGHT (MDH)

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

(b) For operations using MDA, the aircraft altimeters are set to QNH. For operations using a barometric MDH, the aircraft altimeters are set to QFE.

(c) For convenience, when both expressions are used, they may be written in the form 'minimum descent altitude/height' and abbreviated 'MDA/H'.

GM35.M Part DEF - PRINCIPAL PLACE OF BUSINESS

The Principal Place of Business refers to "the head office or registered office of the organisation within which the principal financial functions and operational control of the activities referred to in the Maldives Civil Aviation Regulations are exercised."

Verification of the effective location of the PPoB will be undertaken during the initial AOC certification process and maintained through continuous oversight activities thereafter.

Criteria for Determining Effective PPoB

To establish that the PPoB is effectively located within the Maldives, the operator must meet all the following criteria:

(a) Operational and Financial Decision-Making:

- The operator must demonstrate that operational and financial control, as well as key management decisions making, relevant to the organisation's operational and airworthiness activities in accordance with the applicable requirements, are controlled, decided and directed by the appointed key post holders, including the accountable manager, as a result of board (or other) meetings held at the PPoB as often as effective relevant decision-making requires.

  Note: Solely holding a few meetings a year at the place declared by the organization as PPoB would not constitute sufficient evidence of such operational or financial control.

(b) Location of Key Management Personnel:

- The physical offices of the following individuals must be based at the declared PPoB:
  - Accountable Manager
  - Safety Manager
  - Compliance Monitoring Manager
  - Nominated Persons for relevant operational functions

(c) Operational Control Centre:

- Where applicable, the Operational Control Centre shall be located at the PPoB or at a home-base airport within the Maldives.

(d) Accessibility of Records:

- All records regarding the management, operational and financial decisions affecting the direction, control and coordination of the organisation's activities and operations, within the scope of the applicable regulation, must be capable of physical inspection at the declared PPoB.

(e) Distinction Between Activity Site and PPoB:

- It is acknowledged that the PPoB may not necessarily coincide with the location where the majority of operational activities take place (e.g., training, maintenance). However, the requirement for financial and operational oversight to be conducted from the PPoB remains unaffected.

Part ERO - Essential Requirements for Air Operations

ERO.GEN.001 Scope

1. This Regulation lays down detailed rules for air operations with aeroplanes and helicopters, including ramp inspections of aircraft of operators under the safety oversight of another State when landed at aerodromes located in the Maldives.

2. This Regulation also lays down detailed rules on the conditions for issuing, maintaining, amending, limiting, suspending or revoking the certificates of operators of aircraft engaged in commercial air transport operations, the privileges and responsibilities of the holders of certificates as well as conditions under which operations shall be prohibited, limited or subject to certain conditions in the interest of safety.

3. This Regulation also lays down detailed rules on the conditions and procedures for the declaration by operators engaged in commercial specialised operations of aeroplanes and helicopters or in non-commercial operation of complex motor-powered aircraft, including non-commercial specialised operations of complex motor-powered aircraft, of their capability and the availability of the means to discharge the responsibilities associated with the operation of aircraft, and for the oversight of such operators.

4. This Regulation also lays down detailed rules on the conditions under which certain high-risk commercial specialised operations shall be subject to authorisation in the interest of safety, and on the conditions for issuing, maintaining, amending, limiting, suspending or revoking the authorisations.

5. This Regulation shall not apply to air operations with products, parts, appliances, personnel and organisations while carrying out military, customs, police, search and rescue, fire fighting, coastguard or similar activities or services. All such activities or services shall have due regard as far as practicable to the objectives of this Regulation.

6. This Regulation shall not apply to air operations with airships.

7. This Regulation shall not apply to air operations with balloons and sailplanes. However, in respect of such air operations with balloons, other than tethered gas balloons, and sailplanes, the requirements in respect of oversight shall apply.

ERO.GEN.002 Definitions

For the purposes of this Regulation:

(1) 'aeroplane' means an engine-driven fixed-wing aircraft heavier than air that is supported in flight by the dynamic reaction of the air against its wings;

(1a) 'helicopter' means a heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes;

(1b) 'balloon' means a manned lighter-than-air aircraft which is not power-driven and sustains flight through the use of either a lighter-than-air gas or an airborne heater, including gas balloons, hot-air balloons, mixed balloons and, although power-driven, hot-air airships;

(1c) 'sailplane' means a heavier-than-air aircraft that is supported in flight by the dynamic reaction of the air against its fixed lifting surfaces, the free flight of which does not depend on an engine;

(1d) 'commercial operation' means any operation of an aircraft, in return for remuneration or other valuable consideration, which is available for the public or, when not made available to the public, which is performed under a contract between an operator and a customer, where the latter has no control over the operator;

(1e) 'tethered gas balloon' means a gas balloon with a tether system that continuously anchors the balloon to a fixed point during operation;

(2) 'performance class B aeroplanes' means aeroplanes powered by propeller engines with a maximum operational passenger seating configuration of nine or less and a maximum take-off mass of 5 700 kg or less;

(3) 'public interest site (PIS)' means a site used exclusively for operations in the public interest;

(4) 'operation in performance class 1' means an operation that, in the event of failure of the critical engine, the helicopter is able to land within the rejected take-off distance available or safely continue the flight to an appropriate landing area, depending on when the failure occurs;

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

(6) 'air taxi operation' means, for the purpose of flight time and duty time limitations, a non-scheduled on demand commercial air transport operation with an aeroplane with a maximum operational passenger seating configuration ('MOPSC') of 19 or less;

(7) 'specialised operation' means any operation, other than commercial air transport operation, where the aircraft is used for specialised activities such as agriculture, construction, photography, surveying, observation and patrol, aerial advertisement, maintenance check flights;

(8) 'high risk commercial specialised operation' means any commercial specialised aircraft operation carried out over an area where the safety of third parties on the ground is likely to

be endangered in the event of an emergency, or, as determined by the competent authority of the place where the operation is conducted, any commercial specialised aircraft operation that, due to its specific nature and the local environment in which it is conducted, poses a high risk, in particular to third parties on the ground;

(9) 'introductory flight' means any operation against remuneration or other valuable consideration consisting of an air tour of short duration for the purpose of attracting new trainees or new members, performed either by a training organisation referred to in MCAR-FCL or by an organisation created with the aim of promoting aerial sport or leisure aviation;

(10) 'competition flight' means any flying activity where the aircraft is used in air races or contests, as well as where the aircraft is used to practice for air races or contests and to fly to and from racing or contest events;

(11) 'flying display' means any flying activity deliberately performed for the purpose of providing an exhibition or entertainment at an advertised event open to the public, including where the aircraft is used to practice for a flying display and to fly to and from the advertised event.

Additional definitions are laid down in Part DEF.

GM1 ERO.GEN.002 (1)(d) Definitions -NON-COMMERCIAL OPERATIONS — EXAMPLES

The following examples of operations are not covered by the definition of commercial operations or by that of specialised operations. They are identified as non-commercial operations. Some of these flights are listed by an AOC holder in its operations manual Part-A, ch. 8.7 as non-commercial operations (as specified in MCAR-ORO, AMC3 ORO.MLR.100) and covered by the provisions of ORO.AOC.125 in MCAR-ORO.

Some of these operations are performed on an irregular basis. The operator and its crew members may consider them as non-routine operations, situated outside their operational routine. This constitutes a risk that the operator should include in its risk assessment process.

The operations listed below are performed with aircraft having a certificate of airworthiness or a permit to fly and being already listed on an AOC or on a declaration. They are grouped by the purpose of the flight.

Demonstration flights

(a) A flight performed with the purpose of demonstrating:

(1) an aircraft's handling, performance and functionalities to buyers or lessees;

(2) an aircraft's flying characteristics or the operational procedures to the competent authority, for verification of compliance with the operational requirements, as per MCAR-ARO, ARO.GEN.310(a).

Other terms used: (route) proving flight; operational evaluation flight.

(b) Flight at the end of lease or upon transfer of ownership: a flight performed at the request of the operator to verify compliance of the aircraft with the contractual specifications of the lessee/lessor or buyer.

Other term used: acceptance flight.

(c) 'Public relations (PR) flight': a flight carrying official or media representatives as non-paying passengers. Sometimes personnel of the operator are included. The PR flight is performed in the interest of the operator's own business.

Testing the results of maintenance work is outside the scope of demonstration flights. Such flights are not expected to execute flight manoeuvres where the aircraft might react with an unexpected behaviour. This is covered by a maintenance check flight (listed below).

Maintenance check flights

(d) Maintenance check flight (MCF)

The definition of an MCF is provided in this regulation Definition Section. The provisions on MCF are developed MCAR-NCO, Subpart E Section 6 and MCAR-SPO, Subpart E Section 5.

Ferry flights – flights changing the location of the aircraft

A ferry flight could be performed for the following purposes:

(e) The aircraft is moved to and from a maintenance base. The aircraft may be operated under the permit-to-fly conditions.

Examples:

(1) unpressurised flight,

(2) gear-down flight,

(3) flight with one engine inoperative.

(f) The aircraft is moved from one location to another, e.g. from the manufacturer, refurbishment location, previous owner, lessor/lessee, long-term storage to the operator's base.

Other term used: delivery flight.

(g) The aircraft and its aircrew are positioned to an aerodrome from which a further commercial air transport (CAT) operation will be performed.

Other term used: positioning flight.

(h) The aircraft is moved from its current location to a secure location for various reasons (e.g. to remove it from a hazardous area).

Other term used: recovery flight.

Training flights

(i) A flight for instructional purposes for the operator's own flight crew.

Operator training and checking flight: a flight performed by the operator with the purpose of training, checking and/or familiarising a flight crew member with the operator's procedures linked to the aircraft being operated. A training flight is conducted using the procedures detailed in the operator's documentation.

Line flying under supervision (LIFUS), line checks and similar flights are not included in this category, as they are usually performed during commercial operations (CAT flights).

Other non-commercial flights

(j) 'Corporate flight': a flight conducted for business purposes: the operator may carry its own personnel and/or property in the interest of business.

Other terms used: business flight, private flight.

(k) 'Leisure flight': a flight operated by an operator for personal or recreational purposes, not associated with a business or a profession.

Other term used: private flight.

(l) Managed flight: a flight operated by an operator for the business purposes of the aircraft owner, with no remuneration or other valuable consideration involved.

Charity flights, humanitarian flights

(m) 'Charity flight': a flight performed for the benefit of a registered charity organisation, carrying persons and/or goods. For such a flight, the proceeds of the raffled flight go to the charity. Any additional proceeds are limited to the recovery of direct costs of the flight.

(n) 'Humanitarian flight': a flight with the purpose of carrying relief personnel and/or life-saving supplies (basic necessities) during or after an emergency or a natural disaster, or to evacuate persons from an endangered area.

SUBPART GEN: GENERAL REQUIREMENTS

ERO.GEN.105 Air operations

1. Operators shall only operate an aeroplane or a helicopter for the purpose of Commercial Air Transport (hereinafter "CAT") operations as specified in MCAR-ORO and MCAR-CAT.

1a. Operators engaged in CAT operations starting and ending at the same aerodrome/operating site with Performance class B aeroplanes or non-complex helicopters shall comply with the relevant provisions of MCAR-ORO and MCAR-CAT.

2. Operators shall comply with the relevant provisions of MCAR-SPA when operating:

   (a) aeroplanes and helicopters used for:
   (i) operations using performance-based navigation (PBN);
   (ii) operations in accordance with minimum navigation performance specifications (MNPS);
   (iii) operations in airspace with reduced vertical separation minima (RVSM);
   (iv) low visibility operations (LVO);

   (b) aeroplanes and helicopters used for the transport of dangerous goods (DG);

   (c) two-engined aeroplanes used for extended range operations (ETOPS) in commercial air transport;

   (d) helicopters used for commercial air transport operations with the aid of night vision imaging systems (NVIS);

   (e) helicopters used for commercial air transport hoist operations (HHO);

   (f) helicopters used for commercial air transport emergency medical service operations (HEMS); and

   (g) helicopters used for offshore operations (HOFO).

3. Operators of complex motor-powered aeroplanes and helicopters involved in non-commercial operations shall declare their capability and means to discharge their responsibilities associated with the operation of aircraft and operate the aircraft in accordance with the provisions specified in MCAR-ORO and MCAR-NCC. Such operators when engaged in non-commercial specialised operations shall operate the aircraft in accordance with the provisions specified in MCAR-ORO and MCAR-SPO instead.

4. Operators of other-than-complex motor-powered aeroplanes and helicopters involved in non-commercial operations, including non-commercial specialised operations, shall operate the aircraft in accordance with the provisions set out in MCAR-NCO.

5. Training organisations referred to as per the Regulation MCAR-Aircrew, when conducting flight training into, within or out of Maldives, shall operate:

   (a) complex motor-powered aeroplanes and helicopters in accordance with the provisions specified in MCAR-NCC;

   (b) other aeroplanes and helicopters in accordance with the provisions specified in MCAR-NCO.

6. Operators shall only operate an aeroplane or a helicopter for the purpose of commercial specialised operations in accordance with the requirements specified in MCAR-ORO and MCAR-SPO.

7. Flights taking place immediately before, during or immediately after specialised operations and directly connected to those operations shall be operated in accordance with paragraphs 3, 4 and 6, as applicable. Except for crew members, persons other than those indispensable to the mission shall not be carried on board.

ERO.GEN.106 Derogations

1. By way of derogation from ERO.GEN.105 and Subpart P to MCAR 21 concerning the permit to fly, the following flights shall continue to be operated under the requirements specified in the national law of the State in which the operator has its principal place of business or, where the operator has no principal place of business, the place where the operator is established or resides::

   (a) flights related to the introduction or modification of aeroplane or helicopter types conducted by design or production organisations within the scope of their privileges;

   (b) flights carrying no passengers or cargo, where the aeroplane or helicopter is ferried for refurbishment, repair, inspections, delivery, export or similar purposes, provided that the aircraft is not listed on an air operator certificate or on a declaration.

2. By way of derogation from the first sentence of ERO.GEN.105 (3), operators of complex motor-powered aeroplanes with a maximum certificated take-off mass (MCTOM) at or below 5 700 kg, equipped with turboprop engines, involved in non-commercial operations, may operate those aircraft only in accordance with MCAR-NCO.

3. By way of derogation from ERO.GEN.105 (5)(a), training organisations shall, when conducting flight training on complex motor-powered aeroplanes with a maximum certificated take-off mass (MCTOM) at or below 5 700 kg, equipped with turboprop engines, may operate those aircraft in

accordance with MCAR-NCO.

ERO.GEN.108 Flight time limitations

CAT Operations shall be subject to the requirements of Subpart FTL of MCAR-ORO.

ERO.GEN.109 Flight crew requirement for maintenance check flights

A pilot having acted, before 31 December 2021, as a pilot-in-command on a maintenance check flight that in accordance with the definition in point SPO.SPEC.MCF.100 in MCAR-SPO is categorised as a Level A maintenance check flight, shall be given credit for the purpose of complying with point SPO.SPEC.MCF.115(a)(1) of that Regulation. In that case, the operator shall ensure that the pilot-in-command receives a briefing on any differences identified between the operating practices established before 31 December 2021 and the obligations provided in Section 5 of Subpart E of MCAR-SPO including those derived from the related procedures established by the operator.

ERO.GEN.110 - Ramp inspections

1. Ramp inspections of aircraft of operators under the safety oversight of a third country shall be carried out in accordance with Subpart RAMP of MCAR-ARO.
2. CAA shall ensure that alcohol testing of flight crew and cabin crew members is carried out with regard to operators under their own oversight as well as with regard to operators under the oversight of a third country. Such testing shall be performed by ramp inspectors within the framework of the ramp inspection programme of Subpart RAMP of MCAR-ARO
3. By way of derogation from paragraph 2, CAA may ensure alcohol testing of flight crew and cabin crew members to be carried out by other authorised officials and outside the framework of the ramp inspection programme of Subpart RAMP of MCAR-ARO, provided that such alcohol testing meets the same objectives and adheres to the same principles as tests carried out under the framework of Subpart RAMP of MCAR-ARO.
4. (Reserved)

GM1 ERO.GEN.110 (3) Ramp inspections - GENERAL — ALCOHOL TESTING

If alcohol testing of flight crew and cabin crew is carried out by other authorised officials, e.g. by the police, and outside the framework of the ramp inspection programme of Subpart RAMP of MCAR-ARO, those other authorised officials do not need to comply with the requirements for qualification of inspectors of Subpart RAMP of MCAR-ARO. CAA should ensure that these officials are qualified for carrying out alcohol tests.

SUBPART OPS: AIR OPERATIONS

ERO.OPS.100 Air Operations

1. The operation of aircraft shall comply with the essential requirements set out in ERO.OPS.120

2. Unless otherwise determined, operators engaged in commercial operations shall demonstrate their capability and means of discharging the responsibilities associated with their privileges. These capabilities and means shall be recognised through the issuance of a certificate. The privileges granted to the operator and the scope of the operations shall be specified in the certificate.

3. Unless otherwise determined, operators engaged in the non-commercial operation of complex motor-powered aircraft shall declare their capability and means of discharging the responsibilities associated with the operation of that aircraft.

4. Cabin crew involved in the operation of aircraft shall comply with the essential requirements. Those involved in commercial operations shall hold a licence.

ERO.OPS.110 Flexibility Provisions

1. The provisions of this Regulation and its implementing rules shall not prevent MCAA from reacting immediately to a safety problem which involves a product, person or organisation subject to the provisions of this Regulation.

2. (Reserved)

3. The measures designed to amend non-essential elements of this Regulation, *inter alia*, by supplementing it, and relating to whether an inadequate level of safety or a shortcoming in this Regulation or its implementing rules justify initiating their amendment and whether the measures adopted pursuant to paragraph 1 may be continued, shall be adopted in accordance with the regulatory procedure.

4. MCAA may grant exemptions from the substantive requirements laid down in this Regulation and its implementing rules in the event of unforeseen urgent operational circumstances or operational needs of a limited duration, provided the level of safety is not adversely affected.

5. (Reserved)

6. (Reserved)

ERO.OPS.120 Essential Requirements

1. General

1.1. A flight must not be performed if the crew members and, as appropriate, all other operations personnel involved in its preparation and execution are not familiar with applicable laws, regulations and procedures, pertinent to the performance of their duties, prescribed for the areas to be traversed, the aerodromes planned to be used and the air navigation facilities relating thereto.

1.2. A flight must be performed in such a way that the operating procedures specified in the Flight Manual or, where required the Operations Manual, for the preparation and execution of the flight are followed.

1.3. Before every flight, the roles and duties of each crew member must be defined. The pilot in command must be responsible for the operation and safety of the aircraft and for the safety of all crew members, passengers and cargo on board.

1.4. Articles or substances, which are capable of posing a significant risk to health, safety, property or the environment, such as dangerous goods, weapons and ammunition, must not be carried on any aircraft, unless specific safety procedures and instructions are applied to mitigate the related risks.

1.5. All necessary data, documents, records and information to record the respect of the conditions specified in point 5.3 must be retained for each flight and kept available and protected against unauthorised modification for a minimum period of time compatible with the type of operation.

2. Flight preparation

A flight must not be commenced unless it has been ascertained by every reasonable means available that all the following conditions are complied with:

(a) adequate facilities directly required for the flight and for the safe operation of the aircraft, including communication facilities and navigation aids, are available for the execution of the flight, taking into account available Aeronautical Information Services documentation;

(b) the crew must be familiar with and passengers informed of the location and use of relevant emergency equipment. Sufficient information, related to the operation and specific to the equipment installed, regarding emergency procedures and use of cabin safety equipment must be made available to crew and passengers;

(c) the pilot-in-command must be satisfied that:
    (i) the aircraft is airworthy as specified in point 6;

(ii) if required, the aircraft is duly registered and the appropriate certificates with respect thereto are aboard the aircraft;
(iii) instruments and equipment as specified in point 5 required for the execution of that flight are installed in the aircraft and are operative, unless waived by the applicable MEL or equivalent document;
(iv) the mass of the aircraft and centre of gravity location are such that the flight can be conducted within limits prescribed in the airworthiness documentation;
(v) all cabin baggage, hold luggage and cargo is properly loaded and secured; and
(vi) the aircraft operating limitations as specified in point 4 will not be exceeded at any time during the flight;

(d) information regarding meteorological conditions for departure, destination and, where applicable, alternate aerodromes, as well as enroute conditions, must be available to the flight crew. Special attention must be given to potentially hazardous atmospheric conditions;

(e) appropriate mitigation measures or contingency plans must be in place to deal with potentially hazardous atmospheric conditions expected to be encountered in flight;

(f) for a flight based on visual flight rules, meteorological conditions along the route to be flown must be such as to render compliance with those flight rules possible. For a flight based on instrument flight rules a destination and where applicable alternate aerodrome(s) where the aircraft can land must be selected, taking into account in particular the forecasted meteorological conditions, the availability of air navigation services, the availability of ground facilities and the instrument flight procedures approved by the State in which the destination and/or alternate aerodrome is located;

(g) the amount of fuel/energy for propulsion and consumables on board must be sufficient to ensure that the intended flight can be completed safely, taking into account the meteorological conditions, any element affecting the performance of the aircraft and any delays that are expected in flight. In addition, a fuel/energy reserve must be carried to provide for contingencies. Procedures for in-flight fuel/energy management must be established when relevant.

3. Flight operations

With regard to flight operations, all the following conditions must be complied with:

(a) where relevant for the type of aircraft, during take-off and landing, and whenever deemed necessary by the pilot in command in the interest of safety, each crew member must be seated at their crew station and must use the provided restraint systems;

(b) where relevant for the type of aircraft, all flight crew members required to be on flight deck duty must be and remain at their station, with their seatbelts fastened except en-route for physiological or operational needs;

(c) where relevant for the type of aircraft and the type of operation, before take-off and landing, during taxiing and whenever deemed necessary in the interest of safety, the pilot in command must ensure that each passenger is properly seated and secured;

(d) a flight must be performed in such a way that appropriate separation from other aircraft is maintained and that adequate obstacle clearance is ensured, during all phases of the flight. Such separation must at least be those required by the applicable rules of the air, as appropriate to the type of operation;

(e) a flight must not be continued unless known conditions continue to be at least equivalent to those in point 2. Furthermore, for a flight based on instrument flight rules, an approach toward an aerodrome must not be continued below certain specified heights or beyond a certain position, if prescribed visibility criteria are not met;

(f) in an emergency, the pilot in command must ensure that all passengers are instructed in such emergency action as may be appropriate to the circumstances;

(g) a pilot-in-command must take all necessary measures so as to minimise the consequences on the flight of disruptive passenger behaviour;

(h) an aircraft must not be taxied on the movement area of an aerodrome, or its rotor must not be turned under power, unless the person at the controls is appropriately competent;

(i) the applicable in-flight fuel/energy management procedures must be used, when relevant.

4. Aircraft performance and operating limitations

4.1. An aircraft must be operated in accordance with its airworthiness documentation and all related operating procedures and limitations as expressed in its approved flight manual or equivalent documentation, as the case may be. The flight manual or equivalent documentation must be available to the crew and kept up to date for each aircraft.

4.2. Notwithstanding point 4.1, for operations with helicopters a momentary flight through the limiting height velocity envelope may be permitted, provided that safety is ensured.

4.3. The aircraft must be operated in accordance with the applicable environmental documentation.

4.4. A flight must not be commenced or continued unless the aircraft's scheduled performance, considering all factors which significantly affect its performance level, allows all phases of flight to be executed within the applicable distances/areas and obstacle clearances at the planned operating mass. Performance factors which significantly affect take-off, en-route and approach/landing are, particularly:
(a) operating procedures;
(b) pressure altitude of the aerodrome;

(c) weather conditions (temperature, wind, precipitation and visual range);
(d) size, slope and condition of the take-off/landing area; and
(e) the condition of the airframe, the power plant or the systems, taking into account possible deterioration.

4.5. Such factors must 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, as appropriate to the type of operation.

5. Instruments, data and equipment

5.1. An aircraft must be equipped with all navigation, communication and other equipment necessary for the intended flight, taking account of air traffic regulations and rules of the air applicable during any phase of the flight.

5.2. When relevant, an aircraft must be equipped with all necessary safety, medical, evacuation and survival equipment, taking account of the risks associated to the areas of operation, the routes to be flown, the flight altitude and the duration of the flight.

5.3. All data necessary for the execution of the flight by the crew must be updated and available on board the aircraft taking account of applicable air traffic regulations, rules of the air, flight altitudes and areas of operation.

6. Continuing airworthiness and environmental compatibility of products

6.1. The aircraft must not be operated unless:
(a) the aircraft is airworthy and in a condition for safe and environmentally compatible operation;
(b) the operational and emergency equipment necessary for the intended flight is serviceable;
(c) the airworthiness document and, if applicable, the noise certificate of the aircraft is valid; and
(d) the maintenance of the aircraft is performed in accordance with the applicable requirements.

6.2. Before each flight or a series of consecutive flights, the aircraft must be inspected, through a pre-flight check, to determine whether it is fit for the intended flight.

6.3. The aircraft must not be operated unless it is released to service by qualified persons or organisations, after maintenance. The signed release to service must contain in particular, the basic details of the maintenance carried out.

6.4. Records necessary to demonstrate the airworthiness and environmental compatibility status of the aircraft must be kept, and protected against, unauthorised modification for the period of time corresponding to the applicable continuing airworthiness requirements, until the

information contained has been superseded by new information equivalent in scope and detail but in any event not less than 24 months.

6.5. All modifications and repairs must comply with the essential requirements for airworthiness and, if applicable, the environmental compatibility of products. The substantiating data supporting compliance with the airworthiness requirements and requirements for the environmental compatibility of products must be retained and protected against unauthorised modification.

6.6. It is the responsibility of the aircraft operator to ensure that a third party performing the maintenance complies with the operator's safety and security requirements.

7. Crew members

7.1. The number and composition of the crew must be determined taking into account:
(a) the certification limitations of the aircraft, including if applicable, the relevant emergency evacuation demonstration;
(b) the aircraft configuration; and
(c) the type and duration of operations.

7.2. The pilot in command must have the authority to give all commands and take any appropriate actions for the purpose of securing the operation and the safety of the aircraft and of persons and/or property carried therein.

7.3. In an emergency situation, which endangers the operation or the safety of the aircraft and/or persons on board, the pilot in command must take any action he/she considers necessary in the interest of safety. When such action involves a violation of local regulations or procedures, the pilot in command must be responsible for notifying the appropriate local authority without delay.

7.4. Without prejudice to point 8.12, when other persons are carried on board, emergency or abnormal situations may only be simulated if those persons have been duly informed and are aware of the associated risks before boarding the flight.

7.5. No crew member must allow their task achievement/decision making to deteriorate to the extent that flight safety is endangered because of the effects of fatigue, taking into account, inter alia, fatigue accumulation, sleep deprivation, number of sectors flown, night duties or time zone changes. Rest periods must provide sufficient time to enable crew members to overcome the effects of the previous duties and to be well rested by the start of the following flight duty period.

7.6. A crew member must not perform allocated duties on board an aircraft when under the influence of psychoactive substances or alcohol or when unfit due to injury, fatigue, medication, sickness or other similar causes.

8. Additional requirements for commercial air transport and other operations subject to a certification or declaration requirement performed with aeroplanes, helicopters or tilt rotor aircraft

8.1 The operation must not be undertaken unless the following conditions are met:

(a) the aircraft operator must have directly or through agreements with third parties the means necessary for the scale and scope of the operations. Those means comprise but are not limited to the following: aircraft, facilities, management structure, personnel, equipment, documentation of tasks, responsibilities and procedures, access to relevant data and record keeping;

(b) the aircraft operator must use only suitably qualified and trained personnel and implement and maintain training and checking programmes for the crew members and other relevant personnel that are necessary to ensure the currency of their certificates, ratings and qualifications;

(c) as appropriate for the type of activity undertaken and the size of the organisation, the aircraft operator must implement and maintain a management system to ensure compliance with the essential requirements set out in this Regulation, manage safety risks and aim for continuous improvement of this system;

(d) the aircraft operator shall establish an occurrence reporting system, as part of the management system under point (c), in order to contribute to the aim of continuous improvement of the safety.

8.1.a The operator must establish a MEL or equivalent document, taking account of the following:
(i) the document must provide for the operation of the aircraft, underspecified conditions, with particular instruments, items of equipment or functions inoperative at the commencement of the flight;
(ii) the document must be prepared for each individual aircraft, taking account of the operator's relevant operational and maintenance conditions; and
(iii) the MEL must be based on the Master Minimum Equipment List (MMEL), if available, and must not be less restrictive than the MMEL;

8.2. The operation must only be undertaken in accordance with an aircraft operator's operations manual. Such manual must contain all necessary instructions, information and procedures for all aircraft operated and for operations personnel to perform their duties. Limitations applicable to flight time, flight duty periods and rest periods for crew members must be specified. The operations manual and its revisions must be compliant with the approved flight manual and be amended as necessary.

8.3. The aircraft operator shall establish procedures, as appropriate, so as to minimise the consequences to safe flight operations of disruptive passenger behaviour.

8.4. The aircraft operator must develop and maintain security programmes adapted to the aircraft and the type of operation including particularly:
(i) security of the flight crew compartment;
(ii) aircraft search procedure checklist;
(iii) training programmes;
(iv) protection of electronic and computer systems to prevent intentional and non-intentional system interference and corruption.

8.5. When security measures may adversely affect the safety of operations, the risks must be assessed and appropriate procedures developed to mitigate safety risks, this may necessitate the use of specialist equipment.

8.6. The aircraft operator must designate one pilot amongst the flight crew as the pilot in command.

8.7. The prevention of fatigue must be managed through a fatigue management system. For a flight, or series of flights, such a system needs to address flight time, flight-duty periods, duty and adapted rest periods. Limitations established within the fatigue management system must take into account all relevant factors contributing to fatigue such as, in particular, number of sectors flown, time-zone crossing, sleep deprivation, disruption of circadian cycles, night hours, positioning, cumulative duty time for given periods of time, sharing of allocated tasks between crew members, and also the provision of augmented crews.

8.8. The aircraft operator must ensure that the tasks specified in point 6.1 and those described in points 6.4 and 6.5 are controlled by an organisation responsible for the continuing airworthiness management.

8.9. The aircraft operator must ensure that the release to service required by point 6.3 is issued by an organisation qualified for the maintenance of products, parts and not-installed equipment.

8.10. The organisation referred to in 8.8 shall establish an organisation manual providing, for use and guidance of personnel concerned, a description of all continuing airworthiness procedures of the organisation.

8.11. A checklist system must be available for use, as applicable, by crew members in all phases of operation of the aircraft under normal, abnormal and emergency conditions and situations. Procedures must be established for any reasonably foreseeable emergency situation.

8.12. Emergency or abnormal situations must not be simulated when passengers or cargo are being carried.