PART I

DEFINITIONS AND ABBREVIATIONS

FOREWORD
CAR PART I

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1 The UAE General Civil Aviation Authority, known in these regulations as the “Authority” has implemented CAR Part I within CAR Part I based on the European Joint Aviation Requirements (JAR 1), and the ICAO Annexes.

2 Reference to a JAR in this CAR Part I may still be used for clarification and guidance.

3 This CAR Part I contains definitions and abbreviations of terms used in other CAR Codes. CAR Part I is based on those definitions contained in ICAO Annexes, and partly on the JAR 1 and FAR Part 1.

4 Definitions which are identical to those in the ICAO Annexes are marked thus #. Definitions which are identical to those in FAR Part I are marked thus *.

5 [New, amended and corrected text will be enclosed within heavy brackets until a subsequent “amendment” is issued.]

6 “she”/”her” to be substituted when/as appropriate throughout these Regulations.

7 This issue is dated January, 2008. All pages of this edition of CAR Part I are now current.
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SECTION 1
DEFINITIONS AND ABBREVIATIONS

CAR 1.1 General Definitions

‘Abortive Start’ (turbine engines) means an attempt to start, in which the engine lights up, but fails to accelerate.
NOTE: The handling of the engine is assumed to be in accordance with the instructions laid down by the engine manufacturer to be followed in these circumstances.

‘Acceleration Datum Conditions’ (turbine engines) means the engine conditions, e.g. rotational speed, torque, exhaust gas temperature, as appropriate, from which, during the type endurance test, the specified accelerations to 95% of take-off power and/or thrust is timed. Unless otherwise agreed by the Authority, the power and/or thrust at the acceleration datum conditions is not greater than 10% of take-off power and/or thrust and the time to 95% of take-off power and/or thrust is not greater than 5 seconds.

‘Accepted/Acceptable’ means not objected to by the Authority as suitable for the purpose intended.

‘Accredited Medical Conclusion’ means the conclusion reached by one or more medical experts acceptable to the GCAA for the purposes of the case concerned, in consultation with flight operations or other experts as necessary.

‘Adjustable Pitch Propeller’ means a propeller, the pitch setting of which can be conveniently changed in the course of ordinary field maintenance, but which cannot be changed when the propeller is rotating.

‘Aerial Work’ means an aircraft operation in which an aircraft is used for specialised services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc.

‘Aerobatic Flight’ means manoeuvres intentionally performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude, or an abnormal variation in speed.

‘Aerodrome’ means a defined area on land or water intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

‘Aerodrome Operating Minima’ means the limits of usability of an aerodrome for;

a. take-off, expressed in terms of runway visual range and/or visibility, and, if necessary, cloud conditions;

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

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

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

‘Aerodrome Traffic Zone’ means an airspace of defined dimensions established around an aerodrome for the protection of aerodrome traffic.

‘Aeronautical Information Publication’ means a publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.
*‘Aerodynamic coefficients’ means non-dimensional coefficients for aerodynamic forces and moments.

#‘Aeroplane’ means a power driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces, which remain fixed under given conditions of flight.

*‘Airborne’ means entirely supported by aerodynamic forces (JAR–25 only).

#‘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.

#‘Aircraft Flight Manual’ means a manual associated with the Certificate of Airworthiness, containing limitations within which the aircraft is to be considered airworthy, and instructions and information necessary to the flight crew members for the safe operation of the aircraft.

#‘Aircraft Operating Manual’ means a manual, acceptable to the State of the operator, containing normal, abnormal and emergency procedures, checklists, limitations, performance information, details of the aircraft systems and other material relevant to the operation of the aircraft.

‘Aircraft Type’ as used with respect to;
   a. licensing and operations of flight crew, is defined in JAR–FCL;
   b. type certification of aircraft, is defined in JAR–21;
   c. cabin crew, is defined in CAR–OPS; or
   d. certifying staff, is defined in CAR–Part V.

‘Aircraft Variant’ as used with respect to the licensing and operation of flight crew, means an aircraft of the same basic certificated type which contain modifications not resulting in significant changes of handling and/or flight characteristic, or flight crew complement, but causing significant changes to equipment and/or procedures.

*‘Airframe’ means the fuselage, booms, nacelles, cowlings, fairings, aerofoil surfaces (including rotors but excluding propellers and rotating aerofoils of engines), and landing gear of an aircraft and their accessories and controls.

#‘Air Operator Certificate (AOC)’ means a certificate authorising an operator to carry out specific commercial air transport operations

‘Air Service’ means an air service performed by aircraft for the public transport of passengers, cargo or mail for remuneration or hire.

‘Air Traffic’ means all aircraft in flight or operating on the manoeuvring area of an aerodrome.

‘Air Traffic Control Clearance’ means authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

‘Air Traffic Control Unit’ means a generic term meaning variously, area control centre, approach control office or aerodrome control tower.

‘Air Traffic Service (ATS)’ means a generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service).
‘Air Traffic Services Airspace’ means airspace of defined dimensions, alphabetically designated, within which specific types of flights may operate and for which air traffic services and rules of operation are specified.

‘Air Transport Operator’ means an operator of an aircraft engaged in the transportation of passengers, cargo and mail for remuneration or hire offering service to the public on demand and not to a published schedule.

‘Airway’ means a control area or portion thereof established in the form of a corridor equipped with radio navigation aids.

‘Alerting Service’ means a service provided to notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.

#‘Alternate Aerodrome’ means an 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. An alternate aerodrome may be the aerodrome of departure. Alternate aerodromes include the following:

a. Take-off alternate. An alternate aerodrome at which an aircraft can land should this become neccesary shortly after take-off and it is not possible to use the aerodrome of departure.

b. En-route alternate. An alternate aerodrome at which an aircraft would be able to land after experiencing an abnormal or emergency condition while en-route.

c. ETOPS en-route alternate. A suitable and appropriate alternate aerodrome at which an aeroplane would be able to land after experiencing an engine shutdown or other abnormal or emergency condition while en-route in an ETOPS operation.

d. Destination alternate. An alternate aerodrome to which an aircraft may proceed should it become either impossible or inadvisable to land at the aerodrome of intended landing.

‘Altitude’ means the vertical distance of a level, a point or an object considered as a point, measured from mean sea level (msl.).

*‘Appliance’ means any instrument, mechanism, equipment, part, apparatus, appurtenance, or accessory, including communications equipment, that is used or intended to be used in operating or controlling an aircraft in flight, is installed in or attached to the aircraft, and is not part of an airframe, engine, or propeller.

‘Applicant’ means a person applying for approval of an aircraft or any part thereof.

‘Approach and Landing Phase Helicopters’ means that part of the flight from 300 m (1 000 ft) above the elevation of the FATO, if the flight is planned to exceed this height, or from the commencement of the descent in the other cases, to landing or to the balked landing point.

#‘Approach and Landing Operations using Instrument Approach Procedures’ means Instrument approach and landing operations are classified as follows:

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

b. Approach and landing operations with vertical guidance: An instrument approach and landing which utilizes lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations.
c. **Precision approach and landing operations:** An instrument approach and landing using precision lateral and vertical guidance with minima as determined by the category of operation.

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

   i. land-based navigation aid; or

   ii. computer generated navigation data.

‘Approved by the Authority’ means documented by the Authority as suitable for the purpose intended.

‘Apron’ means a defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fuelling, parking or maintenance.

‘Atmosphere, International Standard’ means the atmosphere defined in ICAO Document 7488/2. For the purposes of CAR the following is acceptable:–

   a. The air is a perfect dry gas;

   b. The temperature at sea-level is 15°C;

   c. The pressure at sea-level is \(1.01325 \times 10^5\) Pa (29.92 in Hg) (1013.2 mbar);

   d. The temperature gradient from sea-level to the altitude at which the temperature becomes –56.5°C is 3.25°C per 500 m (1.98°C/1000 ft);

   e. The density at sea level \(\rho\), under the above conditions is \(1.2250 \, \text{kg/m}^3\) (0.002378 slugs/ft\(^3\)); for the density at altitudes up to 15000 m (50000 ft) see Table 1.

   NOTE: \(\rho\) is the density appropriate to the altitude and \(\rho/\rho_0\) the relative density is indicated by \(\sigma\).

‘Authority’ means the the General Civil Aviation of the United Arab Emirates and is the competent body responsible for the safety regulation of Civil Aviation. (See IEM 1.1, Authority).

**Autorotation** means a rotorcraft flight condition in which the lifting rotor is driven entirely by action of the air when the rotorcraft is in motion.

**Auxiliary Power Units:**–Definitions applicable to auxiliary power units:–

   a. ‘**Accessory drives**’ means any drive shaft or utility mounting pad, furnished as a part of the auxiliary power unit, that is used for the extraction of power to drive accessories, components, or controls essential to the operation of the auxiliary power unit or any of its associated systems.

   b. ‘**Auxiliary Power Unit (APU)**’ means any gas turbine-powered unit delivering rotating shaft power, compressor air, or both which is not intended for direct propulsion of an aircraft.

   c. ‘**Blade**’ means an energy transforming element of the compressor or turbine rotors whether integral or attached design.

   d. ‘**Compressor air**’ means compressed air that is provided by the APU to do work whether it is extracted or bled from any point of the compressor section of the gas turbine engine or produced from a compressor driven by the APU.

   e. ‘**Containment**’ means retention within the APU of all high energy rotor fragments resulting from the failure of a high energy rotor.

   f. ‘**Critical rotor stage**’ means the compressor and turbine stages whose rotors have the smallest margin of safety under the conditions of speed and temperature shown in Appendix 1, paragraph 7.10 of JAR–APU.

   g. ‘**Demonstrate**’ means to prove by physical test under the conditions specified in Appendix 1 of JAR–APU.
h. ‘Essential APU’ means an APU which produces bleed air and/or power to drive accessories necessary for the dispatch of the aircraft to maintain safe aircraft operation.

i. ‘High energy rotor’ means a rotating component or assembly which, when ruptured, will generate high kinetic energy fragments.

j. ‘Major part’ means a part of whose failure might adversely affect the operational integrity of the unit.

k. ‘Maximum allowable speed’ means the maximum rotor speed which the APU would experience under overload or transient conditions and is limited by installed safety devices.

l. ‘Maximum allowable temperature’ means the maximum exhaust gas temperature (EGT) or turbine inlet temperature (TIT) which the APU would experience during overload or transient conditions and is limited by installed safety devices.

m. ‘Minor part’ means a part which is not a major part.

n. ‘Non-essential APU’ means an APU which may be used on the aircraft as a matter of convenience, either on the ground or in flight, and may be shut down without jeopardising safe aircraft operations.

o. ‘Output provisions’ means any drive pad or compressed air output flange intended for aircraft use to extract usable shaft or pneumatic power from the APU.

p. ‘Rated output’ means the approved shaft power or compressed air output or both, that is developed statically at standard sea-level atmospheric conditions for unrestricted periods of use.

q. ‘Rated temperature’ means the maximum turbine inlet or exhaust gas temperature at which the engine can operate at rated output and speed.

r. ‘Rotor’ means a rotating component or assembly including blades with the exception of accessory drive shafts and gears.

s. ‘Start’ means an acceleration from the initiation of operation or starter torque to a stabilised speed and temperature in the governed ranges without exceeding approved limits.

t. ‘Substantiate’ means to prove by presentation of adequate evidence obtained by demonstration or analysis or both.

u. ‘Type’ means all of a series of units each one of which was developed as an alternative configuration or refinement of the same basic unit.

‘Auxiliary rotor’ means a rotor that principally serves to counteract the effect of the main rotor torque on a rotorcraft and/or to manoeuvre the rotorcraft about one or more of its three principle axes.

‘Balloon’ means a non-power driven lighter than air aircraft.

‘Beta Control’ means a system whereby the propeller can be operated at blade angles directly selected by the air crew, or by other means, and normally used during the approach and ground handling.

‘Boost Pressure’ (piston engines) means the manifold pressure measured relative to standard sea-level atmospheric pressure.

*‘Brake Horsepower’ means the power delivered at the propeller shaft (main drive or main output) of an aircraft engine.

#‘Cabin Crew Member’ means a crew member who performs, in the interest of safety of passengers, duties assigned by the operator or the pilot in command of the aircraft, but who shall not act as a flight crew member.
‘Calibrated airspeed’ means indicated airspeed of an aircraft, corrected for position and instrument error. Calibrated airspeed is equal to true airspeed in standard atmosphere at sea level.

‘Calendar Month’ means a month in the Gregorian calendar, such as May, June, etc., and when applicable to expiry dates of medical certificates or required checks, means the "last date of the month" in which the check becomes due.

‘Category’ as used with respect to:

a. licensing of flight crew, is defined in JAR–FCL;
b. type certification of aircraft, is defined in JAR–21;
c. certifying staff, is defined in CAR–Part V.
d. aerodrome operating minima required in CAR–OPS, is defined in CAR–OPS 1.430;
e. all weather operations in accordance with JAR–AWO, is defined in JAR–AWO 201; or
f. all weather operations in accordance with CAR–OPS, is defined in CAR–OPS 1.430.

Category A, with respect to rotorcraft, means a multi-engined rotorcraft designed with engine and system isolation features specified in JAR–27/JAR–29 and capable of operations using take-off and landing data scheduled under a critical engine failure concept which assures adequate designated surface area and adequate performance capability for continued safe flight or safe rejected take-off in the event of engine failure.

Category B, with respect to rotorcraft, means a single-engine or multi-engine rotorcraft which does not meet Category A standards. Category B rotorcraft have no guaranteed capability to continue safe flight in the event of an engine failure, and unscheduled landing is assumed.

‘Ceiling’ means the height above the ground or water of the base of the lowest layer of cloud below 20,000 feet covering more than half the sky.

‘Certifying Staff’ means personnel responsible for the release of an aircraft or a component after maintenance.

‘Change-Over Point’ means the point at which an aircraft navigating on an ATC route segment defined by reference to very high frequency omni-directional radio ranges is expected to transfer its primary navigational reference from the facility behind the aircraft to the facility ahead of the aircraft.

‘Charge Cooling’ (piston engines) means the percentage degree of charge cooling, quantitatively expressed as:–

\[
\frac{(t_2 - t_3) \times 100}{(t_2 - t_1)}
\]

where

\(t_1\) is the temperature of the air entering the charge cooler coolant radiator in the power-plant,
\(t_2\) is the temperature of the charge without cooling, and
\(t_3\) is the temperature of the charge with cooling.

‘Class’

a. As used with respect to aeroplanes means a group of single-engine aeroplane types having similar handling and flight characteristics.
b. Reserved
c. Reserved
‘Clearance Limit’ means the point to which an aircraft is granted an air traffic control clearance.

‘Clearway’ means, for turbine engine powered aeroplanes certificated after August 29, 1959, an area beyond the runway, not less than 152 m (500 ft) wide, centrally located about the extended centreline of the runway, and under the control of the airport authorities. The clearway is expressed in terms of a clearway plane, extending from the end of the runway with an upward slope not exceeding 1.25%, above which no object or terrain protrudes. However, threshold lights may protrude above the plane if their height above the end of the runway is 0.66 m (26 ins) or less and if they are located to each side of the runway.

Climates, Standard

NOTE: This sub-paragraph defines three standard climates – Temperate, Tropical and Arctic – by stating the envelope conditions applicable to each. The conditions thus represented are acceptable as giving suitable design criteria for aeroplanes intended for operation in such regions. They are drawn up on the basis of conditions unlikely to be exceeded more often than on one day per year except that they do not cover the extremes of temperature occasionally reached in tropical deserts or in Siberia in winter.

The Temperate, Tropical and Arctic climates are defined by:–

a. The temperature envelopes enclosed by the appropriate maximum and minimum temperature lines of Fig. 1, from zero metres (feet) to the selected height (e.g. the temperatures appropriate to 0 – 10 000 m (0 – 30 000 ft)) in the standard Temperate climate are those within the envelope A, B, C, D, in Fig. 1;

b. Every point included in these envelopes being associated with a relative humidity range of 20% to 100%; except that in the conditions represented by the area E, F, G in Fig. 1 the relative humidities shall be assumed to vary from 100% maximum and 20% minimum respectively at the line EF to the value appropriate to the height at the line GF. The value of relative humidity on the line GF shall be taken to vary linearly from 100% maximum and 20% minimum at F to some lower values at G (given here as 10% maximum and 2% minimum);

c. Every point included in these envelopes being associated with the International standard pressure (ICAO) appropriate to the height, as shown in Table 1;

d. Every point included in these envelopes being associated with the density corresponding to the temperature, pressure and humidity; extreme values are given in Table 1.

These conditions do not cover variation of pressure from the International standard. This shall be allowed for by assuming a variation of pressure 5% above and below the International standard pressure (ICAO) associated with the International standard temperature (ICAO). (see IEM 1.1, Climates, Standard.)

‘Commander’ as used with respect to aircraft operations, is defined in CAR-OPS.

‘Commercial Air Transportation’ means an aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire. (See IEM 1.1, Commercial Air Transportation.)

‘Competent Authority’ means the General Civil Aviation Authority or any of its departments to which supervision and development of civil aviation affairs is assigned.

[ ‘Component’ means any engine, propeller, part or appliance. ]

‘Configuration Deviation List’ (CDL) means a list established by the organisation responsible for the type design with the approval of the State of Design which identifies any external parts of an aircraft type which may be missing at the commencement of a flight, and which contains, where necessary, any information on associated operating limitations and performance correction.

‘Congested Area’ means, in relation to a city, town or settlement, any area which is substantially used for residential, commercial or recreational purposes.
[ ‘Continuing airworthiness’ means all of the processes ensuring that, at any time in its operating life, the aircraft complies with the airworthiness requirements in force and is in a condition for safe operation. ]

‘Continuous Maximum Icing’ (see ‘Icing Atmospheric Conditions’)

‘Contracting State’ means a State that is a signatory to the Convention on International Civil Aviation.

‘Control Area’ means a controlled airspace extending upwards from a specified limit above the earth.

‘Controlled Aerodrome’ means an aerodrome at which air traffic control service is provided to aerodrome traffic.

‘Controlled Airspace’ means an airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification.

‘Controlled Flight’ means any flight, which is subject to an air traffic control clearance.

‘Control Zone’ means a controlled airspace extending upwards from the surface of the earth to a specified upper limit.

‘Co-pilot’ means a pilot serving in any piloting capacity other than as pilot in command, but excluding a pilot who is on board the aircraft for the sole purpose of receiving flight instruction for a licence or rating.

‘Crew Member’ means a person assigned by an operator to duty on an aircraft during flight duty period.

‘Critical Altitude’ (piston engines) means the maximum attitude at which, in standard atmosphere, it is possible to maintain, at a specified rotational speed without ram, a specified power or a specified manifold pressure. Unless otherwise stated, the critical altitude is the maximum altitude at which it is possible to maintain, without ram, at the maximum continuous rotational speed, one of the following:

a. The maximum continuous power, in the case of engines for which this power rating is the same at sea level and at the rated altitude.

b. The maximum continuous rated manifold pressure, in the case of engines the maximum continuous power of which, is governed by a constant manifold pressure.

‘Critical Engine’ means the engine whose failure would most adversely affect the performance or handling qualities of an aircraft.

‘Critical Part.’ Where the failure analysis shows that a part must achieve and maintain a particularly high level of integrity if Hazardous Effects are not to occur at a rate in excess of Extremely Remote then such a part shall be identified as a Critical Part.

‘Cruising Level’ means a level maintained during a significant portion of a flight.

‘Danger Area’ means an airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specific times.

‘Dangerous Goods’ means articles or substances which are capable of posing a risk to health, safety, property or the environment and which are shown in the list of dangerous goods in the Technical Instructions or which are classified according to those Instructions.
‘Decision Altitude (DA)’ means a specified altitude, referenced to mean sea level, in the precision approach or approach with vertical guidance at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.

‘Decision Height (DH)’ means a specified height, referenced to the runway threshold elevation, in the precision approach or approach with vertical guidance at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.

‘Defined Point after Take-off’ means the point, within the take-off and initial climb phase, before which the helicopter’s ability to continue the flight safely, with one engine inoperative, is not assured and forced landing may be required.

‘Defined Point after Landing’ means the point, within the approach and landing phase, after which the helicopter’s ability to continue flight safely, with one engine inoperative, is not assured and a forced landing may be required.

Note – Defined points apply to performance Class 2 helicopters only.

‘Detent’ means a mechanical arrangement which indicates, by feel, a given position of an operating control. Once the operating control is placed in this position the detent will hold the lever there and an additional-to-normal force will be required to move the operating control away from the position. (Applicable to JAR–25 only.)

‘Dual Instruction Time’ means flight time during which a person is receiving flight instruction from a properly authorized pilot on board the aircraft.

‘Elevated Heliport’ means a heliport located on a raised structure on land.

‘Emergency Locator Beacon (ELB)’ means a generic term describing equipment which broadcast distinctive signals on designated frequencies and, depending on application, may be automatically activated by impact or be manually activated.

‘Engine’ means an engine used or intended to be used for aircraft propulsion. It consists of at least those components and equipment necessary for the functioning and control, but excludes the propeller.

‘Engine Dry Weight’ means the weight of an engine as type certificated or a weight which is clearly derived from this by specified additions or omissions.

‘Engine Type’ means engines which are similar in design (See JAR–21).

‘En-route Phase’ means that part of the flight from the end of the take-off and initial climb phase to the commencement of the approach and landing phase.

NOTE: Where adequate obstacle clearance cannot be guaranteed visually, flights must be planned to ensure that obstacles can be cleared by an appropriate margin. In the event of failure of the critical power-unit, operators may need to adopt alternative procedures.

‘Equivalent airspeed’ means the calibrated airspeed of an aircraft corrected for adiabatic compressible flow for the particular altitude. Equivalent airspeed is equal to calibrated airspeed in standard atmosphere at sea level.

‘Estimated Off-Block Time’ means the estimated time at which the aircraft will commence movement associated with departure.
‘Estimated Time Of Arrival’ for IFR flights, the time at which it is estimated that the aircraft will arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the aerodrome, the time at which the aircraft will arrive over the aerodrome. For VFR flights, the time at which it is estimated that the aircraft will arrive over the aerodrome.

‘Exhaust Gas Temperature’ (turbine engines) means the average temperature of the exhaust gas stream obtained in an approved manner.

‘Expected Approach Time’ means the time at which ATC expects that an arriving aircraft, following a delay, will leave the holding point to complete its approach for a landing.

‘External load’ means a load that is carried, towed or extends, outside the aircraft fuselage.

*‘External load attaching means’ means the structural components used to attach an external load to an aircraft, including external-load containers, the backup structure at the attachment points, and any quick-release device used to jettison the external load.

‘False Start’ (turbine engines) means an attempt to start in which the engine fails to light up.

NOTE: The handling of the engine is assumed to be in accordance with the instructions laid down by the engine manufacturer to be followed in these circumstances.

‘Feathered Pitch’ means the pitch setting, specified in the appropriate propeller manual, which in flight with the engine stopped, gives approximately the minimum drag, and corresponds with a windmilling torque of approximately zero.

‘Filed Flight Plan’ means the flight plan as filed with an ATS unit by the pilot or a designated representative, without any subsequent changes.

#‘Final Approach and Take-off Area (FATO)’ means a defined area over which the final phase of the approach manoeuvre to hover or landing is completed and from which the take off is commenced. Where FATO is to be used by performance Class 1 helicopters, the defined area includes the rejected take-off area available.

‘Final take-off speed’ means the speed of the aeroplane that exists at the end of the take-off path in the en-route configuration with one engine inoperative.

‘Fireproof.’ With respect to materials, components and equipment, means the capability to withstand the application of heat by a flame, for a period of 15 minutes without any failure that would create a hazard to the aircraft. The flame will have the following characteristics:

Temperature 1100°C ± 80°C

Heat Flux Density 116 KW/m² ± 10 KW/m²

NOTE: For materials this is considered to be equivalent to the capability of withstanding a fire at least as well as steel or titanium in dimensions appropriate for the purposes for which they are used.

‘Fire-resistant.’ With respect to materials, components and equipment, means the capability to withstand the application of heat by a flame, as defined for ‘Fireproof’, for a period of 5 minutes without any failure that would create a hazard to the aircraft.

NOTE: For materials this is considered to be equivalent to the capability of withstanding a fire at least as well as aluminium alloy in dimensions appropriate for the purposes for which they are used.

‘First aid oxygen’ means the additional oxygen provided for the use of passengers, who do not satisfactorily recover following subjection to excessive cabin altitudes, during which they had been provided with supplemental oxygen.
‘Fixed Pitch Propeller’ means a propeller, the pitch of which cannot be changed, except by processes constituting a workshop operation.

‘Flame resistant’ means not susceptible to combustion to the point of propagating a flame, beyond safe limits, after the ignition source is removed.

‘Flammable’, with respect to a fluid or gas, means susceptible to igniting readily or exploding.

‘Flap extended speed’ means the highest speed permissible with wing-flaps in a prescribed extended position.

‘Flash resistant’ means not susceptible to burning violently when ignited.

#‘Flight Crew Member’ means a licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period.

#‘Flight Data Analysis’ means a process of analysing recorded flight data in order to improve the safety of flight operations.

‘Flight Deck Duty Time’ means total time spent by a flight crew member at a flight crew member position on an aircraft during flight time.

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

‘Flight Information Region’ means airspace of defined dimensions within which flight information service and alerting service are provided.

‘Flight Level’ means a surface of constant atmospheric pressure, which is related to a specific pressure datum, 1013.2 hPa and is separated from other such surfaces by specific pressure intervals.

#‘Flight Plan’ means specified information provided to air traffic service units, relative to an intended flight or portion of a flight of an aircraft.

#‘Flight Recorder’ means any type of recorder installed in the aircraft for the purpose of complimenting accident/incident investigation.

#‘Flight safety documents system’. A set of inter-related documentation established by the operator, complying and organising information necessary for flight and ground operations, and comprising, as a minimum, the operations manual and the operator’s maintenance control manual.

#‘Flight Time – Aeroplane’ means the total time from the moment an aeroplane first moves for the purpose of taking-off until the moment it finally comes to rest at the end of the flight.

#‘Flight Time – Helicopter’ means the total time from the moment a helicopter’s rotor blades start turning until the moment the helicopter finally comes to rest at the end of the flight and the rotor blades are stopped.

‘Flight Time’ as used with respect to;

a. licensing of flight crew, is defined in CAR–Part II;
b. type certification of aircraft, is defined in JAR–21;
c. maintenance, is defined in CAR–OPS Subpart M.

‘Flight Visibility’ means the visibility forward from the cockpit of an aircraft in flight.
'Flight Watch System' means a system described in the operator's Operations Manual for the monitoring of an aircraft during flight time.

'Gate' means a mechanical arrangement which provides positive stops at given positions of an operating control and is such that a separate movement of the operating control in another direction is necessary in order to initiate movement beyond one of the stops. (Applicable to JAR–25 only.)

'GCAA' means the General Civil Aviation Authority or any of its departments to which supervision and development of civil aviation affairs is assigned.

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

'Ground Idling Conditions' (turbine engines) means the conditions of minimum rotational speed associated with zero forward speed and the maximum exhaust gas temperature at this speed.

'Ground Visibility' means the visibility at an aerodrome, as reported by an accredited observer.

'Gyroplane' means a rotorcraft the rotors of which are not engine driven except for initial starting, but are made to rotate by action of the air when the rotorcraft is moving, and the means of propulsion of which, consisting usually of conventional propellers, is independent of the rotor system.

'Harness' means the equipment, consisting of two shoulder straps and a lap belt, which is provided to restrain a member of the flight crew against inertia loads occurring in emergency conditions.

'Helicopter' means a heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes.

'Helideck' means a heliport located on a floating or fixed off-shore structure.

'Heliport' means an aerodrome or a defined area on a structure intended to be used wholly or in part for the arrival, departure and surface movement of helicopters.

'Human Factors Principles' means principles which apply to aeronautical design, certification, training operations and maintenance which seek safe interface between the human and other system components by proper consideration to human performance.

'Human Performance' means human capabilities and limitations, which have an impact on the safety and efficiency of aeronautical operations.

'Icing Atmospheric Conditions'. The definitions of atmospheric conditions are given in this sub-paragraph and Figures 2 to 7:–

a. ‘Continuous Maximum Icing’. The maximum continuous intensity of atmospheric icing conditions (continuous maximum icing) is defined by the variables of the cloud liquid water content, the mean effective diameter of the cloud droplets, the ambient air temperature, and the inter-relationship of these three variables as shown in Fig. 2. The limiting icing envelope in terms of altitude and temperature is given in Fig. 3. The inter-relationship of cloud liquid water content with droplet diameter and altitude is determined from Fig. 2 and Fig. 3. The cloud liquid water content for continuous maximum icing conditions of a horizontal extent, other than 17.4 n miles, is determined by the value of liquid water content of Fig. 2, multiplied by the appropriate factor from Fig. 4.

b. ‘Intermittent Maximum Icing’. The intermittent maximum intensity of atmospheric icing conditions (intermittent maximum icing) is defined by the variables of the cloud liquid water content, the mean effective diameter of the cloud droplets, the ambient air temperature, and the inter-relationship of these three variables as shown in Fig. 5. The limiting icing envelope in terms of altitude and temperature is given in Fig. 6. The inter-relationship of cloud liquid water content with droplet diameter and altitude is determined from Fig. 5 and Fig. 6. The cloud liquid water content for
intermittent maximum icing conditions of a horizontal extent, other than 2.6 n miles, is determined by the value of cloud liquid water content of Fig. 5 multiplied by the appropriate factor in Fig. 7.

*Indicated airspeed* means the speed of an aircraft as shown on its pitot static airspeed indicator calibrated to reflect standard atmosphere adiabatic compressible flow at sea level uncorrected for airspeed system errors.

*Instrument* means a device using an internal mechanism to show visually or aurally the attitude, altitude, or operation of an aircraft or aircraft part. It includes electronic devices for automatically controlling an aircraft in flight.

#Instrument Meteorological Conditions (IMC). Meteorological conditions expressed in terms of visibility, distance from cloud and ceiling, less than the minima specified for visual meteorological conditions.

‘Instrument Ground Time’ means time during which a pilot is practising, on the ground, simulated instrument flight in a synthetic flight trainer approved by the GCAA.

‘Instrument Time’ means instrument flight time or instrument ground time.

‘Intermittent Maximum Icing’ (see ‘Icing Atmospheric Conditions’)

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

#‘Landing Decision Point (LDP)’ means the point used in determining landing performance from which, a power-unit failure occurring at this point, the landing may be safely continued or balked landing initiated.

Note. – LDP applies to performance Class 1 helicopters.

*Landing gear extended speed* means the maximum speed at which an aircraft can be safely flown with the landing gear extended.

*Landing gear operating speed* means the maximum speed at which the landing gear can be safely extended or retracted.

‘[Large aircraft’ means an aircraft, classified as an aeroplane with a take-off mass of more than 5700 kg (12,500 pounds), or a multi-engined helicopter.]

‘Line Indoctrination’ means experience acquired during flight time in service as a crew member performing the duties of his station under supervision or as an observer observing a qualified crew member perform those duties.

*Load factor* means the ratio of a specified load to the total weight of the aircraft. The specified load is expressed in terms of any of the following: aerodynamic forces, inertia forces, or ground or water reactions.

*Mach number* means the ratio of true air speed to the speed of sound.

‘Main rotor(s)’ means the rotor or rotors that supply the principal lift to a rotorcraft.

#‘Maintenance’ means the performance of tasks (with the exception of pre-flight inspection) required to ensure the continued airworthiness of an aircraft including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair.

#‘Maintenance Control Manual’. A document which describes the operator’s procedures necessary to ensure that all scheduled and unscheduled maintenance is performed on the operator’s aircraft on time and in a controlled and satisfactory manner.
#‘Maintenance organisation’s procedures manual. A document endorsed by the head of the maintenance organisation which details the maintenance organisation’s structure and management responsibilities, scope of work, description of facilities, maintenance procedures and quality assurance or inspection systems.

#‘Maintenance programme. A document which describes the specific scheduled maintenance tasks and their frequency of completion and related procedures, such as a reliability programme, necessary for the safe operation of those aircraft to which it applies.

#‘Maintenance Release. A document which contains a certification confirming that the maintenance work to which it relates has been completed in a satisfactory manner, either in accordance with the approved data and the procedures described in the maintenance organisation’s procedures manual or under an equivalent system.

‘Manifold Pressure’ piston engines means the absolute static pressure measured at the appropriate point in the induction system, usually in inches or millimetres of mercury.

‘Manoeuvring Area’ means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.

#‘Master Minimum Equipment List (MMEL). A list established for a particular aircraft type by the organisation responsible for the type design with the approval of the State of Design containing items, one or more of which is permitted to be unserviceable at the commencement of a flight. The MMEL may be associated with special operating conditions, limitations or procedures.

‘Maximum Engine Overspeed’ (20 second-piston engines) means the maximum engine rotational speed, inadvertent occurrence of which for periods of up to 20 seconds, has been agreed not to require rejection of the engine from service or maintenance action (other than to correct the cause).

‘Maximum Engine Overspeed(s)’ (20 second-turbine engines) means the maximum rotational speed of each mechanically independent main rotating system of an engine, inadvertent occurrence of which for periods of up to 20 seconds, has been agreed not to require rejection of the engine from service or maintenance action (other than to correct the cause). NOTE: For each main rotating system this speed is normally not less than the maximum transient rpm in non-fault conditions.

‘Maximum Engine Over-torque’ (20 second-applicable only to turbo-propeller and turbo-shaft engines incorporating free power-turbines) means the maximum torque of the free power-turbine, inadvertent occurrence of which for periods of up to 20 seconds, has been agreed not to require rejection of the engine from service or maintenance action (other than to correct the cause).

‘Maximum Power-turbine Overspeed’ (20 second-applicable only to free power-turbine engines for helicopters) means the maximum rotational speed of the free power-turbine, inadvertent occurrence of which for periods of up to 20 seconds, has been agreed not to require rejection of the engine from service or maintenance action (other than to correct the cause).

‘Maximum Exhaust Gas Overtemperature’ (20 second-turbine engines) means the maximum engine exhaust gas temperature, inadvertent use of which for periods of up to 20 seconds, has been agreed not to require rejection of the engine from service or maintenance action (other than to correct the cause).

NOTE: This is not to be confused with maximum temperatures established for use during starting operations.

‘Maximum Power-turbine Speed for Autorotation’ (applicable only to free power-turbine engines for helicopters) means the maximum rotational speed of the power-turbine permitted during autorotation for periods of unrestricted duration.

‘Maximum Governed Rotational Speed’ (variable pitch (governing) propellers) means the maximum rotational speed as determined by the setting of the propeller governor or control mechanism.

‘Maximum Permissible Rotational Speed’ (fixed, adjustable or variable (non-governing) pitch propellers) means the maximum propeller rotational speed permitted in normal or likely emergency operation.
‘Maximum Propeller Overspeed’ (20 second) means the maximum propeller rotational speed, inadvertent occurrence of which for periods of up to 20 seconds, has been agreed not to require rejection of the propeller from service or maintenance action (other than to correct the cause).

#‘Maximum Mass’ means the maximum certificated take-off mass.

#‘Medical Assessment’ means the evidence issued by a Contracting State that the licence holder meets specific requirements of medical fitness.

#‘Medical Assessor’ means a physician qualified and experienced in the practice of aviation medicine who evaluates medical reports submitted to the Licensing Authority by medical examiners.

#‘Medical Examiner’ means a physician with training in aviation medicine and practical knowledge and experience of the aviation environment, who is designated by the Licensing Authority to conduct medical examinations of fitness of applicants for licences or ratings for which medical requirements are prescribed.

‘Minimum Descent Altitude (MDA)’ means a specified altitude, referenced to mean sea level, in a non-precision approach or circling approach below which descent may not be made without visual reference.

‘Minimum Descent Height’ means a specified height, referenced to the runway threshold elevation, in a non-precision approach or circling approach below which descent may not be made without visual reference.

‘Minimum Drainage Period After a False Start’ (turbine engines) means the minimum period necessary to allow surplus fuel to drain from the engine prior to making a further attempt to start the engine. The period is measured from the time at which the starter is switched off and/or the engine fuel cock is closed during a false start.

#‘Minimum Equipment List (MEL). A list which provides for the operation of aircraft, subject to specified conditions, with particular equipment inoperative, prepared by the operator in conformity with, or more restrictive than, the MMEL established for the aircraft type.

‘Minimum Governed Rotational Speed’ (variable pitch (governing) propellers) means the minimum rotational speed as determined by the setting of the propeller governor or control mechanism.

‘Minimum Take-off Crankshaft Rotational Speed’ (piston engines) means the minimum crankshaft rotational speed permissible for use with the maximum take-off manifold pressure.

‘Modified Engine’ means an engine, previously approved, in which hitherto unapproved modifications have been embodied.

‘Modified Propeller’ means a propeller previously approved, in which hitherto unapproved modifications have been embodied.

‘Module’. An engine (or propeller) Module is a group of engine (or propeller) components defined by the constructor and designed to be replaceable without mechanical or performance difficulties. It is uniquely identified and amenable to the setting of an overhaul life separate from other parts of the engine (or propeller).

‘Movement Area’ means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the aprons.

‘New Engine’ means an engine which has not been subjected to in-service operations, essentially identical in design, materials and methods of construction with one which has been type certificated.
‘New Propeller’ means a propeller which has not been subjected to in-service operations, essentially identical in design, materials and methods of construction with one which has been type certificated.

‘Night’ means the hours between the end of evening civil twilight and the beginning of morning civil twilight.

‘Noise Emission Standards’ means Standards specified in Chapters 2, 3, 5 or 6 of Annex 16 to the Convention on International Civil Aviation entitled "Environmental Protection".

‘Normal operating differential pressure’ means the pressure differential between the cabin pressure and the outside ambient pressure, including the tolerances of the normal pressure regulating system.

‘Notice of Proposed Amendment’ means a notice of a proposed amendment to a CAR Code.

‘Obstacle means all fixed (whether temporary or permanent) and mobile objects, or parts thereof, that are located on an area intended for the surface movement of aircraft or that extend above the defined surfaces intended to protect aircraft in flight. Terrain may also be considered an obstacle.

‘Obstacle Clearance Altitude (OCA)’ means the lowest altitude above mean sea level used in establishing compliance with appropriate obstacle clearance criteria.

‘Obstacle Clearance Height (OCH)’ means the lowest height above the elevation of the relevant runway threshold or above the aerodrome elevation as applicable, used in establishing compliance with appropriate obstacle clearance criteria.

‘Operate’ means using or causing to use or authorizing the use of an aircraft for the purpose of air navigation, including the piloting of aircraft with or without the right of legal control.

‘Operational Control’ means the exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of safety of the aircraft, and the regularity and efficiency of a flight.

‘Operational Flight Plan’ means the operator's plan for the safe conduct of the flight based on considerations of aircraft, performance, other operating limitations and relevant expected conditions on the route to be followed and at the aerodromes concerned.

‘Operator’ means a person, organization or enterprise engaged in or offering to engage in an aircraft operation.

[ ‘Organisation’ means a natural person, a legal person or part of a legal person. Such an organisation may be established at more than one location. ]

‘Overhauled Engine or Module’ means an engine or module which has been repaired or re-conditioned to a standard which renders it eligible for the complete overhaul period agreed by the Authority for the particular type of engine.

‘Overhauled Propeller’ means a propeller which has been repaired or re-conditioned to a standard which renders it eligible for the complete overhaul period agreed by the Authority for the particular type of propeller.

‘Performance Class 1 Helicopter’ means a helicopter with performance such that, in case of critical power-unit failure, it is able to land on the rejected take-off area or safely continue the flight to an appropriate landing area, depending on when the failure occurs.

‘Performance Class 2 Helicopter’ means a helicopter with performance such that, in case of critical power-unit failure, it is able to safely continue the flight, except when the failure occurs prior to a defined
point after take-off or after a defined point before landing, in which cases a forced landing may be required.

#‘Performance Class 3 Helicopter’ means a helicopter with performance such that, in case of power-unit failure at any point in the flight profile, a forced landing must be performed.

#‘Pilot in Command’ means the pilot designated by the operator or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.

‘Pilot Flying (PF)’ means the pilot, who for the time being, is in charge of the controls of an aircraft.

‘Pilot Not Flying’ means the pilot who is assisting the Pilot Flying in accordance with the multi-crew co-operation concept when the required flight crew is more than one.

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‘Piston Engines’ :-

Power definitions applicable to engines for aeroplanes and helicopters:-

a. ‘Take-off Power’ means the output shaft power identified in the performance data for use during take-off, discontinued approach and baulked landing and limited in use to a continuous period of not more than 5 minutes,

b. ‘Take-off Power Rating’ means the test bed minimum acceptance output shaft power as stated in the engine type certificate data sheet, of series and newly overhauled engines when running at the declared maximum coolant/cylinder head temperatures and within the appropriate acceptance limitations.

c. Maximum Continuous Power’ means the output shaft power identified in the performance data for use during periods of unrestricted duration.

NOTE: It should not be assumed that maximum continuous power is necessarily appropriate to normal operations. The power to be used in such operations is a matter between the constructor and the operator.

d. ‘Maximum Continuous Power Rating’ means the minimum test bed acceptance power, as stated in the engine type certificate data sheet, of series and newly overhauled engines when running at the declared maximum coolant/cylinder head temperatures and within the appropriate acceptance limitations.

e. ‘Maximum Recommended Cruising Power Conditions’ means the crankshaft rotational speed, engine manifold pressure and any other parameters recommended in the engine manuals as appropriate for cruising operation.

f. ‘Maximum Best Economy Cruising Power Conditions’ means the crankshaft rotational speed, engine manifold pressure and any other parameters recommended in the engine manuals as appropriate for use with economical-cruising mixture strength.

‘Pitch Setting’ means the propeller blade setting determined by the blade angle, measured in a manner and at a radius declared by the manufacturer and specified in the appropriate Engine Manual.

‘Powered sailplane’ means an aircraft, equipped with one or more engines having, with engine(s) inoperative, the characteristics of a sailplane.

[ ‘Pre-flight inspection’ means the inspection carried out before flight to ensure that the aircraft is fit for the intended flight. ]

‘Pressure Altitude’ means an atmospheric pressure expressed in terms of altitude, which corresponds to that pressure in the standard atmosphere.
‘Pressurized Aircraft’ means an aircraft the pressure in the cabin of which is controlled by mechanical means.

‘Private Operations’ means carriage of persons or cargo not for hire or reward.

‘Prohibited Area’ means an airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited.

‘Propeller’ means a complete propeller including all parts attached to and rotating with the hub and blades, and all equipment required for the control and operation of the propeller.

‘Propeller Equipment’ means all equipment used with, or necessary for the control and operation of the propeller.

‘Protective Breathing Equipment’ means equipment to cover the eyes, nose and mouth, or the nose and mouth if accessory equipment is provided to protect the eyes, that will protect the wearer from the effects of smoke, carbon dioxide or other harmful gases.

‘Prototype Engine’ means the first engine, of a type and arrangement not previously approved, to be submitted for type-approval test.

‘Prototype Propeller’ means the first propeller of a type and arrangement not previously approved, to be submitted for type-approval tests.

‘Psychoactive Substances’ means alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and other volatile solvents, whereas coffee and tobacco are excluded.

‘Quick-Donning Mask’ means an oxygen mask that can be secured on the face of the wearer with one hand within 5 seconds and that provides an immediate supply of oxygen.

‘Rating’ means an authorization entered on or associated with a licence and forming part thereof, stating special conditions, privileges or limitations pertaining to such licence.

‘Reference landing speed’ means the speed of the aeroplane, in a specified landing configuration, at the point where it descends through the landing screen height in the determination of the landing distance for manual landings.

‘Repair’ means the restoration of an aeronautical product to an airworthy condition to ensure that the aircraft continues to comply with the design aspects of the appropriate airworthiness requirements used for the issuance of the type certificate for the respective aircraft type, after it has been damaged or subjected to wear.

‘Reporting Point’ means a specified geographical location in relation to which the position of an aircraft can be reported.

‘Required Navigation Performance (RNP)’ means a statement of navigation performance accuracy, integrity, continuity and availability for operation within a defined airspace.

‘Restricted Area’ means airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of an aircraft is restricted in accordance with certain specified conditions.

‘Reverse Pitch’ means the blade angle used for producing reverse thrust with a propeller.

‘Rotational Direction of Equipment’ means the direction of rotation as observed when looking at the drive face of the equipment (usually described as ‘clockwise’ or ‘anti-clockwise’).

‘Rotational Speed’ (engine) means, unless otherwise qualified (e.g. propeller rotational speed), the rotational speed in revolutions per minute of the engine crankshaft or its equivalent.
‘Rotational Speed’ (propeller) means, unless otherwise specified (e.g. propeller rpm), the speed in revolutions per minute of the engine crankshaft or its equivalent.

*‘Rotorcraft’ means a heavier-than-air aircraft that depends principally for its support in flight on the lift generated by one or more rotors.

*‘Rotorcraft-load combination’ means the combination of a rotorcraft and an external-load, including the external load attaching means. Rotorcraft-load combinations are designated as Class A, Class B, Class C and Class D as follows:

a. **Class A rotorcraft-load combination** means one in which the external load cannot move freely, cannot be jettisoned, and does not extend below the landing gear.

b. **Class B rotorcraft-load combination** means one in which the external load is jettisonable and is lifted free of land or water during the rotorcraft operation.

c. **Class C rotorcraft-load combination** means one in which the external load is jettisonable and remains in contact with land or water during the rotorcraft operation.

d. **Class D rotorcraft-load combination** means one in which the external load is other than a Class A, B or C and has been specifically approved by the Authority for that operation.

#‘RNP Type. A containment value expressed as a distance in nautical miles from the intended position within which flights would be for at least 95% of the total flying time.

‘Route Segments’ means a part of a route each end of which part is identified by:

a. a continental or insular geographic location, or

b. a point at which a definite radio fix can be established.

#‘Runway Visual Range (RVR)’ means the range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line.

‘Safe Forced Landing’ means an unavoidable landing or ditching with a reasonable expectancy of no injuries to persons in the aircraft or on the surface.

‘Safety catch’ means a mechanism which locks an operating control in a given position. It engages automatically whenever the operating control is put into that position but has to be manually taken out of engagement in order to move the operating control away from that position. (Applicable to JAR–25 only.)

‘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.

‘Second-In-Command’ means a pilot who is designated by an operator as second-in-command of an aircraft during flight time.

‘Series Propeller’ means a propeller essentially identical in design, materials, and methods of construction, with one which has been previously approved.

‘Signal Area’ means an area on an aerodrome used for the display of ground signals.

#‘Significant Obstacle’ means any natural terrain features or fixed (whether temporary or permanent) or mobile object, or parts thereof, which has vertical significance in relation to adjacent and surrounding features and which is considered a potential hazard to the safe passage of aircraft for a particular type of aircraft operation.

#‘Small Aeroplane. An aircraft of a maximum certified take-off mass of 5 700 kg or less.

‘State of Design’ means the State having jurisdiction over organization responsible for the type design.

‘State of Manufacture’ means the State having jurisdiction over the organization responsible for the final assembly of the aircraft.

#‘State Of The Operator’ means the State in which the operator has his principal place of business or if he has no such place of business, his permanent residence.

#‘State Of Registry’ means the State on whose register the aircraft is entered.

*‘Stopway’ means an area beyond the take-off runway, no less wide than the runway and centred upon the extended centreline of the runway, able to support the aeroplane during an abortive take-off, without causing structural damage to the aeroplane, and designated by the airport authorities for use in decelerating the aeroplane during an abortive take-off.

‘Supplemental oxygen’ means the additional oxygen required to protect each occupant against the adverse effects of excessive cabin altitude and to maintain acceptable physiological conditions.

#‘Synthetic Flight Trainer’ means any one of the following three types of apparatus in which flight conditions are simulated on the ground:

a. A Flight Simulator, which provides an accurate representation of the flight deck of a particular aircraft type to the extent that the mechanical, electrical, electronic, etc. aircraft systems control functions, the normal environment of flight crew members, and the performance and flight characteristics of that type of aircraft are realistically simulated.

b. A Flight Procedures Trainer, which provides a realistic flight deck environment, and which simulates instrument responses, simple control functions of mechanical, electrical, electronic, etc. aircraft systems, and performance and flight characteristics of aircraft of a particular class.

c. A Basic Instrument Flight Trainer, which is equipped with appropriate instruments, and which simulates the flight deck environment of an aircraft flight in instrument flight conditions.

#‘Take-off and Initial Climb Phase – Helicopter’ means that part of flight from the start of take-off to 300 m (1,000 ft) above the elevation of the FATO, if the flight is planned to exceed this height, or to the end of the climb in the other cases.

#‘Take-off Decision Point (TDP)’ means the point used in determining take-off performance from which, a power-unit failure occurring at this point, either a rejected take-off may be made or take-off safely continued.

*‘Take-off safety speed’ means a referenced airspeed obtained after lift-off at which the required one-engine-inoperative climb performance can be achieved.

Terms associated with probabilities (for engines):–

NOTE: Because an Effect can only be assessed in relation to a complete aircraft and as, for airworthiness purposes, each category of Effect is related to a particular frequency of occurrence, the definitions and associated numerical values are given in aircraft terms (hours in flight).

Frequency of occurrences:–

a ‘Reasonably Probable’ means unlikely to occur often during the operation of each aircraft of the type but which may occur several times during the total operational life of each aircraft of the types in which the engine may be installed.

NOTE: Where numerical values are used this may normally be interpreted as a probability in the range 10–3 to 10–5 per hour of flight.
b. ‘Remote’ means unlikely to occur to each aircraft during its total operational life but may occur several times when considering the total operational life of a number of aircraft of the type in which the engine is installed.

NOTE: Where numerical values are used this may normally be interpreted as a probability in the range $10^{-5}$ to $10^{-7}$ per hour of flight.

c. ‘Extremely Remote’ means unlikely to occur when considering the total operational life of a number of aircraft of the type in which the engine is installed, but nevertheless, has to be regarded as being possible.

NOTE: Where numerical values are used this may normally be interpreted as a probability in the range $10^{-7}$ to $10^{-9}$ per hour of flight.

‘Terrain’ means the surface of the Earth containing naturally occurring relief features such as mountains, hills, ridges, valleys etc.

‘Total Equivalent Static Power’ (turbine engines) means:

\[
\text{Total equivalent static power kW (S.I. Units) =} \\
\frac{\text{Static jet thrust (N)}}{\text{Propeller shaft power + 15}} \\
\frac{\text{Total equivalent static power (horse-power) (Non-S.I. Units) =}}{\text{Static jet thrust (lbf)}} \\
\text{Propeller shaft HP + 2.6} \\
\]

‘Track’ means the projection on the earth’s surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (true, magnetic or grid).

‘Transition Altitude’ means the altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes.

*‘True airspeed’ means the airspeed of an aircraft relative to undisturbed air. True airspeed is equal to equivalent airspeed multiplied by $\sqrt{\frac{p_0}{p}}$.

Turbine Engines:– Power/thrust definitions applicable to engines for aeroplanes and helicopters:–

NOTE1: The performance data are provided by the engine constructor and give the power and/or thrust produced by an engine under specified conditions (e.g. intake efficiency, forward speed, atmospheric temperature) when operating within the limitations (e.g. rpm, exhaust gas temperature) which have been approved for use with the defined power/thrust condition.

NOTE 2: Definitions of power/thrust in terms of usage and duration (and the use of these to form the basis of certain Flight Manual limitations) is not intended to remove the pilot’s right to judge whether and to what extent such limitations may be ignored in emergency conditions.

a. ‘Maximum Contingency Power and/or Thrust’ means the power and/or thrust identified in the performance data for use when a power-unit has failed or been shut down during take-off, baulked landing or prior to a discontinued approach and limited in use for a continuous period of not more than 2½ minutes.

NOTE: The 2½ minute period for use of maximum contingency power and/or thrust is additional to the 5 minute or 10 minute period at take-off power and/or thrust (see c.) and may be added to the take-off limitation at any point in time.
b. ‘Maximum Contingency Power and/or Thrust Rating’ means the minimum test bed acceptance power and/or thrust, as stated in the engine type certificate data sheet, of series and newly overhauled engines when running at the specified conditions and within the appropriate acceptance limitations.

c. ‘Take-off Power and/or Thrust’ means the power and/or thrust identified in the performance data for use during take-off, discontinued approach and baulked landing; and

i. for aeroplanes and helicopters, limited in use to a continuous period of not more than 5 minutes; and

ii. for aeroplanes only (when specifically requested), limited in use to a continuous period of not more than 10 minutes in the event of a power-unit having failed or been shut down.

d. ‘Take-off Power and/or Thrust Rating’ means the minimum test bed acceptance power and/or thrust as stated in the engine type certificate data sheet, of series and newly overhauled engines when running at the specified conditions and within the appropriate acceptance limitations.

e. ‘Intermediate Contingency Power and/or Thrust’ means the power and/or thrust identified in the performance data for use after take-off when a power-unit has failed or been shut down, during periods of unrestricted duration.

f. ‘Intermediate Contingency Power and/or Thrust Rating’ means the minimum test bed acceptance power and/or thrust, as stated in the engine type certificate data sheet, of series and newly overhauled engines when running at the specified conditions and within the appropriate acceptance limitations.

g. ‘30-Minute Contingency Power’ (applicable to multi-engined helicopters only) means the power identified in the performance data for use after take-off when an engine has failed or been shut down, and limited in scheduled use for a total period of not more than 30 minutes in any one flight.

h. ‘30-Minute Contingency Power Rating’ (applicable to multi-engined helicopters only) means the minimum test bed acceptance power, as stated in the engine type certificate data sheet, of series and overhauled engines when running at the specified conditions and within the appropriate acceptance limitations.

j. ‘Maximum Continuous Power and/or Thrust’ means the power and/or thrust identified in the performance data for use during periods of unrestricted duration. 

NOTE: It should not be assumed that the maximum permitted continuous power and/or thrust is appropriate to normal operations. The power to be used in such conditions can only be arrived at by discussion between the constructors and operators, due regard being paid to the effect of such factors as the type of operation envisaged, the route and climatic conditions, together with the overhaul period and overhaul costs which it is desired to achieve.

k. ‘Maximum Continuous Power and/or Thrust Rating’ means the minimum test bed acceptance power and/or thrust, as stated in the engine type certificate data sheet, of series and newly overhauled engines when running at the specified conditions and within the appropriate acceptance limitations.

‘Type Certificate’ means a document issued by a Contracting State to define the design of an aircraft type and to certify that this design meets the appropriate airworthiness requirements of that State.

‘Variable Pitch Propellers’ means a propeller, the pitch setting of which changes or can be changed, when the propeller is rotating or stationary. This includes:

a. A propeller, the pitch setting of which is directly under the control of the flight crew (controllable pitch propeller).

b. A propeller, the pitch setting of which is controlled by a governor or other automatic means which may be either integral with the propeller or a separately mounted equipment and which may or may not be controlled by the flight crew (constant speed propeller).

c. A propeller, the pitch setting of which may be controlled by a combination of the methods of a. and b.
‘Visibility’ means visibility for aeronautical purposes is the greater of:

a. the greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognised when observed against a bright background;

b. the greatest distance at which lights in the vicinity of 1,000 candelas can be seen and identified against an unlit background.

#‘Visual Meteorological Conditions (VMC)’ means meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling equal to or better than specified minima.

‘Visual Reference’ means in respect of an aircraft on an approach to a runway, means that section of the approach area of the runway or those visual aids that, when viewed by the pilot of the aircraft, enables the pilot to make an assessment of the aircraft position and the rate of change of position, relative to the nominal flight path.
CAR 1.2 Abbreviations and symbols

‘AC’ means Advisory Circular.

‘APU’ means auxiliary power unit.

‘BTPS’ means body temperature, pressure, saturated, i.e. 37°C, ambient pressure and saturated with water vapour at 47 mm Hg partial pressure.

‘BTPD’ means body temperature, pressure, dry, i.e. 37°C, ambient pressure and no water vapour.

*‘CAS’ means calibrated airspeed.

*‘EAS’ means equivalent airspeed.

*‘IAS’ means indicated airspeed.

*‘ICAO’ means International Civil Aviation Organisation.

#*‘IFR’ means instrument flight rules.

*‘ILS’ means instrument landing system.

‘JAR’ means Joint Aviation Requirements.

‘LDP’ with respect to rotorcraft means the landing decision point.

*‘M’ means mach number.

‘MIL Spec’ means USA Military Specification.

‘NPA’ means Notice of Proposed Amendment.

‘NTPD’ means normal temperature, pressure, dry, i.e. 21°C, 760 mmHg and no water vapour.

*‘OEI’ means one engine inoperative.

‘PF’ means Pilot flying

‘PFN’ means Pilot not flying

*rpm* means revolutions per minute.

‘STPD’ means standard temperature, pressure, dry, i.e. 0°C, 760 mmHg and no water vapour.

‘TAS’ means true airspeed.

‘TSO’ means Technical Standard Order.

‘TDP’ with respect to rotorcraft means take-off decision point.

*‘VA’ means design manoeuvring speed.

*‘VB’ means design speed for maximum gust intensity.

*‘VC’ means design cruising speed.

‘VD/MD’ means design diving speed.

*‘VDF/MDF’ means demonstrated flight diving speed.

*‘VF’ means design flap speed.

‘VF1’ means the design flap speed for procedure flight conditions.
*‘VFC/MFC’ means maximum speed for stability characteristics.

*‘VFE’ means maximum flap extended speed.

‘VFTO’ means final take-off speed.

#*‘VFR’ means visual flight rules.

‘VH’ means maximum speed in level flight with maximum continuous power.

*‘VHF’ means very high frequency.

*‘VLE’ means maximum landing gear extended speed.

*‘VLO’ means maximum landing gear operating speed.

*‘VLOF’ means lift-off speed.

*‘VMC’ means minimum control speed with the critical engine inoperative.

‘VMCA’ means the minimum control speed, take-off climb.

‘VMCG’ means the minimum control speed, on or near ground.

‘VMCL’ means the minimum control speed, approach and landing.

*‘VMO/MMO’ means maximum operating limit speed.

*‘VMU’ means minimum unstick speed.

*‘VNE’ means never-exceed speed.

*‘VR’ means rotation speed.

*‘VRA’ means rough airspeed.

*‘VREF’ means reference landing speed.

‘VS’ means the stall speed or the minimum steady flight speed at which the aeroplane is controllable.

‘VSO’ means the stall speed or the minimum steady flight speed in the landing configuration.

‘VS1’ means the stall speed or the minimum steady flight speed obtained in a specified configuration.

‘VS1g’ means the one-g stall speed at which the aeroplane can develop a lift force (normal to the flight path) equal to its weight.

‘VT’ means maximum aerotow speed (JAR–22 only).

‘VT’ means threshold speed.

‘VTmax’ means maximum threshold speed.

*‘VTOSS’ means take-off safety speed for Category A rotorcraft.

‘VW’ means maximum winch-launch speed (JAR–22 only).

*‘Vy’ means speed for best rate of climb.

*‘V1’ means take-off decision speed.
*‘$V_2$’ means take-off safety speed.

*‘$V_{2min}$’ means minimum take-off safety speed.

‘$V_3$’ means steady initial climb speed with all engines operating.
ALTITUDE (m) (pressure basis)

STANDARD CLIMATES – S.I. UNITS

Fig. 1

NOTES:  (1)  This diagram gives envelope conditions for design purposes; it does not constitute an accurate representation of any particular climate.
(2)  The line BC has no significance other than as illustrating the text.
NOTES:  
(1) This diagram gives envelope conditions for design purposes; it does not constitute an accurate representation of any particular climate. 
(2) The line BC has no significance other than as illustrating the text.
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TABLE 1

RELATIVE PRESSURES AND DENSITIES – NON S.I. UNITS

Air density at sea-level (barometer 29.92 in (1013.2 mbar) temp 15°C) is 0.002378 slugs/ft³

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MEAN EFFECTIVE DROPLET DIAMETER – MICRONS

CONTINUOUS MAXIMUM (STRATIFORM CLOUDS)
ATMOSPHERIC ICING CONDITIONS
LIQUID WATER CONTENT VS MEAN EFFECTIVE DROP DIAMETER
Fig. 2

NOTES: Source of data – NACATNNo. 1855, Class III–M, Continuous Maximum.
CONTINUOUS MAXIMUM (STRATIFORM CLOUDS)
ATMOSPHERIC ICING CONDITIONS
AMBIENT TEMPERATURE VS PRESSURE ALTITUDE
Fig. 3

NOTES: Source of data – NACATNNo. 2569.
CLOUD HORIZONTAL EXTENT – NAUTICAL MILES

CONTINUOUS MAXIMUM (STRATIFORM CLOUDS)
ATMOSPHERIC ICING CONDITIONS
LIQUID WATER CONTENT FACTOR VS CLOUD HORIZONTAL DISTANCE
Fig. 4

NOTES: Source of data – NACATNNo. 2738.
MEAN EFFECTIVE DROPLET DIAMETER – MICRONS

INTERMITTENT MAXIMUM (CUMULIFORM CLOUDS)
ATMOSPHERIC ICING CONDITIONS
LIQUID WATER CONTENT VS MEAN EFFECTIVE DROP DIAMETER
Fig. 5

NOTE: Source of data – NACA TN N. 1855, Class II–M, Intermittent Maximum
PRESSURE ALTITUDE – 1000 m

INTERMITTENT MAXIMUM (CUMULIFORM CLOUDS)
ATMOSPHERIC ICING CONDITIONS
AMBIENT TEMPERATURE VS PRESSURE ALTITUDE
Fig. 6

NOTE: Source of data – NACATNNo. 2569.
CLOUD HORIZONTAL EXTENT – NAUTICAL MILES

INTERMITTENT MAXIMUM (CUMULIFORM CLOUDS)
ATMOSPHERIC ICING CONDITIONS
VARIATION OF LIQUID WATER CONTENT FACTOR WITH
CLOUD HORIZONTAL EXTENT
Fig. 7

Source of data – NACATN No. 2738.
SECTION 2 – ACCEPTABLE MEANS OF COMPLIANCE (AMC) / INTERPRETATIVE & EXPLANATORY MATERIAL (IEM)

IEM 1.1
Authority
See CAR 1.1

In this context, ‘regulation’ means not only the drafting of requirements, but also, though not limited to, such activities as implementation, interpretation and application of the statutory aviation requirements.

IEM 1.1
Class
See CAR 1.1

Aeroplane classes may comprise aeroplanes having different type certification bases or be variants of certificated types. The establishment of class ratings for single pilot aeroplanes not requiring a type rating is set out in CAR Part II.

IEM to CAR 1.1
Climates, standard
See CAR 1.1

Climatic conditions:

a. The standard climatic conditions are intended primarily for use in designing aircraft structure and equipment which should remain airworthy when subjected to the appropriate conditions.

b. Aircraft performance will vary considerably within the defined climates. It is not intended that any one stated performance should be achievable throughout the whole envelope of conditions but rather that sufficient performance data should be scheduled for an operator to determine the performance which will be achieved in particular conditions.

c. The climatic conditions given are conditions of the free atmosphere. The temperatures achieved in an aircraft in these atmospheric conditions may be considerably higher. In the absence of precise information as to the surface finish, ventilation and type of engine, etc., the following maximum ambient temperatures should be assumed:

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<td>60°C</td>
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<tr>
<td>ii. for portions of the outer covering liable to be in the sun and parts attached directly to such covering;</td>
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<td>80°C</td>
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<tr>
<td>iii. in an engine compartment for parts not attached directly to the engine.</td>
<td>100°C</td>
<td>100°C</td>
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NOTE: Parts connected to the engine may attain higher temperatures.

IEM 1.1
Commander
See CAR 1.1

The requirements for the commander’s functions and responsibilities are found in CAR-OPS.

IEM 1.1
Commercial Air Transportation
See CAR 1.1

Commercial Air Transportation is intended to cover Aerial Work and Corporate Aviation.
Pilot Flying
See CAR 1.1

This is a task assignment only and should not be confused with the command authority of the pilot-in-command

IEM 1.1
Commercial Air Transportation
See CAR 1.1