

STATE OF LIBYA
MINISTRY OF TRANSPORT
CIVIL AVIATION AUTHORITY



دولة ليبيا
وزارة المواصلات
مصلحة الطيران المدني

Libyan Civil Aviation Regulation

Part-Definitions and Abbreviations

(LYCAR Part-01)

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Preamble

1. The regulations contained herein are adopted under the provision of Article No. (5) of Libyan Civil Aviation Law No. (6) of 2005, and issued and signed up by the director general of Civil Aviation by virtue of powers vested from the Minister of Transport under the resolution NO. (33) Issued on 13 February 2019.
2. This is Issue 02 of Libyan Civil Aviation Regulations – Part 01
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Capt. Nasereddin Shaebelain
Director General

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Subpart 01 - GENERAL DEFINITIONS

Accident means an occurrence that is associated with the operation of an aircraft and takes place between the time any person boards the aircraft with the intention of flight and such time as all such persons have disembarked and the engine or any propellers or rotors come to rest, being an occurrence in which:

- (1) A person is fatally or seriously injured as a result of;
 - (i) Being in the aircraft; or
 - (ii) Direct contact with any part of the aircraft, including any part that has become detached from the aircraft; or
 - (iii) Direct exposure to jet blast;

Except when the injuries are self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to passengers and crew; or

- (2) The aircraft sustains damage or structural failure that;
 - (i) Adversely affects the structural strength, performance, or flight characteristics of the aircraft; and
 - (ii) Would normally require major repair or replacement of the affected component;

Except engine failure or damage that is limited to the engine, its cowlings, or accessories, or damage limited to propellers, wing tips, rotors, antennas, tires, brakes, fairings, small dents, or puncture holes in the aircraft skin; or the aircraft is missing or is completely inaccessible.

'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.

'Aerodynamic coefficients' means non-dimensional coefficients for aerodynamic forces and moments.

Aerodrome; Means any defined area of land or water intended or

designed to be used either wholly or partly for the landing, departure, and surface movement of aircraft, includes any buildings, installations, and equipment on or adjacent to any such area used.

'Aerodrome Operator' means any legal or natural person operating or proposing to operate one or more aerodromes;

'Aerodrome' means a defined area, on land or on water, on a fixed, fixed offshore or floating structure, including any buildings, installations and equipment thereon, intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft;

Aerodrome traffic means all traffic in the maneuvering area of an aerodrome; and all aircraft flying in the vicinity of an aerodrome.

Aerodrome traffic circuit means the pattern flown by aircraft operating in the vicinity of an aerodrome.

Aerodrome traffic zone means an airspace of defined dimensions established around an aerodrome for the protection of aerodrome traffic.

Aeronautical Information Circular means a notice containing information that does not qualify for the origination of a NOTAM or for inclusion in the Libyan AIP, but which relates to flight safety, air navigation, technical, administrative or legislative matters.

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.

Aeronautical information service means any of the following services that distribute aeronautical information essential for the safety, regularity and efficiency of air navigation.

Airworthiness certificate means airworthiness certificate issued by the LYCAA under LYCAR.Part-21.

Airworthiness directive means a mandatory airworthiness requirement that specifies modifications, inspections, conditions, or limitations to be applied to an aircraft or aeronautical product to ensure continued safe operating conditions.

Airworthy condition means the condition of an aircraft, including its components, fuel, and other materials and substances essential to the manufacture and operation of the aircraft that complies with all the requirements prescribed by the Civil Aviation Regulations relating to design, manufacture, maintenance, modification, repair, and safety.

'Aircraft' means any machine that can derive support in the atmosphere from the reactions of the air other than reactions of the air against the earth's surface;

'Airborne' means entirely supported by aerodynamic forces.

'Aircraft-Supplied Data' means all data which is supplied by or via aircraft systems and is used by the Engine/Propeller Control System.

'Aircraft-Supplied Electrical Power' means any electrical power which is supplied by or via aircraft systems and is used by the Engine/Propeller Control System.

'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.

'Alternate Mode' (Engine related definition) means any Control Mode, including Back-up Modes that are not the Primary Mode used for controlling the Engine.

'Apron' means a defined area of an aerodrome intended to accommodate aircraft for purposes of loading or unloading passengers, baggage, mail or cargo, fueling, parking or maintenance;

'Apron Management Service (AMS)' means a service provided to regulate the activities and the movement of aircraft and vehicles on an apron;

Approved, means approved accepted by a Contracting State as suitable for a particular purpose.

'Atmosphere, International Standard' means the atmosphere defined in ICAO Document 7488/2.

'ATM/ANS' means air traffic management and air navigation services and covers all of the following: the air traffic management functions and services; the air navigation services, including the network management functions and services, as well as services which augment signals emitted by satellites of core constellations of GNSS for the purpose of air navigation; flight procedures design; and services consisting in the origination and processing of data and the formatting and delivering of data to general air traffic for the purpose of air navigation;

'ATM/ANS constituent' means tangible objects such as hardware and intangible objects such as software upon which the interoperability of the EATMN depends;

'ATM/ANS system' means the aggregation of airborne and ground-based constituents, as well as space-based equipment, that provides support for air navigation services for all phases of flight;

'ATM Master Plan' means the plan endorsed by Libyan Civil Aviation Authority (LYCAA);

'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 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.

‘**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 principal axes.

‘**Back-up Mode**’ (Engine related definition) means the Control Mode of the back-up system.

‘**Back-up System**’ means a part of the Engine/Propeller Control System where the operating characteristics or capabilities of the Engine/Propeller control are sufficiently different from the Primary System that the operating characteristics or capabilities of the aircraft, crew workload, or what constitutes appropriate crew procedures may be significantly impacted or changed.

‘**Brake Horsepower**’ means the power delivered at the main output shaft of an aircraft engine.

‘**Calibrated airspeed**’ means indicated airspeed of an aircraft, corrected for position and instrument error. Calibrated airspeed is equal to true airspeed in RNAV at sea level.

‘**Category**’ as used with respect to;

Category A, with respect to rotorcraft, means a multi-engined rotorcraft designed with engine and system isolation features specified in CS-27 / CS-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.

‘**Civil Aircraft**’ means any aircraft on the civil register of a State, other than those which that State treats as being in the service of the State, either permanently or temporarily.

‘**Certificate**’ means any certificate, approval, licence, authorisation, or other document issued as the result of a certification attesting compliance with the applicable requirements;

‘**Certification**’ means any form of recognition, based on an appropriate assessment, that a legal or natural person, product, part, non-installed equipment, equipment to control unmanned aircraft remotely, aerodrome, safety-related aerodrome equipment, ATM/ANS system, ATM/ANS constituent or flight simulation training device complies with the applicable requirements and of the delegated and implementing acts adopted on the basis thereof, through the issuance of a certificate attesting such compliance;

‘**Aircraft Operator**’ means any legal or natural person operating or proposing to operate one or more aircraft;

‘**Chicago Convention**’ shall mean the Convention on International Civil Aviation and its Annexes, signed in Chicago on 7 December 1944;

‘**Charge Cooling**’ (piston engines) means the percentage degree of charge cooling.

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

Clearway means a defined rectangular area on the ground or water, at the departure end of the runway; under the control of the aerodrome operator; or with the agreement of the authority controlling the clearway; selected or prepared as a suitable area over which an aeroplane may.

‘**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;

‘**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 3175 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;

‘Component’ means any engine, propeller, part or appliance;

‘Continuing Oversight’ shall mean the tasks to be conducted to verify that the conditions under which a certificate has been granted continue to be fulfilled at any time during its period of validity, as well as the taking of any safeguard measure;

‘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;

‘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 centre-line 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’ 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.

‘Commercial Air Transport’ means an aircraft operation to transport passengers, cargo or mail for remuneration or other valuable consideration;

‘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).

‘Continuous OEI 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.

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

‘Control Mode’ (Engine related definition) means each defined operational state of the Engine Control System where satisfactory Engine control can be exercised by the crew.

‘Covered Fault’ means a Fault which is detected and accommodated.

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

‘Declaration’ means any written statement under the sole responsibility of a legal or natural person subject to Libyan Civil Aviation Regulations (LYCARs) and which confirms that the applicable requirements of the LYCARs and of the delegated and implementing acts adopted on the basis

thereof relating to a legal or natural person, product, part, non-installed equipment, equipment to control unmanned aircraft remotely, safety-related aerodrome equipment, ATM/ANS system, ATM/ANS constituent or flight simulation training device are complied with;

‘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.

‘Electronic Engine Control System’ (EECS) means an Engine Control System in which the primary functions are provided using electronics. It includes all the components (e.g. electrical, electronic, hydromechanical and pneumatic) necessary for the control of the Engine and may incorporate other control functions where desired.

‘Emergency locator transmitter’ is a generic term describing equipment that broadcasts distinctive signals on designated frequencies and, depending on application, may be activated by impact or may 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 Control System’ means any system or device which is part of the Engine Type design, which controls, limits or monitors Engine operation and is necessary for continued airworthiness of the Engine.

‘ETOPS (Extended Range Operations for Two-Engine Aeroplanes)’ means those operations of two-engine aeroplanes that are approved by the Director General of Civil Aviation Authority (ETOPS approval), to operate beyond the threshold distance determined in accordance with operational requirements from an “Adequate Aerodrome”.

‘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.

‘Exhaust Gas Temperature’ means the average temperature of the exhaust gas stream.

‘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.

‘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.

‘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.

‘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.

‘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.

‘Fault (or) Failure’ means an occurrence which affects the operation of a component, part, or element such that it can no longer function as intended.

‘Fault (or) Failure Accommodation’ means the capability to mitigate, either wholly or in part, the effects of a Fault or Failure.

‘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.

‘Flight Information Service’ means a service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights;

‘Flight Simulation Training Device’ means any type of device in which flight conditions are simulated on the ground, including flight simulators, flight training devices, flight and navigation procedures trainers and basic instrument training devices;

‘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.

‘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 to minutes without any failure that would create a hazard to the aircraft

‘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.

‘Full-up Configuration’ (*Engine related definition*) means an EECS that has no known Faults or Failures present.

‘General Air Traffic’ means all movements of civil aircraft and state aircraft carried out in conformity with the procedures of the International Civil Aviation Organization (‘ICAO’);

‘Ground-Handling Service’ means any service provided at aerodromes comprising safety -related activities in the areas of ground supervision, flight dispatch and load control, passenger handling, baggage handling, freight and mail handling, apron handling of aircraft, aircraft services, fuel and oil handling, and loading of catering; including the case where aircraft operators provide those ground handling services to themselves (self-handling);

‘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.

‘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.

‘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.

‘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 rotorcraft that, for its horizontal motion, depends principally on its engine-driven rotors.

‘Heliport’ means an area of land, water, or structure used or intended to be used for the landing and take-off of helicopters.

Human Factors principles. Principles which apply to the term is not defined aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance.

Human Performance. Human capabilities and limitations the term is not defined. Which have an impact on the safety and efficiency of aeronautical operations.

'IFR conditions' means weather conditions below the minimum for flight under Visual Flight Rules

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

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

'International Standards and Recommended Practices' means the international standards and recommended practices adopted by ICAO in accordance with Article 37 of the Chicago Convention;

"Large aeroplane" means an aeroplane that has the Certification Specifications for large aeroplanes "CS-25" or equivalent in its certification basis

"Large helicopter" means a helicopter that has the Certification Specifications for large rotorcraft "CS-29" or equivalent in its certification basis

'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.

'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.

'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 maximum take-off mass of more than 5700 kg, or a multi-engined helicopter;

'LLA1 Aircraft' means the following manned Libyan Light Aircraft:

- (i) an aeroplane with a maximum take-off mass (MTOM) of 1200 kg or less that is not classified as complex motor-powered aircraft;
- (ii) a sailplane or powered sailplane of 1200 kg MTOM or less;
- (iii) a balloon with a maximum design lifting gas or hot air volume of not more than 3400 m³ for hot air balloons, 1050 m³ for gas balloons, 300 m³ for tethered gas balloons;
- (iv) an airship designed for not more than four occupants and a maximum design lifting gas or hot air volume of not more than 3400 m³ for hot air airships and 1000 m³ for gas airships;

'LSA Aircraft' means a light sport aeroplane which has all of the following characteristics:

- (i) a Maximum Take-off Mass (MTOM) of not more than 600 kg;
- (ii) a maximum stalling speed in the landing configuration (VS0) of not more than 45 knots Calibrated Airspeed (CAS) at the aircraft's maximum certificated take-off mass and most critical centre of gravity;
- (iii) a maximum seating capacity of no more than two persons, including the pilot;
- (iv) a single, non-turbine engine fitted with a propeller;
- (v) a non-pressurised cabin;

‘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, inertias, forces or ground or water reactions.

‘Low-occupancy aeroplane’ means an aeroplane that has a maximum operational passenger seating configuration of:

- (i) up to and including 19 seats, or;
- (ii) up to and including one third of the maximum passenger seating capacity of the type-certified aeroplane, as indicated in the aeroplane type-certificate data sheet (TCDS), provided that both of the following conditions are met:
 - (a) the total number of passenger seats approved for occupancy during taxiing, take-off or landing does not exceed 100 per deck;
 - (b) the maximum operational passenger seating configuration during taxiing, take-off or landing in any individual zone between pairs of emergency exits (or any dead-end zone) does not exceed one third of the sum of the passenger seat allowances for the emergency exit pairs bounding that zone (using the passenger seat allowance for each emergency exit pairs as defined by the applicable certification basis of the aeroplane). For the purpose of determining compliance with this zonal limitation, in the case of an aeroplane that has deactivated emergency exits, it shall be assumed that all emergency exits are functional.’

‘Libyan Civil Aviation Authority – LYCAA’ means the entity designated by the State of Libya and having the necessary powers and allocated responsibilities for performing the tasks related to certification, oversight and enforcement, and with the delegated and implementing acts adopted on the basis thereof, in accordance with Article (5) of Civil Aviation Law No.6 (2005);

‘Maintenance’ means any one or combination of the following activities: overhaul, repair, inspection, replacement, modification or defect rectification of an aircraft or component, with the exception of pre-flight inspection;

‘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.

‘Maximum structural landing mass’ means the maximum permissible total aeroplane mass upon landing under normal circumstances.

‘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.

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

‘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.

‘Maximum Engine Over-speed’ means the maximum rotational speed of a 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).

‘Maximum Engine Over-torque’ means (applicable only to turbo-propeller and turbo-shaft engines incorporating free power-turbines) 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 Exhaust Gas Over-temperature’ means (turbine engines) 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). This is not to be confused with maximum temperatures established for use during starting operations.

‘Maximum Power-turbine Over-speed’ means (applicable only to free power-turbine engines for helicopters) 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 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).

‘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.

‘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.

‘Non-installed Equipment’ means any instrument, equipment, mechanism, apparatus, appurtenance, software or accessory carried on board of an aircraft by the aircraft operator, which is not a part, and which is used or intended to be used in operating or controlling an aircraft, supports the occupants' survivability, or which could impact the safe operation of the aircraft;

‘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 whether or not within the territory of the Member States;

‘Operator’ shall mean any legal or natural person, operating or proposing to operate one or more aircraft;

‘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.

‘Part’ means any element of a product, as defined by that product's type design;

‘Parts and Appliances’ shall mean any instrument, equipment, mechanism, part, apparatus, appurtenance or accessory, including communications equipment, that is used or intended to be used in operating or controlling an aircraft in flight and is installed in or attached to the aircraft. It shall include parts of an airframe, engine or propeller;

‘Product’ shall mean an aircraft, engine or propeller;

‘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 Manual.

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

‘Primary Mode’ (Engine related definition) means the mode that is intended to be used for controlling the Engine under normal operation. This is often referred to as the ‘normal mode’.

‘Primary System’ means the part of the Engine/Propeller Control System used for controlling the Engine/Propeller under normal operation.

‘Programmable Logic Device’ (PLD) means an electronic component that is altered to perform an installation specific function. PLDs include, but are not limited to, Programmable Array Logic components (PAL), General Array Logic components (GAL), Field Programmable Gate Array (FPGA) components, and Erasable Programmable Logic Devices (EPLD).

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

‘Protective breathing equipment’ means breathing equipment for protection against smoke, fumes and other harmful gases.

‘Pre-Flight Inspection’ means the inspection carried out before flight to ensure that the aircraft is fit for the intended flight;

‘Principal Place of Business’ means the head office or the registered office of the undertaking within which the principal financial functions and operational control of the activities.

‘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.

‘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.

‘Qualified Entity’ means an accredited legal or natural person which may be charged with certain certification or oversight tasks under the LYCARs and under the control and the responsibility of the Director General of Libyan Civil Aviation Authority;

‘Rating’ shall mean a statement entered on a licence, setting forth privileges, special conditions or limitations pertaining thereto.

‘Oversight’ means the verification, by the LYCAA inspectors, on a continuous basis that the requirements of the LYCARs and of the delegated and implementing acts adopted on the basis thereof, on the basis of which a certificate has been issued or in respect of which a declaration has been made, continue to be complied with;

‘Rated 30-Second OEI Power’ means, with respect to rotorcraft turbine engines, the approved one-engine-inoperative brake horsepower developed under static conditions at specified altitudes and temperatures within the operating limitations established for the engine, for continuation of the one-flight operation after the failure or shutdown of one engine in multi-engine rotorcraft, for up to three periods of use no longer than 30 seconds each in any one flight, and followed by mandatory inspection and prescribed maintenance action.

‘Rated 2-Minute OEI Power’ means, with respect to rotorcraft turbine engines, the approved one-engine-inoperative brake horsepower developed under static conditions at specified altitudes and temperatures within the operating limitations established for the engine, for continuation of the one-flight operation after the failure or shutdown of one engine in multi-engine rotorcraft, for up to three periods of use no longer than 2 minutes each in any one flight, and followed by mandatory inspection and prescribed maintenance action.

‘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.

‘Reversible Pitch Propeller’ means a Propeller in which blade angle can be changed by the flight crew to produce reverse thrust.

‘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’).

‘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:

- **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.
- **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.
- **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.
- **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 for that operation.

‘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.

‘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.

‘Stop-way’ means an area beyond the take-off runway, no less wide than the runway and centred upon the extended centre-line 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.

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

- for piston engines, it is limited in use to a continuous period of not more than 5 minutes;
- for turbine engines installed in aeroplanes and helicopters, limited in use to a continuous period of not more than 5 minutes; and
- for turbine engines installed in 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.

‘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.

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

‘True airspeed’ means the airspeed of an aircraft relative to undisturbed air.

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

‘Uncovered Fault’ means a Fault or Failure for which either no detection mechanism exists or, if detected, no accommodation exists.

‘Variable Pitch Propeller’ means a Propeller, the Pitch Setting of which changes or can be’, changed: when the Propeller is rotating. This includes

- A non-governing Propeller, the Pitch Setting of which is directly under the control of the flight crew (controllable pitch propeller).
- A governing 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).

- A governing Propeller, the Pitch Setting of which may be controlled by a combination of the methods of a. and b.

'2½-Minute OEI 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. The 2½ minute period for use of 2½-Minute OEI Power and/or Thrust is additional to the 5 minute or 10-minute period at take-off power and/or thrust (see above.) and may be added to the take-off limitation at any point in time.

'2½-Minute OEI 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.

'30-Minute OEI 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.

'30-Minute OEI 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.

'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.

'Safety-Related Aerodrome Equipment' means any instrument, equipment, mechanism, apparatus, appurtenance, software or accessory that is used or intended to be used to contribute to the safe operation of aircraft at an aerodrome;

'Safety Performance' means an organisation's safety achievement, as defined by its safety performance targets and safety performance indicators;

'Safety Performance Indicator' means a parameter used for monitoring and assessing safety performance;

'Safety Performance Target' means a planned or intended objective for complying with safety performance indicators over a given period of time;

'Unmanned Aircraft' means any aircraft operating or designed to operate autonomously or to be piloted remotely without a pilot on board;

'Remote Pilot' means a natural person responsible for safely conducting the flight of an unmanned aircraft by operating its flight controls, either manually or, when the unmanned aircraft flies automatically, by monitoring its course and remaining able to intervene and change the course at any time;

'Equipment to Control Unmanned Aircraft Remotely' means any instrument, equipment, mechanism, apparatus, appurtenance, software or accessory that is necessary for the safe operation of an unmanned aircraft, which is not a part, and which is not carried on board of that unmanned aircraft;

Subpart 02 - ABBREVIATIONS

A	Aeroplane
a/c	Aircraft
AAC	Aeronautical Administrative Communications
AAL	Above Aerodrome Level
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
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
AIS	Aeronautical Information Service
ALARP	As Low As Reasonably Practicable
ALSF	Approach Lighting System with sequenced Flashing lights
AMC	Acceptable Means of Compliance
AMEL	Aircraft Maintenance Engineer Licence
AMSL	Above Mean Sea Level
ANP	Actual Navigation Performance
AOC	Aeronautical Operational Control
AOC	Air Operator Certificate
APU	Auxiliary Power Unit
APV	Approach Procedure with Vertical guidance
ARA	Airborne Radar Approach
ARA	Authority Requirements for Aircrew
ARO	Authority Requirements for Air Operations
ARP	Aerospace Recommended Practices
AS	equivalent airspeed
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
BITD	Basic Instrument Training Device
BTPS	means body temperature, pressure, saturated, i.e.37°C, ambient pressure and saturated with water vapour at 47 mmHg partial pressure.
BTPD	means body temperature, pressure, dry, i.e. 37°C, ambient pressure and no water vapour.
CAS	means calibrated airspeed.
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
CM	Context Management
CMV	Converted Meteorological Visibility
C of A	Certificate of Airworthiness
C of P	Code of Practice
C of R	Certificate of Registration
CP	Committal Point
CPA	Closest Point of Approach
CPDLC	Controller Pilot Data Link Communication
CPL	Commercial Pilot Licence
C-PED	Controlled Portable Electronic Device
CRE	Class Rating Examiner
CRI	Class Rating Instructor
CRM	Crew Resource Management
CS	Certification Specifications
CVR	Cockpit Voice Recorder
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
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
EFB	Electronic Flight Bag
EFIS	Electronic Flight Instrument System
EGT	Exhaust Gas Temperature
ELT	Emergency Locator Transmitter
ELT(AD)	Emergency Locator Transmitter (Automatically Deployable)
ELT(AF)	Emergency Locator Transmitter (Automatic Fixed)
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
EVS	Enhanced Vision System
FAF	Final Approach Fix
FALS	Full Approach Lighting System
FANS	Future Air Navigation Systems
FAP	Final Approach Point
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
FPM	feet per minute
FSTD	flight simulation training device
Ft	Feet
FTD	Flight Training Device
FTE	Full Time Equivalent
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
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
IAS	means indicated airspeed.
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
IFR	means instrument flight rules.
ILS	means instrument landing system
ISO	International Organization for Standardization
IV	Intra-Venous
Kg	Kilograms
Km	Kilometers
kt	Knots
LDA	Landing Distance Available
LDP	Landing Decision Point
LED	Light-Emitting Diode
LHS	Left Hand Seat
LIFUS	Line Flying Under Supervision
LNAV	Lateral Navigation
L o A	Letter of Acceptance
LOC	Localiser
LOE	Line-Oriented Evaluation
LOFT	Line-Oriented Flight Training
LOQE	Line-Oriented Quality Evaluation
LOS	Limited Obstacle Surface
LPV	Localiser Performance with Vertical Guidance

LRCS	Long Range Communication System
LRNS	Long Range Navigation System
LVO	Low Visibility Operation
LVP	Low Visibility Procedures
LVTO	Low Visibility Take-Off
m	metres
M	means Mach Number.
MIL Spec	means USA Military Specification.
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
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
NF	Free power turbine speed
NG	engine gas generator speed
NM	Nautical Miles
NTPD	means normal temperature, pressure, dry, i.e. 21°C, 760 mmHg and no water vapour.
NPA	means Notice of Proposed Amendment
NOTAM	notice to airmen
NOTECHS	non-technical skills evaluation
NOTOC	notification to captain
NPA	non-precision approach
NPA	Notice of Proposed Amendment
NVD	night vision device
NVG	night vision goggles
NVIS	night vision imaging system
OAT	outside air temperature
OCH	obstacle clearance height
OCL	oceanic clearance
ODALS	omnidirectional approach lighting system
OEI	one-engine-inoperative
OFS	obstacle-free surface
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
PBE	protective breathing equipment
PBN	performance-based navigation
PCDS	personnel carrying device system
PDA	premature descent alert
PDP	predetermined point
PED	portable electronic device
PIC	pilot-in-command
PIN	personal identification number
PIS	public interest site
PNR	point of no return

POH	pilot's operating handbook
PRM	person with reduced mobility
QAR	quick access recorder
QFE	atmospheric pressure at aerodrome elevation / runway threshold
QNH	atmospheric pressure at nautical height
RA	resolution advisory
RAT	ram air turbine
RCC	rescue coordination centre
RCF	reduced contingency fuel
RCLL	runway centre line lights
RF	fixed radius
RF	radio frequency
RFC	route facility chart
RI	ramp inspection
RI	rectification interval
RIE	rectification interval extension
RNAV	area navigation
RNP	required navigation performance
ROD	rate of descent
RP	rotation point
RPM	revolutions per minute.
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
S	South
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
SBAS	satellite-based augmentation system
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
STPD	means standard temperature, pressure, dry, i.e. 0°C, 760 mmHg and no water vapour.
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
TCH	type certificate holder
TDP	take-off decision point
TDP	with respect to rotorcraft means take-off decision point.
TDZ	touchdown zone
THR	threshold
TI	Technical Instructions
TIT	turbine inlet temperature
TMG	touring motor glider
TODA	take-off distance available (aeroplanes)
TODAH	take-off distance available (helicopters)
TODRH	take-off distance required (helicopters)
TORA	take-off run available
TSO	Technical Standard Order.
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
UTC	coordinated universal time
V₂	take-off safety speed
V_{st}	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
V_T	threshold speed
V_{TOL}	vertical take-off and landing
V_{TOSS}	take-off safety speed
V_A	design maneuvering speed.
V_B	design speed for maximum gust intensity.
V_C	design cruising speed.
V_D/M_D	design diving speed.
V_{DF}/M_{DF}	demonstrated flight diving speed.
V_{EF}	the speed at which the critical engine is assumed to fail during take-off.
V_F	design flap speed.
V_{F1}	the design flap speed for procedure flight conditions.
V_{FC}/M_{FC}	maximum speed for stability characteristics.
V_{FE}	maximum flap extended speed.
V_{FTO}	final take-off speed.
VFR	visual flight rules.
V_H	maximum speed in level flight with maximum continuous power.
VHF	very high frequency.
V_{LE}	maximum landing gear extended speed.
V_{LO}	maximum landing gear operating speed.
V_{LOF}	lift-off speed.
V_{MC}	minimum control speed with the critical engine inoperative.
V_{MCA}	the minimum control speed, take-off climb.
V_{MCG}	the minimum control speed, on or near ground.
V_{MCL}	the minimum control speed, approach and landing.
V_{MO}/M_{MO}	maximum operating limit speed.

V_{MU}	minimum unstick speed.
V_{NE}	never-exceed speed.
V_R	rotation speed.
V_{RA}	rough airspeed.
V_{REF}	reference landing speed.
V_S	the stall speed or the minimum steady flight speed at which the aeroplane is controllable.
V_{SO}	the stall speed or the minimum steady flight speed in the landing configuration.
V_{SR}	reference stall speed.
V_{SR0}	reference stall speed in the landing configuration.
V_{SR1}	reference stall speed in a specific configuration.
V_{SW}	speed at which onset of natural or artificial stall warning occurs.
V_{S1}	the stall speed or the minimum steady flight speed obtained in a specified configuration.
V_{S1g}	the one-g stall speed at which the aeroplane can develop a lift force (normal to the flight path) equal to its weight.
V_T	threshold speed.
V_{Tmax}	maximum threshold speed.
V_{TOSS}	take-off safety speed for Category A rotorcraft.
V_Y	speed for best rate of climb.
V₁	the maximum speed in the take-off at which the pilot must take the first action (e.g. apply brakes, reduce thrust, deploy speed brakes) to stop the aeroplane within the accelerate-stop distance. V ₁ also means the minimum speed in the take-off, following a failure of the critical engine at V _{EF} , at which the pilot can continue the take-off and achieve the required height above the take-off surface within the take-off distance.
V₂	take-off safety speed.
V_{2min}	minimum take-off safety speed.
V₃	steady initial climb speed with all engines operating.
WAAS	wide area augmentation system
WAC	world aeronautical chart
WIFI	wireless fidelity
ZFTT	zero flight-time training