

# NEPALESE CIVIL AIRWORTHINESS REQUIREMENTS

## SECTION A

### GENERAL

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#### CHAPTER A.1

ISSUE 5  
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#### DEFINITIONS IN N. C. A. R.

In these Requirements, unless the context otherwise requires, the following definitions shall apply:

**'Accepted'** means satisfying the applicable prevailing rules, regulations and requirements.

**'AMT'** means holder of aircraft maintenance technician licence in accordance with NCAR Section F and/or NCAR Part-66.

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

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

**'Air Operator'** means a person, organization or enterprise who is the holder of an Air Operator Certificate.

**'Air Operator Certificate'** means a certificate issued by the Director General pursuant to the Rules that authorizes the operator to carryout specified commercial air transport operations.

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

**'Aircraft- category'** means classification of aircraft according to specified basic characteristics, e.g. aeroplane, helicopter, glider, free balloon.

**'Aircraft- type of'** means all aircraft of the same basic design including all modification thereto except those modification which result in a change in handling or flight characteristics.

**'Aircraftavionics'** means a term designating any electronic device- including its electrical part- for use in an aircraft, including radio, automatic flight control, and instrument system.

**'Aircraft Components'** include airframe structural parts, engines, propellers, instruments, system components, accessories and equipment forming part of an aircraft as defined in its type certificate data.

**'Aircraft System'** means a combination of aircraft components and associated wiring, plumbing or other interconnections installed in an aircraft to perform specific functions.

**'Afterburning'** means a mode of engine operation wherein a combustion system fed (in whole or part) by vitiated air is used.

**'Airship'** means a power-driven lighter-than-air aircraft.

**'Air Time'** with respect to keeping technical records, means the time in hours and minutes from the moment an aircraft leaves the ground on every flight until it touches the ground at the end of that flight.

**'Air Transport Service'** means a commercial air service that is operated for the purpose of transporting persons, personal belongings, baggage, goods or cargo in aircraft between two points for remuneration or hire.

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**'Airworthiness Directive'** means mandatory modifications or special inspections required by the Director General or by the airworthiness authority of type certificate holder.

**'Airworthiness Limitations'** means a life limitation applicable to life limited part or any maintenance task which is mandatory as a condition of the type certificate of an aeronautical product or as specified by Director General.

**'Airworthy'** means the status of an aircraft, engine, propeller or part when it conforms to its approved design and is in a condition for safe operation.

**'Airworthiness Standard'** in respect of the design manufacture or maintenance of an aeronautical product, means the description, in terms of a minimum standard, of the properties and attributes of the configuration, material and performance of physical characteristics of that aeronautical product, and includes the procedures to ascertain compliance with or to maintain that minimum standard, as specified in the applicable parts of the Airworthiness Manual.

**'Anticipated operating conditions'** means those conditions which are known from experience or which can be reasonably envisaged to occur during the operational life of the aircraft taking into account the operations for which the aircraft is made eligible, the conditions so considered being relative to the meteorological state of the atmosphere, to the configuration of the terrain, to the functioning of the aircraft, to the efficiency of the personnel and to all the factors affecting safety in flight. Anticipated operating conditions do not include :

- a) those extremes which can be effectively avoided by means of operating procedures; and
- b) those extremes which occur so infrequently that to require the Standards to be met in such extremes would give a higher level of airworthiness than experience has shown to be necessary and practical.

**'Approach Phase'** means the operating phase defined by the time during which the engine is operated in approach operating mode.

**'Appropriate airworthiness requirements'** means the comprehensive and detailed airworthiness codes established, adopted or accepted by a Contracting State for the class of aircraft, engine or propeller under consideration.

**'Approved'** means accepted by the Director General in writing as suitable for a particular purpose.

**'Approved Maintenance Organization'** means an organization approved/accepted/validated by CAA Nepal, in accordance with NCAR Part-145 or NCAR Chapter D.1 as applicable, to perform maintenance of aircraft or parts thereof and operating under supervision of CAA Nepal.

**'Approved Training'** means training conducted under special curricula and supervision approved by CAA Nepal.

**'Approved Training Organization'** means an organization approved/accepted/validated by and operating under the supervision of CAA Nepal in accordance with the requirements of NCAR Part-147 or NCAR Chapter D.4 to perform approved training.

**'Apron'** means a part of an aerodrome, other than the maneuvering area, that is intended to be used for the loading and unloading of passengers and cargo, the refueling, servicing, maintenance and parking of aircraft and the movement of aircraft, vehicles and persons engaged in services necessary for those purposes.

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**'Associated aircraft systems'** means those aircraft systems drawing electrical/pneumatic power from an auxiliary power unit during ground operations. **'Authorized Person'** means an officer of Civil Aviation Authority of Nepal to whom the Director General has delegated functions specified in these Requirements.

**'Auxiliary power-unit (APU)'** means a self-contained power-unit on an aircraft providing electrical/pneumatic power to aircraft systems during ground operations. **'Avionics'** means the electrical, instrument and electronic components and systems of aircraft.

**'Balloon'** means a non-power-driven lighter than air aircraft.

**'Balloon Component'** means any part, soundness and correct functioning of which when fitted to a balloon is essential for the continued airworthiness and safety of the balloon.

**'Basket'** means the container suspended beneath the envelope, mainly used for the balloon occupants.

**'By-pass ratio'** means the ratio of the air mass flow through the by-pass ducts of a gas turbine engine to the air mass flow through the combustion chambers calculated at maximum thrust when the engine is stationary in an international standard atmosphere at sea level.

**'CAA'** stands for Civil Aviation Authority.

**'CAAN'** stands for Civil Aviation Authority of Nepal.

**'Category A.'** means with respect to helicopters, means a multi- engine helicopter designed with engine and system isolation features specified in Part IVB and capable of operations using take-off and landing data scheduled under a critical engine failure concept which assures adequate designated surface area and adequate performance capability for continued safe flight or safe rejected take-off.

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

**'Certify as airworthy (to)'** means to certify that an aircraft or parts thereof comply with current airworthiness requirements after maintenance has been performed on the aircraft or parts thereof.

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

**'Climb Phase'** means the operating phase defined by the time during which the engine is operated in climb operating mode. **'Commercial air transport operation'** means an aircraft operation involving the transport of passenger, cargo or mail for remuneration or hire.

**'Competency'** means a combination of skills, knowledge and attitudes required to perform a task to the prescribed standards.

**'Component'** means any material, part or subassembly intended for use on an aeronautical product.

**'Common mark'** means a mark assigned by the International Civil Aviation Organization to the common mark registering authority registering aircraft of an international operating agency on other than a national basis.

**'Common mark registering authority'** is the authority maintaining the non-national register or, where appropriate, the part thereof, in which aircraft of an international operating agency are registered.

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**'Configuration (as applied to the aeroplane)'** means a particular combination of the positions of the moveable elements, such as wing flaps and landing gear, etc., that affect the aerodynamic characteristics of the aeroplane.

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

**'Continuing airworthiness'** means the set of processes by which an aircraft, engine, propeller or part complies with the applicable airworthiness requirements and remains in a condition for safe operation throughout its operating life.

**'Contracting State'** means a State which is a party to the Convention.

**'Convention'** means the Convention on International Civil Aviation, and includes the international standards and recommended practices and procedures adopted and/or approved by the International Civil Aviation Organization in pursuance of Article 37 of the Convention.

**'Corrosion Level 1'** is defined as being corrosion damage that is occurring between successive inspections which is local and can be re-worked within structural repair manual limits or can be attributed to an event not typical of an operator usage of other aircraft in the same fleet (e.g. mercury spill), or where the latest inspection reveals corrosion damage which is a cumulative blend-out of several previous inspections now exceeds the allowable limits requiring a repair or partial replacement of a primary structural member.

**'Corrosion Level 2'** is defined as corrosion damage occurring between successive inspections requiring re-work which exceeds the structural repair manual limits or which requires a repair or partial replacement of a primary structural member, but is not of immediate airworthiness concern.

**'Corrosion Level 3'** is defined as being corrosion damage of immediate airworthiness concern requiring expeditious action.

**'Crew Member'** means a person assigned or self assigned to duty in an aircraft during flight time.

**'Critical Engine(s)'** means any engine whose failure gives the most adverse effect on the aircraft characteristics relative to the case under consideration.

**'CRS'** means Certificate of Release to Service.

**'Date of Manufacture'** means the date of issue of the document attesting that the individual aircraft or engine as appropriate conforms to the requirements of type or the date of an analogous document.

**'Day'** means the period beginning one half hour before sunrise and ending one half hour after sunset.

**'Derived version'** means an aircraft gas turbine engine of the same generic family as an originally type-certificated engine and having features which retain the basic core engine and combustor design of the original model and for which other factors, as judged by the certifying authority, have not changed.

**'Derived version of a helicopter'** means a helicopter which, from the point of view of airworthiness, is similar to the noise certificated prototype but incorporates changes in type design which may affect its noise characteristics adversely.

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**'Derived version of an aeroplane'** means an aeroplane which, from the point of view of airworthiness, is similar to the noise certificated prototype but incorporates changes in type design which may affect its noise characteristics adversely.

**'Director General'** means the Director General of Civil Aviation Authority of Nepal.

**'Design landing mass'** means the maximum mass of the aircraft at which, for structural design purposes, it is assumed that it will be planned to land.

**'Design take-off mass'** means the maximum mass at which the aircraft, for structural design purposes, is assumed to be planned to be at the start of take-off run.

**'Design taxiing mass'** means the maximum mass of the aircraft at which structural provision is made for load liable to occur during use of the aircraft on the ground prior to the start of take-off.

**'Discrete source damage'** means structural damage of the aeroplane that is likely to result from: impact with a bird, uncontained fan blade failure, uncontained engine failure, uncontained high-energy rotating machinery failure or similar causes.

**'EASA'** stands for European Aviation Safety Agency.

**'Emergency Locator Transmitter (ELT)'** means a generic term describing equipment which broadcasts distinctive signal on designated frequencies and, depending on application, may be automatically activated by impact or be manually activated.

**'Engine'** means a unit used or intended to be used for aircraft propulsion. It consists of at least those components and equipment necessary for functioning and control, but excludes the propeller/rotors (if applicable).

**'Effective CPCP'** is defined as being a Corrosion Prevention and Control Program which is capable of maintaining all corrosion findings to corrosion level 1 or better between successive inspections of the same area.

**'Envelope'** means the enclosure in which the lifting medium is contained.

**'External equipment (helicopter)'**. Any instrument, mechanism, part, apparatus, appurtenance, or accessory that is attached to or extends from the helicopter exterior but is not used nor is intended to be used for operating or controlling a helicopter in flight and is not part of an airframe or engine. **'Exhaust Nozzle'** means in the exhaust emissions sampling of gas turbine engines where the jet effluxes are not mixed (as in some turbofan engines for example) the nozzle considered is that for the gas generator (core) flow only. Where, however, the jet efflux is mixed the nozzle considered is the total exit nozzle. **'FAA'** stands for Federal Aviation Agency of the United States of America.

**'Factor of safety'** means a design factor used to provide for the possibility of loads greater than those assumed, and for uncertainties in design and fabrication. **'Final approach and take-off area (FATO)'** means a defined area over which the final phase of the approach manoeuvre to hover or landing is completed and from which the take-off manoeuvre is commenced. Where the FATO is to be used by performance class 1 helicopters, the defined area includes the rejected take-off area available.

**'FAR'** stands for Federal Aviation Regulations published by the Government of the United States of America.

**'Fireproof'** means the capability to withstand the application of heat by a flame for a period of 15 minutes.

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Note.— The characteristics of an acceptable flame can be found in ISO 2685. **'Fireproof material'** means a material capable of withstanding heat as well as or better than steel when the dimensions in both cases are appropriate for the specific purpose.

**'Fire resistant'** means the capability to withstand the application of heat by a flame for a period of 5 minutes.

Note.— The characteristics of an acceptable flame can be found in ISO 2685.

**'First Aid Kit'** means a kit containing such items which can be used for the purpose of first aid treatment of injuries which may occur in flight or as a result of minor accidents.

**'Flight Manual'** means a manual, associated with certificate of airworthiness, containing limitations within which the aircraft is to be considered airworthy, and instructions and informations necessary for flight crew member for the safe operation of aircraft.

**'Flight Time'** means the Total Time in hours and minutes from the moment the aircraft first moves under its own power for the purpose of taking off until the moment it comes to rest at the end of the flight.

**'Flight Time - Aeroplanes'** means the total time from the moment an aeroplane first moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight.

**'Flight Time – 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.

**'Foreign Aircraft'** means any aircraft other than an aircraft registered in Nepal.

**'FSSD'** means Flight Safety Standards Department.

**'Ground Handling'** means services necessary for an aircraft's arrival at, and departure from, an airport, other than air traffic services.

**'Glider'** means a non-power-driven heavier-than-air aircraft which derives its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

**'Glider flight time'** means the total time occupied in flight, whether being towed or not, from the moment the glider first moves for the purpose of taking off until the moment it comes to rest at the end of the flight.

**'Gyroplane'** means a heavier-than-air aircraft supported in flight by the reactions of the air on one or more rotors which rotate freely on substantially vertical axes.

**'Heavier-than-air'** means any aircraft deriving its lift in flight chiefly from aerodynamic forces.

**'Helicopter'** 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.

**'Hot Air Balloon'** means a balloon that derives its lift from heated air contained within the envelope.

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

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

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**'IFR'** stands for Instrument Flight Rules.

**'International operating agency'** is an agency of the kind contemplated in Article 77 of the Convention.

**'Journey Log'** means a chronological record of the particulars relating to the operation and maintenance of an aircraft.

**'Landing'** means

- (a) in respect of an aircraft other than an airship or balloon, the act of coming into contact with a supporting surface, and includes the acts immediately preceding and following the coming into contact with that surface, and
- (b) in respect of an airship or balloon, the act of bringing the airship or balloon under restraint, and includes the acts immediately preceding and following the bringing of the airship or balloon under restraint.

**'Landing surface'** means that part of the surface of an aerodrome which the aerodrome authority has declared available for the normal ground or water run of aircraft landing in a particular direction.

**'Large aeroplane'** means an aeroplane of a maximum certificated take-off mass of over 5700 Kg.

**'Lighter-than-air aircraft'** means any aircraft supported chiefly by its buoyancy in the air.

**'Limit loads'** means the maximum loads assumed to occur in the anticipated operating conditions.

**'Load factor'** means the ratio of a specified load to the weight of the aircraft, the former being expressed in terms of aerodynamic forces, inertia forces, or ground reactions.

**'Life Limit Part'** means a part which, as a condition of the type certificate, may not exceed a specified time, or number of operating cycles, in service.

**'Maintenance'** means the performance of tasks required to ensure the continuing airworthiness of an aircraft, including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair.

**'Maintenance organization's procedure manual'** means a document endorsed by the head of the maintenance organization which details the maintenance organization's structure and management responsibilities, scope of work, description of facilities, maintenance procedures and quality assurance or inspection systems.

**'Maintenance Programme'** means a document which describes the specific schedule 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'** means 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 organization's procedure manual or under an equivalent system.

**'Major Maintenance'** means the overhaul, major repair or extensive modification of aircraft or aircraft components, the extensive dismantling or reassemble of them and the manufacture of simple replacement parts in accordance with approved data.

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**'Manufacturer'** means the person, organization or enterprise who has been granted authority, by the Civil Aviation Authority of a Contracting State, to manufacture an aeronautical product in accordance with the standards specified in a design approval issued by the Civil Aviation Authority.

**'Master minimum equipment list (MMEL)'** means a list established for a particular aircraft type by the organization 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.

**'Minimum equipment list (MEL)'** means a list which provides for the operation of aircraft, subject to specified conditions, with particular equipment inoperative, prepared by an operator in conformity with, or more restrictive than, the MMEL established for the aircraft type.

**'Minor Maintenance'** means all work relating to the maintenance of aircraft other than major maintenance. Minor maintenance includes adjustment, periodic inspection, functional testing, component replacement, minor repair and minor modification of aircraft including components and equipment.

**'Modification'** means any alteration to an aircraft or aircraft component affecting its design, construction, equipment, performance or its safe operation.

**'MRB (Maintenance Review Board)'** means the Federal Aviation Administration (FAA) Maintenance Review Board report that provides requirements to manufacturers to ensure that their Maintenance Planning Documents (MPD) provide continuing airworthiness for their aircraft.

**'MSG (Maintenance Steering Group)-3'** means the Air Transport Association (ATA) Airline/ Manufacturer Maintenance Program Planning Document. It describes the "Top Down" approach to Maintenance whereby failures in aircraft components are analyzed at the systems level first and then "Downward" toward establishing specific maintenance tasks.

**'NCAR'** stands for Nepalese Civil Airworthiness Requirements. NCAR Part-145, NCAR Part-M, NCAR Part-66 and NCAR Part-147 forms the integral part of NCAR.

**'Nepalese Aircraft'** means aircraft that is registered pursuant to Chapter B.5 of NCAR.

**'NFSR'** means Nepalese Flying School Requirements.

**'Night'** means the hours between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise, as may be prescribed by authority.

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

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

**'Organization responsible for the type design'** means the organizations that holds the type certificate, as equivalent document, for an aircraft, engine or propeller type, issued by a contracting state.

**'Ornithopter'** means a power-driven heavier-than-air aircraft supported in flight chiefly by the reactions of the air on planes to which a flapping motion is imparted.

**'Owner'** means the person, organization or enterprise lawfully entitled to possession of an aircraft, except that, if an aircraft is hired for any period exceeding 28 days, the hirer shall be regarded as the owner for the purposes of these Requirements.



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**'Oxides of nitrogen'** means the sum of the amounts of the nitric oxide and nitrogen dioxide contained in a gas sample calculated as if the nitric oxide were in the form of nitrogen dioxide.

**'Passenger'** means a person, other than a crew member, who is carried on board an aircraft.

**'Performance Class 1 helicopter'** A helicopter with performance such that, in case of engine failure, it is able to land on the rejected take-off area or safely continue the flight to an appropriate landing area.

**'Performance Class 2 helicopter'** : A helicopter with performance such that, in case of engine 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'** A helicopter with performance such that, in case of engine failure at any point in the flight profile, a forced landing must be performed.

**'Physician's Kit'** a kit containing such life saving drugs intended to be administered only by qualified medical practitioner if and when available.

**'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 safe conduct of the flight.

**'Power Plant'** means the system consisting of all the engines, drive system component (if applicable), and propeller (if installed), their accessories, ancillary parts, and fuel and oil systems installed on an aircraft but excluding the rotors for a helicopter.

**'Powered-Lift'** means a heavier-than-air aircraft capable of vertical take-off, vertical landing, and low-speed flight, which depends principally on engine-driven lift devices or engine thrust for the lift during these flights regimes and on non-rotating aerofoil(s) for lift during horizontal flight.

**'Pressure-altitude'** means an atmospheric pressure expressed in terms of altitude which corresponds to that pressure in the Standard Atmosphere.

**'Primary Structure'** means a structure that carries flight, ground or pressure loads.

**'Private Aircraft'** means an aircraft that is registered as a private aircraft pursuant to Chapter B.5 and Chapter A.4 of NCAR.

**'Permit to Fly'** means a certificate of authorization granted by the Director General permitting the flight on private operations only of an aircraft which cannot comply with the requirements for a Certificate of Airworthiness.

**'Rated thrust'** means for engine emissions purposes, the maximum take-off thrust approved by the certificating authority for use under normal operating conditions at ISA sea level static conditions, and without the use of water injection. Thrust is expressed in kilonewtons.

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

**'Re-certification'** means certification of an aircraft with or without a revision to its certification noise levels, to a Standard different to that to which it was originally certificated.

**'Reference pressure ratio'** means the ratio of the mean total pressure at the last compressor discharge plane of the compressor to the mean total pressure at the compressor entry plane when the engine is developing take-off thrust rating in ISA sea level static conditions.

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**'Remotely Piloted Aircraft (RPA)'** An unmanned aircraft which is piloted from a remote pilot station.

**'Rendering (a Certificate of Airworthiness) valid'** means the action taken by a CAA Nepal, as an alternative to issuing its own Certificate of Airworthiness, in accepting a Certificate of Airworthiness issued by any other Contracting State as the equivalent of its own Certificate of Airworthiness.

**'Rendering (a licence) valid'** means the action taken by a CAA Nepal, as an alternative, to issue its own licence, in accepting a licence issued by any other contracting state as the equivalent of its own licence.

**'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 airworthiness requirements used for the issuance of type certificate for the respective aircraft type, after it has been damaged or subjected to a wear.

**'Rotorcraft'** means a power-driven heavier-than-air aircraft supported in flight by the reactions of the air on one or more rotors.

**'Safety Management System (SMS)'** means a systematic approach to managing safety, including the necessary organizational structure, accountabilities, policies and procedures.

**'Satisfactory evidence'** A set of documents or activities that a CAA Nepal accepts as sufficient to show compliance with an airworthiness requirement. **'Schedule Maintenance'** means any maintenance performed at predetermine intervals as required pursuant to these Requirements, an approved inspection plan or an airworthiness directive.

**'Self-sustaining powered sailplane'** A powered aeroplane with available engine power which allows it to maintain level flight but not to take off under its own power. **'Serviceable'** in respect of an aeronautical product, means in a fit and safe condition for flight.

**'Sign a maintenance release (to)'** means to certify that maintenance work has been completed satisfactory in accordance with the applicable standards of airworthiness, by issuing the maintenance release.

**'Small Aeroplane'** means an aeroplane having a maximum allowable take off weight of 5700 kg (12,566 lb.) or less,

**'Smoke'** means the carbonaceous materials in exhaust emissions which obscure the transmission of light.

**'Smoke number'** means the dimensionless term quantifying smoke emissions.

**'Standard atmosphere'** means an atmosphere defined as follows:

Note 1— the air is a perfect dry gas;

Note 2— the physical constants are:

— Sea level mean molar mass:  $M_0 = 28.964\ 420 \times 10^{-3} \text{ kg mol}^{-1}$

— Sea level atmospheric pressure:  $P_0 = 1013.250 \text{ hPa}$

Sea level temperature:

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$t_0 = 15^\circ\text{C}$ $T_0 = 288.15\text{ K}$ — Sea level atmospheric density: $\rho_0 = 1.225\ 0\ \text{kg m}^{-3}$ — Temperature of the ice point: $T_i = 273.15\text{ K}$ — Universal gas constant: $R^* = 8.314\ 32\ \text{JK}^{-1}\text{mol}^{-1}$		
Note 3— the temperature gradients are:		
Geopotential altitude (Km)		Temperature gradient (km)
From	To	(Kelvin per standard geopotential kilometer)
-5.0	11.0	-6.5
11.0	20.0	0.0
20.0	32.0	+1.0
32.0	47.0	+2.8
47.0	51.0	0.0
51.0	71.0	-2.8
71.0	80.0	-2.0
Note 4 — The standard geopotential metre has the value $9.80665\ \text{m}^2\ \text{s}^{-2}$ .  Note 5— See Doc 7488 for the relationship between the variables and for tables giving the corresponding values of temperature, pressure, density and geopotential.  Note 6— Doc 7488 also gives the specific weight, dynamic viscosity, kinematic viscosity and speed of sound		

**'State of Design'** The State having jurisdiction over the organization responsible for the type design.

**'State of Manufacture'** The state having jurisdiction over the organization responsible for the final assembly of the aircraft.

**'State of Registry'** The State on whose register the aircraft is entered.

**'State safety program (SSP)'** means an integrated set of regulations and activities aimed at improving safety.

**'Subsonic aeroplane'** means an aeroplane incapable of sustaining level flight at speeds exceeding flight Mach number of 1. **'Take-off phase'** means the operating phase defined by the time during which the engine is operated at the rated thrust. **'Take-off surface'** That part of the surface of an aerodrome which the aerodrome authority has declared available for the normal ground or water run of aircraft taking off in a particular direction.

**'Taxi/ground idle'** means the operating phases involving taxi and idle between the initial starting of the propulsion engine(s) and the initiation of the take-roll and between the time of runway turn-off and final shutdown of all propulsion engine(s).

**'Technical Record'** means a chronological record of the particulars relating to the maintenance of an aircraft or any aeronautical product installed on the aircraft.

**'The Act'** means the Civil Aviation Act 1996 (2053 B.S.) and any subsequent amendment.

**'The Rules'** mean the Civil Aviation Rules 2002 (2058 B.S.) and any subsequent amendments.

**'Tilt rotor'** means a powered-lift capable of vertical take-off, vertical landing, a sustained low-speed flight, which depends principally on engine-driven rotors mounted on tiltable nacelles for the lift during these flight regimes and on non-rotating aerofoil(s) for lift during high-speed flight

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**'Time in Service'** means the time in hours and minutes from the moment an aircraft leaves the ground on every flight until it touches the ground at the end of that flight.

**'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.

**'Type Design'** means the set of data and information necessary to define an aircraft, engine or propeller type for the purpose of airworthiness determination which includes:

- (a) the drawings and specifications and a listing of those drawings and specifications, necessary to define the configuration and the design features of the product in conformity with the basis of approval applicable to the product,
- (b) information on dimensions, materials and manufacturing processes necessary to define the structural strength of the product,
- (c) any other data necessary to allow, by comparison, the determination of the Airworthiness,
- (d) where applicable, environmental characteristics of later products of the same type or model.

**'Ultimate load'** means the limit load multiplied by the appropriate factor of safety.

**'Unburned hydrocarbons'** means the total of hydrocarbons compounds of all classes and molecular weights contained in a gas sample, calculated as if they were in the form of methane.

**'USA'** stands for United States of America.

**'V.F.R.'** stands for Visual Flight Rules.

**'Validation'** means the acceptance of certificate/approval or any other document issued by airworthiness authority of contracting state.

**Civil Aviation Authority of Nepal.**