CIVIL AVIATION AUTHORITY of NEPAL

# FLIGHT OPERATIONS REQUIREMENTS

# (HELICOPTERS)

SIXTH EDITION - 2021

Adoption of the Standards of the Annexes to the Chicago Convention of ICAO under Article 81 and approved for publication by the Director General, Civil Aviation Authority of Nepal, under Article 82 of the Civil Aviation Rules, 2058 BS.

Flight Operations Division, Flight Safety Standards Department, CAAN.


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# FOREWORD

This sixth edition of the Flight Operations Requirements-Helicopter, known hereafter as the FOR-H, is hereby issued by the Director General of Civil Aviation Authority Nepal in pursuant to Rule 82 of the Civil Aviation Regulations 2058 Bikram Samvat (2002 AD).

These Requirements complement and amplify the CARs 2058 under the authority of Civil Aviation Authority Act 2053 B.S. (1996 AD) and is applicable to AOC holders involved in commercial operations of helicopters under the Nepalese Civil Aviation registration.

This sixth edition includes material from the previous editions while being updated to include the latest edition and amendments of ICAO Annex 6, Part III.

It shall be the obligation of the AOC holder to adhere to and maintain the standards of this FOR-H to ensure compliance with national aviation regulations and maintain continued safety.

The FOR-H has been prepared to maintain compliance with ICAO Annex 6, Part III as far as practicable and will be amended as and when necessary.

This sixth edition of the FOR-H shall be applicable from the 01st of February 2021.

R. Pokhrel

**Rajan Pokhrel**
Director General
Civil Aviation Authority of Nepal
21st January 2021

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# ABBREVIATIONS AND SYMBOLS

*(used in this FOR-H)*

## ABBREVIATIONS

**ACAS** Airborne collision avoidance systems
**ADRS** Aircraft data recording system
**ADS-C** Automatic dependent surveillance — contract
**AFCS** Automatic flight control system
**AIG** Accident investigation and prevention
**AIP** Aeronautical Information Publications
**AIR** Airborne image recorder
**AIRS** Airborne image recording system
**AOC** Aeronautical operational control
**AOC** Air operator certificate
**APCH** Approach
**AR** Authorization required
**ATC** Air traffic control
**ATM** Air traffic management
**ATN** Aeronautical telecommunication network
**ATS** Air traffic services

**CAAN** Civil Aviation Authority of Nepal
**CARS** Cockpit audio recording system
**CAT I** Category I
**CAT II** Category II
**CAT III** Category III
**CAT III** Category III
**CDL** Configuration deviation list
**CFIT** Controlled flight into terrain
**cm** Centimetre
**CPDLC** Controller-pilot data link communications
**CVR** Cockpit voice recorder
**CVS** Combined vision system

**D** Maximum dimension of helicopter
**DA** Decision altitude
**DA/H** Decision altitude/height
**D-FIS** Data link-flight information services
**DG, CAAN** Director General, Civil Aviation Authority of Nepal
**DH** Decision height
**Distance DR** The horizontal distance that the helicopter has travelled from the end of the take-off distance available
**DLR** Data link recorder
**DLRS** Data link recording system
**DME** Distance measuring equipment

**DPBL** Defined point before landing
**DPATO** Defined point after take-off
**DR** Distance travelled (helicopter)

**ECAM** Electronic centralized aircraft monitor
**EFB** Electronic flight bag
**EFIS** Electronic flight instrument system
**EGT** Exhaust gas temperature
**EICAS** Engine indication and crew alerting system
**ELT** Emergency locator transmitter
**ELT(AD)** Automatic deployable ELT
**ELT(AF)** Automatic fixed ELT
**ELT(AP)** Automatic portable ELT
**ELT(S)** Survival ELT
**EUROCAE** European Organization for Civil Aviation Equipment
**EPR** Engine pressure ratio
**EVS** Enhanced vision system

**FANS** Future air navigation system
**FATO** Final approach and take-off area
**FDAU** Flight data acquisition unit
**FDR** Flight data recorder
**FM** Frequency modulation
**FOR** Flight Operations Requirements
**FSSD** Flight Safety Standards Department
**ft** Foot

**g** Normal acceleration

**hPa** Hectopascal
**HUD** Head-up display
**HUMS** Health and usage monitor system
**HFM** Helicopter flight manual

**IFR** Instrument flight rules
**ILS** Instrument landing system
**IMC** Instrument meteorological conditions
**in Hg** Inch of mercury

**kg** Kilogram
**km** Kilometer
**kN** Kilonewton
**kt** Knot

**LDAH** Landing distance available (helicopter)
**LDP** Landing decision point
**LDRH** Landing distance required (helicopter)
**LED** Light emitting diode

| | |
|---|---|
| **m** | Metre |
| **mb** | Millibar |
| **MDA** | Minimum descent altitude |
| **MDA/H** | Minimum descent altitude/height |
| **MDH** | Minimum descent height |
| **MEL** | Minimum equipment list |
| **MHz** | Megahertz |
| **MLS** | Microwave landing system |
| **MMEL** | Master minimum equipment list |
| **MOPS** | Minimum operational performance specification |
| **NAV** | Navigation |
| **$N_1$** | Low pressure compressor speed (two-stage compressor); fan speed (three-stage compressor) |
| **NM** | Nautical mile |
| **NVIS** | Night vision imaging systems |
| **OCA** | Obstacle clearance altitude |
| **OCA/H** | Obstacle clearance altitude/height |
| **OCH** | Obstacle clearance height |
| **PANS** | Procedures for Air Navigation Services |
| **PBC** | Performance-based communication |
| **PBN** | Performance-based navigation |
| **PBS** | Performance-based surveillance |
| **PELR** | Personnel Licensing Requirements |
| **PNR** | Point of no return |
| **psi** | Pound per square inch |
| **R** | Rotor radius of helicopter |
| **RCP** | Required communication performance |
| **RNAV** | Area navigation |
| **RNP** | Required navigation performance |
| **RSP** | Required surveillance performance |
| **RTCA** | Radio Technical Commission for Aeronautics |
| **RTODR** | Rejected take-off distance required (helicopter) |
| **RVR** | Runway visual range |
| **SI** | International System of Units |
| **SICASP** | Secondary Surveillance Radar Improvements and Collision Avoidance Systems Panel |
| **SOP** | Standard operating procedures |
| **SVS** | Synthetic vision systems |
| **$T_4$** | Engine exhaust gas temperature |
| **TDP** | Take-off decision point |
| **TIT** | Turbine inlet temperature |
| **TLOF** | Touchdown and lift-off area |
| **TODAH** | Take-off distance available (helicopter) |
| **TODRH** | Take-off distance required (helicopter) |

**UTC** Coordinated universal time

**VFR** Visual flight rules
**VMC** Visual meteorological conditions
**VNAV** Vertical navigation
**VTOSS** Take-off safety speed.
**Vy** Best rate of climb speed

**WXR** Weather

## SYMBOLS

°C Degrees Celsius
**%** Per cent

# FLIGHT OPERATIONS REQUIREMENTS HELICOPTERS

## SECTION I

## CHAPTER 1.

# DEFINITIONS

When the following terms are used in the Flight Operations Requirements - Helicopters for commercial operations with helicopters, they have the following meanings:

***Aerial work.*** 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.

***Aerodrome.*** A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

***Agreement summary.*** When an aircraft is operating under an Article 83 bis agreement between the State of Registry and another State, the agreement summary is a document transmitted with the Article 83 bis Agreement registered with the ICAO Council that identifies succinctly and clearly which functions and duties are transferred by the State of Registry to that other State.

*Note.— The other State in the above definition refers to either the State of the Operator for commercial air transport operations or, for general aviation operations, to the State of the principal location of a general aviation operator.*

***Aircraft.*** 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 Operating Manual.*** A manual, acceptable to the DG, CAAN, containing normal, abnormal and emergency procedures, checklists, limitations, performance information, details of the aircraft systems and other material relevant to the operation of the aircraft.

*Note. — The aircraft operating manual is part of the operations manual.*

***Air Operator Certificate (AOC).*** A certificate authorizing an operator to carry out specified commercial air transport operations.

***Air traffic service (ATS).*** A generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service).

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

***Alternate heliport.*** A heliport to which a helicopter may proceed when it becomes either impossible or inadvisable to proceed to or to land at the heliport of intended landing where the necessary services and facilities are available, where aircraft performance requirements can be met and which is operational at the expected time of use. Alternate heliports include the following:

*Take-off alternate*. An alternate heliport at which a helicopter would be able to land should this become necessary shortly after take-off and it is not possible to use the heliport of departure.

*En-route alternate*. An alternate heliport at which a helicopter would be able to land in the event that a diversion becomes necessary while en route.

*Destination alternate*. An alternate heliport at which a helicopter would be able to land should it become either impossible or inadvisable to land at the heliport of intended landing.

*Note. —The heliport from which a flight departs may be an en-route or a destination alternate heliport for that flight.*

***Approach and landing phase — helicopters.*** That part of the flight from 300 m (1 000 ft) above the elevation of the FATO, if the flight is planned to exceed this height, or from the commencement of the descent in the other cases, to landing or to the balked landing point.

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

***Area navigation (RNAV).*** A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

*Note. — Area navigation includes performance-based navigation as well as other operations that do not meet the definition of performance-based navigation.*

***Cabin crew member.*** A crew member who performs, in the interest of safety of passengers, duties assigned by the operator or the pilot-in-command of the aircraft, but who shall not act as a flight crew member.

***Combined vision system (CVS).*** A system to display images from a combination of an enhanced vision system (EVS) and a synthetic vision system (SVS).

***Commercial air transport operation.*** An aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.

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

***Congested area.*** In relation to a city, town or settlement, any area which is substantially used for residential, commercial or recreational purposes.

***Congested hostile environment.*** A hostile environment within a congested area.

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

***Continuing Airworthiness Records.*** Records which are related to the continuing airworthiness status of an aircraft, engine, rotor or associated part.

***Continuous descent final approach (CDFA).*** A technique, consistent with stabilized approach procedures, for flying the final approach segment of a non-precision instrument approach procedure as a continuous descent, without level-off, from an altitude/height at or above the final approach fix altitude/height to a point approximately 15 m (50 ft) above the landing runway threshold or the point where the flare manoeuvre should begin for the type of aircraft flown.

***Crew member.*** A person assigned by an operator to duty on an aircraft during a flight duty period.

***Dangerous goods.*** Articles or substances which are capable of posing a risk to health, safety, property or the environment and which are shown in the list of dangerous goods in the Technical Instructions or which are classified according to those Instructions.

*Note. — Dangerous goods are classified in CAAN Dangerous Goods Handling Requirements.*

***Decision altitude (DA)*** *or* ***decision height (DH).*** A specified altitude or height in a three-dimensional (3D) instrument approach operation at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.

*Note 1. — Decision altitude (DA) is referenced to mean sea level and decision height (DH) is referenced to the threshold elevation.*

*Note 2. — The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In Category III operations with a decision height the required visual reference is that specified for the particular procedure and operation.*

*Note 3. — For convenience where both expressions are used they may be written in the form "decision altitude/height "and abbreviated "DA/H".*

***Defined point after take-off (DPATO).*** The point, within the take-off and initial climb phase, before which the helicopter's ability to continue the flight safely, with one engine inoperative, is not assured and a forced landing may be required.

*Note. — Defined points apply to helicopters operating in performance Class 2 only.*

***Defined point before landing (DPBL).*** The point, within the approach and landing phase, after which the helicopter's ability to continue the flight safely, with one engine inoperative, is not assured and a forced landing may be required.

***Note****. — Defined points apply to helicopters operating in performance Class 2 only.*

***Duty*** Any task that flight or cabin crew members are required by the operator to perform, including, for example, flight duty, administrative work, training, positioning and standby when it is likely to induce fatigue.

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

***Electronic flight bag (EFB).*** An electronic information system, comprised of equipment and applications for flight crew, which allows for the storing, updating, displaying and processing of EFB functions to support flight operations or duties.

***Elevated heliport.*** A heliport located on a raised structure on land.

***Emergency locator transmitter (ELT).*** A generic term describing equipment which broadcast distinctive signals on designated frequencies and, depending on application, may be automatically activated by impact or be manually activated. An ELT may be any of the following:

*Automatic fixed ELT (ELT(AF)).* An automatically activated ELT which is permanently attached to an aircraft.

*Automatic portable ELT (ELT(AP)).* An automatically activated ELT which is rigidly attached to an aircraft but readily removable from the aircraft.

*Automatic deployable ELT (ELT(AD)).* An ELT which is rigidly attached to an aircraft and which is automatically deployed and activated by impact, and, in some cases, also by hydrostatic sensors. Manual deployment is also provided.

*Survival ELT (ELT(S)).* An ELT which is removable from an aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by survivors.

***Engine***. 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).

***Enhanced vision system (EVS).*** A system to display electronic real-time images of the external scene achieved through the use of image sensors.

*Note. — EVS does not include night vision imaging systems (NVIS).*

***En-route phase.*** That part of the flight from the end of the take-off and initial climb phase to the commencement of the approach and landing phase.

*Note. — Where adequate obstacle clearance cannot be guaranteed visually, flights must be planned to ensure that obstacles can be cleared by an appropriate margin. In the event of failure of the critical engine, operators may need to adopt alternative procedures.*

***Fatigue.*** A physiological state of reduced mental or physical performance capability resulting from sleep loss, extended wakefulness, circadian phase, and/or workload (mental and/or physical activity) that can impair a person's alertness and ability to adequately perform safety-related operational duties.

***Fatigue risk management system (FRMS).*** A data-driven means of continuously monitoring and managing fatigue-related safety risks, based upon scientific principles and knowledge as well as operational experience that aims to ensure relevant personnel are performing at adequate levels of alertness.

***Final approach and take-off area (FATO).*** 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 helicopters operating in performance Class 1, the defined area includes the rejected take-off area available.

***Final approach segment (FAS)***. That segment of an instrument approach procedure in which alignment and descent for landing are accomplished.

***Flight crew member.*** A licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period.

***Flight duty period.*** A period which commences when a flight or cabin crew member is required to report for duty that includes a flight or a series of flights and which finishes when the aircraft finally comes to rest and the engines are shut down at the end of the last flight on which he/she is a crew member.

***Flight manual.*** A manual, associated with the certificate of airworthiness, containing limitations within which the aircraft is to be considered airworthy, and instructions and information necessary to the flight crew members for the safe operation of the aircraft.

***Flight operations officer/flight dispatcher.*** A person designated by the operator to engage in the control and supervision of flight operations, whether licensed or not, suitably qualified in accordance with ICAO Annex 1, who supports, briefs and/or assists the pilot-in-command in the safe conduct of the flight.

***Flight plan.*** Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

***Flight recorder.*** Any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation.

***Automatic deployable flight recorder (ADFR).*** A combination flight recorder installed on the aircraft which is capable of automatically deploying from the aircraft.

***Flight safety documents system.*** A set of interrelated documentation established by the operator, compiling and organizing information necessary for flight and ground operations, and comprising, as a minimum, the operations manual and the operator's maintenance control manual.

***Flight simulation training device.*** Any one of the following three types of apparatus in which flight conditions are simulated on the ground:

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

*A flight procedures trainer*, which provides a realistic flight deck environment, and which simulates instrument responses, simple control functions of mechanical, electrical, electronic, etc. aircraft systems, and the performance and flight characteristics of aircraft of a particular class;

*A basic instrument flight trainer*, which is equipped with appropriate instruments, and which simulates the flight deck environment of an aircraft in flight in instrument flight conditions.

***Flight time — helicopters.*** 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.

***General aviation operation.*** An aircraft operation other than a commercial air transport operation or an aerial work operation.

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

***Head-up display (HUD).*** A display system that presents flight information into the pilot's forward external field of view.

***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.

*Note. — Some States use the term "rotorcraft" as an alternative to "helicopter".*

***Helideck.*** A heliport located on a floating or fixed offshore structure.

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

*Note 1. — Throughout this Part, when the term "heliport" is used, it is intended that the term also applies to aerodromes primarily meant for the use of aeroplanes.*

*Note 2. — Helicopters may be operated to and from areas other than heliports.*

***Heliport operating minima.*** The limits of usability of a heliport for:

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

b) landing in 2D instrument approach operations, expressed in terms of visibility and/or runway visual range, minimum descent altitude/height (MDA/H) and, if necessary, cloud conditions; and

c) landing in 3D instrument approach operations, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H) as appropriate to the type and/or category of the operation.

***Hostile environment.*** An environment in which:

a) a safe forced landing cannot be accomplished because the surface and surrounding environment are inadequate; or

b) the helicopter occupants cannot be adequately protected from the elements; or

c) search and rescue response/capability is not provided consistent with anticipated exposure; or

d) there is an unacceptable risk of endangering persons or property on the ground.

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

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

***Instrument approach operations.*** An approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for executing instrument approach operations:

a) a two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and

b) a three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance.

*Note. — Lateral and vertical navigation guidance refers to the guidance provided either by:*

*a) a ground-based radio navigation aid; or*

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

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

*Non-precision approach (NPA) procedure.* An instrument approach procedure designed for 2D instrument approach operations Type A.

*Note. — Non-precision approach procedures may be flown using a continuous descent final approach (CDFA) technique. CDFAs with advisory VNAV guidance calculated by on-board equipment are considered 3D instrument approach operations. CDFAs with manual calculation of the required rate of descent are considered 2D instrument approach operations. For more information on CDFAs, refer to PANS-OPS (Doc 8168), Volume I, Part I, Section 5.*

*Approach procedure with vertical guidance (APV).* A performance-based navigation (PBN) instrument approach procedure designed for 3D instrument approach operations Type A.

*Precision approach (PA) procedure.* An instrument approach procedure based on navigation systems (ILS, MLS, GLS and SBAS CAT I) designed for 3D instrument approach operations Type A or B.

*Note. — Refer to Section II, Chapter 2, 2.2.8.3, for instrument approach operation types.*

***Instrument meteorological conditions (IMC).*** Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling as defined in Civil Aviation Requirements for Rules of Air-2 (CAR-2), less than the minima specified for visual meteorological conditions.

*Note. — The specified minima for visual meteorological conditions are contained in Chapter 4 VISUAL FLIGHT RULES of CAR-2.*

***Integrated survival suit.*** A survival suit which meets the combined requirements of the survival suit and life jacket.

***Landing decision point (LDP).*** The point used in determining landing performance from which, an engine failure occurring at this point, the landing may be safely continued or a balked landing initiated.

*Note. — LDP applies only to helicopters operating in performance Class 1.*

***Low-visibility operations (LVO).*** Approach operations in RVRs less than 550 m and/or with a DH less than 60 m (200 ft) or take-off operations in RVRs less than 400 m.

***Maintenance.*** The performance of tasks on an aircraft, engine, propeller or associated part required to ensure the continuing airworthiness of an aircraft, engine, propeller or associated part including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair**.**

*Note*- applicable as of 05 November 2020.

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

***Maintenance release***. A document which contains a certification confirming that the maintenance work to which it relates has been completed in a satisfactory manner in accordance with appropriate airworthiness requirements. *Also known as Certificate of Release to Service.*

***Master minimum equipment list (MMEL).*** 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.

***Maximum mass.*** Maximum certificated take-off mass.

***Minimum descent altitude (MDA)*** or ***minimum descent height (MDH).*** A specified altitude or height in a 2D instrument approach operation or circling approach operation below which descent must not be made without the required visual reference.

*Note 1. — Minimum descent altitude (MDA) is referenced to mean sea level and minimum descent height (MDH) is referenced to the aerodrome elevation or to the threshold elevation if that is more than 2 m (7 ft.) below the aerodrome elevation. A minimum descent height for a circling approach is referenced to the aerodrome elevation.*

*Note 2. — The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of*

*the aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach the required visual reference is the runway environment.*

*Note 3. — For convenience when both expressions are used they may be written in the form "minimum descent altitude/height" and abbreviated "MDA/H".*

***Minimum equipment list (MEL).*** 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.

***Modification.*** A change to the type design of an aircraft, engine or propeller.

*Note. — A modification may also include the embodiment of the modification which is a maintenance task subject to a maintenance release.*

***Navigation specification.*** A set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications:

*Required navigation performance (RNP) specification.* A navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP, e.g. RNP 4, RNP APCH.

*Area navigation (RNAV) specification.* A navigation specification based on area navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV, e.g. RNAV 5, RNAV 1.

*Note 1. — The* Performance-based Navigation (PBN) Manual *(Doc 9613), Volume II, contains detailed guidance on navigation specifications.*

*Note 2. — The term RNP, previously defined as "a statement of the navigation performance necessary for operation within a defined airspace", has been removed from ICAO Annex 6 Part III as the concept of RNP has been overtaken by the concept of PBN. The term RNP in Annex 6 Part III is now solely used in the context of navigation specifications that require performance monitoring and alerting, e.g. RNP 4 refers to the aircraft and operating requirements, including a 4 NM lateral performance with on-board performance monitoring and alerting that are detailed in Doc 9613.*

***Night.*** 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 the appropriate authority.

*Note. — Civil twilight ends in the evening when the centre of the sun's disc is 6 degrees below the horizon and begins in the morning when the centre of the sun's disc is 6 degrees below the horizon.*

***Non-congested hostile environment.*** A hostile environment outside a congested area.

***Non-hostile environment.*** An environment in which:

a) a safe forced landing can be accomplished because the surface and surrounding environment are adequate;
b) the helicopter occupants can be adequately protected from the elements;
c) search and rescue response/capability is provided consistent with anticipated exposure; and
d) the assessed risk of endangering persons or property on the ground is acceptable.

*Note. — Those parts of a congested area satisfying the above requirements are considered non-hostile.*

***Obstacle clearance altitude (OCA)*** or ***obstacle clearance height (OCH).*** The lowest altitude or the lowest height above the elevation of the relevant runway threshold or the aerodrome elevation as applicable, used in establishing compliance with appropriate obstacle clearance criteria.

*Note 1.— Obstacle clearance altitude is referenced to mean sea level and obstacle clearance height is referenced to the threshold elevation or in the case of non-precision approaches to the aerodrome elevation or the threshold elevation if that is more than 2 m (7 ft) below the aerodrome elevation. An obstacle clearance height for a circling approach is referenced to the aerodrome elevation.*

*Note 2.— For convenience when both expressions are used they may be written in the form "obstacle clearance altitude/height" and abbreviated "OCA/H".*

***Offshore operations.*** Operations which routinely have a substantial proportion of the flight conducted over sea areas to or from offshore locations. Such operations include, but are not limited to, support of offshore oil, gas and mineral exploitation and sea-pilot transfer.

***Operation.*** An activity or group of activities which are subject to the same or similar hazards and which require a set of equipment to be specified, or the achievement and maintenance of a set of pilot competencies, to eliminate or mitigate the risk of such hazards.

*Note. — Such activities could include, but would not be limited to, offshore operations, heli-hoist operations or emergency medical service.*

***Operational control.*** The exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of the safety of the aircraft and the regularity and efficiency of the flight.

***Operational flight plan.*** The operator's plan for the safe conduct of the flight based on considerations of helicopter performance, other operating limitations and relevant expected conditions on the route to be followed and at the heliports concerned.

***Operations in performance Class 1.*** Operations with performance such that, in the event of a critical engine failure, performance is available to enable the helicopter to safely continue the flight to an appropriate landing area, unless the failure occurs prior to reaching the take-off decision point (TDP) or after passing the landing decision point (LDP), in which cases the helicopter must be able to land within the rejected take-off or landing area.

***Operations in performance Class 2.*** Operations with performance such that, in the event of critical engine failure, performance is available to enable the helicopter to safely continue the flight to an appropriate landing area, except when the failure occurs early during the take-off manoeuvre or late in the landing manoeuvre, in which cases a forced landing may be required.

***Operations in performance Class 3.*** Operations with performance such that, in the event of an engine failure at any time during the flight, a forced landing will be required.

***Operations manual.*** A manual containing procedures, instructions and guidance for use by operational personnel in the execution of their duties.

***Operations specifications.*** The authorizations, conditions and limitations associated with the air operator certificate and subject to the conditions in the operations manual.

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

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

***Performance-based communication (PBC).*** Communication based on performance specifications applied to the provision of air traffic services.

*Note. — An RCP specification includes communication performance requirements that are allocated to system components in terms of the communication to be provided and associated transaction time, continuity, availability, integrity, safety and functionality needed for the proposed operation in the context of a particular airspace concept.*

***Performance-based navigation (PBN).*** Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

*Note. — Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, availability and functionality needed for the proposed operation in the context of a particular airspace concept.*

***Performance-based surveillance (PBS).*** Surveillance based on performance specifications applied to the provision of air traffic services.

*Note. — An RSP specification includes surveillance performance requirements that are allocated to system components in terms of the surveillance to be provided and associated data delivery time, continuity, availability, integrity, accuracy of the surveillance data, safety and functionality needed for the proposed operation in the context of a particular airspace concept.*

***Pilot-in-command.*** The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.

***Point of no return.*** The last possible geographic point at which an aircraft can proceed to the destination aerodrome as well as to an available en-route alternate aerodrome for a given flight.

***Psychoactive substances.*** Alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded.

***Repair.*** The restoration of an aircraft, engine or associated part to an airworthy condition in accordance with the appropriate airworthiness requirements after it has been damaged or subjected to wear.

*Note. Applicable as of 05 November 2020*

***Required communication performance (RCP) Specification.*** A set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based communication.

***Required surveillance performance (RSP) specification***. A set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based surveillance.

***Rest period.*** A continuous and defined period of time, subsequent to and/or prior to duty, during which flight or cabin crew members are free of all duties.

***Runway visual range (RVR).*** The range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its center line.

***Safe forced landing.*** Unavoidable landing or ditching with a reasonable expectancy of no injuries to persons in the aircraft or on the surface.

***Safety management system (SMS).*** A systematic approach to managing safety, including the necessary organizational structures, accountability, responsibilities, policies and procedures.

***Series of flights.*** Series of flights are consecutive flights that:

a) begin and end within a period of 24 hours; and
b) are all conducted by the same pilot-in-command.

***Specific approval.*** A specific approval is an approval which is documented in the operations specifications for commercial air transport operations or in the list of specific approvals for non-commercial operations.

*Note.— The terms authorization, specific approval, approval and acceptance are further described in Attachment D.*

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

***State of the Aerodrome.*** The State in whose territory the aerodrome is located.

*Note. — State of the Aerodrome includes heliports and landing locations.*

***State of the Operator.*** The State in which the operator's principal place of business is located or, if there is no such place of business, the operator's permanent residence.

***State safety programme.*** An integrated set of regulations and activities aimed at improving safety.

***Synthetic vision system (SVS).*** A system to display data-derived synthetic images of the external scene from the perspective of the flight deck.

***Take-off and initial climb phase.*** That part of the flight from the start of take-off to 300 m (1 000 ft) above the elevation of the FATO, if the flight is planned to exceed this height, or to the end of the climb in the other cases.

***Take-off decision point (TDP).*** The point used in determining take-off performance from which, an engine failure occurring at this point, either a rejected take-off may be made or a take-off safely continued.

*Note. — TDP applies only to helicopters operating in performance Class 1.*

***Visual meteorological conditions (VMC).*** Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling as defined in CAR-2, equal to or better than specified minima.

*Note. — The specified minima are contained in Chapter 4 of CAAN CAR-2.*

***$V_{TOSS}$.*** The minimum speed at which climb shall be achieved with the critical engine inoperative, the remaining engines operating within approved operating limits.

*Note. — The speed referred to above may be measured by instrument indications or achieved by a procedure specified in the flight manual.*

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*Note. — TDP applies only to helicopters operating in performance Class 1.*

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*Note. — The specified minima are contained in Chapter 4 of CAAN CAR-2.*

***VTOSS.*** The minimum speed at which climb shall be achieved with the critical engine inoperative, the remaining engines operating within approved operating limits.

*Note. — The speed referred to above may be measured by instrument indications or achieved by a procedure specified in the flight manual.*

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# CHAPTER 2.

# APPLICABILITY

2.1 The Requirements contained in Flight Operations Requirements - Helicopters, shall be applicable to all helicopters engaged in commercial air transport operations, except that these Requirements are not applicable to helicopters engaged in aerial work.

*Note 1. — Requirements applicable to the operation of aeroplanes by operators authorized to conduct international commercial air transport operations are to be found in Flight Operations Requirements - Aeroplanes.*

*Note 2. — Requirements applicable to international general aviation operations with aeroplanes and helicopters are to be found in Flight Operations Requirements – General Aviation.*

2.2 *Appendices* contain comprising material grouped separately for convenience but form part of the Flight Operations Requirements.

2.3 *Notes* are included in the text, where appropriate, to give factual information or references bearing on the Requirements in question but not constitute a part of these Requirements.

*2.*4 *Recommendation:* Any specification for physical characteristics, configuration, materiel, performance, personnel or procedure, the uniform application of which is recognized as *desirable* in the interest of safety, regularity or efficiency of international air navigation.

2.5 *Attachments* comprising material supplementary to the requirements or included as a guide to their application.

# SECTION II

## INTERNATIONAL COMMERCIAL AIR TRANSPORT (REQUIREMENTS APPLICABLE TO HOLDERS OF AIR OPERATOR CERTIFICATE)

# CHAPTER 1

# GENERAL

## 1.1 COMPLIANCE WITH LAWS, REGULATIONS AND PROCEDURES

1.1.1 Operators shall ensure that their employees when abroad know that they must comply with the laws, regulations and procedures of the States in which their operations are conducted.

1.1.2 Operators shall ensure that all pilots are familiar with the laws, regulations and procedures, pertinent to the performance of their duties, prescribed for the areas to be traversed, the heliports to be used and the air navigation facilities relating thereto. The operator shall ensure that other members of the flight crew are familiar with such of these regulations and procedures as are pertinent to the performance of their respective duties in the operation of the helicopter.

*Note. — Information for pilots and flight operations personnel on flight procedure parameters and operational procedures is contained in PANS-OPS (Doc 8168), Volume I. Criteria for the construction of visual and instrument flight procedures are contained in PANS-OPS (Doc 8168), Volume II. Obstacle clearance criteria and procedures used in certain States may differ from PANS-OPS, and knowledge of these differences is important for safety reasons.*

1.1.3 The operator or a designated representative shall have responsibility for operational control.

1.1.4 Responsibility for operational control shall be delegated only to the pilot-in-command and to a flight operations officer/flight dispatcher if an operator's approved method of control and supervision of flight operations requires the use of flight operations officer/flight dispatcher personnel.

*Note. — Guidance on the operational control organization and the role of the flight operations officer/flight dispatcher is contained in the* Manual of Procedures for Operations Inspection, Certification and Continued Surveillance *(Doc 8335). Detailed guidance on the authorization, duties and responsibilities of the flight operations officer/flight dispatcher is contained in the manual* Preparation of an Operations Manual *(Doc 9376). The requirements for age, skill, knowledge and experience for licensed flight operations officers/flight dispatchers are contained in PELR.*

1.1.5 If an emergency situation which endangers the safety of the helicopter or persons becomes known first to the flight operations officer/flight dispatcher, action by that person in accordance with 2.6.1 shall include, where necessary, notification to the appropriate authorities of the nature of the situation without delay, and requests for assistance if required.

1.1.6 If an emergency situation which endangers the safety of the helicopter or persons necessitates the taking of action which involves a violation of local regulations or procedures, the pilot-in-

command shall notify the appropriate local authority without delay. If required by the State in which the incident occurs, the pilot-in-command shall submit a report on any such violation to the appropriate authority of such State; in that event, the pilot-in-command shall also submit a copy of it to the DG, CAAN. Such reports shall be submitted as soon as possible and normally within ten days.

1.1.7 Operators shall ensure that pilots-in-command have available on board the helicopter all the essential information concerning the search and rescue services in the area over which the helicopter will be flown.

*Note. — This information may be made available to the pilot by means of the operations manual or such other means as is considered appropriate.*

1.1.8 Operators shall ensure that flight crew members demonstrate the ability to speak and understand the language used for radiotelephony communications as specified in PELR.

**1.2 Compliance by a foreign operator with laws, regulations and procedures of CAAN**

1.2.1 When the CAAN identifies a case of non-compliance or suspected non-compliance by a foreign operator with laws, regulations and procedures applicable within Nepalese territory, or a similar serious safety issue with that operator, CAAN shall immediately notify the operator and, if the issue warrants it, the State of the Operator. Where the State of the Operator and the State of Registry are different, such notification shall also be made to the State of Registry, if the issue falls within the responsibilities of that State and warrants a notification.

1.2.2 In the case of notification to States as specified in 1.2.1, if the issue and its resolution warrant it, the DG, CAAN shall engage in consultations with the State of the Operator and the State of Registry, as applicable, concerning the safety standards maintained by the operator.

*Note. — The* Manual of Procedures for Operations Inspection, Certification and Continued Surveillance *(Doc 8335) provides guidance on the surveillance of operations by foreign operators. The manual also contains guidance on the consultations and related activities, as specified in 1.2.2, including the ICAO model clause on aviation safety, which, if included in a bilateral or multilateral agreement, provides for consultations among States, when safety issues are identified by any of the parties to a bilateral or multilateral agreement on air services.*

**1.3 Safety management**

*Note. — CAR 19 includes safety management provisions for air operators. Further guidance is contained in the Safety Management Manual (SMM) (Doc 9859).*

1.3.1 RESERVED

1.3.2 A flight data analysis programme shall contain adequate safeguards to protect the source(s) of the data in accordance with Appendix 3 to Annex 19.

*Note 1. —Guidance on the establishment of flight data analysis programmes is included in the* Manual on Flight Data Analysis Programmes (FDAP) *(Doc 10000).*

1.3.3 An operator is not allowed to make the use of recordings or transcripts of CVR, CARS, Class A AIR and Class A AIRS for purposes other than the investigation of an accident or incident as per Annex 13, except where the recordings or transcripts are:

a) related to a safety-related event identified in the context of a safety management system; are restricted to the relevant portions of a de-identified transcript of the recording; and are subject to the protections accorded by Annex 19;

b) sought for use in criminal proceedings not related to an event involving an accident or incident investigation and are subject to the protections accorded by Annex 19; or

c) used for inspections of flight recorder systems as provided in Section 6 of Appendix 4.

*Note. — Provisions on the protection of safety data, safety information and related sources are contained in Appendix 3 to Annex 19. When an investigation under Annex 13 is instituted, investigation records are subject to the protections accorded by Annex 13.*

1.3.4 Operator shall not use recordings or transcripts of FDR, ADRS, Class B and C AIR, and Class B and C AIRS for purposes other than the investigation of an accident or incident as per Annex 13, except where the recordings or transcripts are subject to the protections accorded by Annex 19 and are:

a) used by the operator for airworthiness or maintenance purposes;
b) used by the operator in the operation of a flight data analysis programme as provided in Section II of this FOR (H);
c) sought for use in proceedings not related to an event involving an accident or incident investigation;
d) de-identified; or
e) disclosed under secure procedures.

*Note. — Provisions on the protection of safety data, safety information and related sources are contained in Appendix 3 to Annex 19.*

1.3.5. The operator shall establish a flight safety documents system, for the use and guidance of operational personnel, as part of its safety management system.

*Note. — Guidance on the development and organization of a flight safety documents system is provided in* CAAN Advisory Circular 08/2020 Guidance for Air Operators in establishing a Flight Safety Documents System.

## 1.4 DANGEROUS GOODS

1.4.1 No operator may carry any item identified as dangerous goods under Technical Instructions for the Safe Transport of Dangerous Goods (DOC 9284) unless the operator has complied with CAAN Dangerous Goods Handling Requirements (DGHR).

*Note 1. — Provisions for carriage of dangerous goods are contained in Annex 18.*

*Note 2. — Article 35 of the Convention refers to certain classes of cargo restrictions.*

## 1.5 USE OF PSYCHOACTIVE SUBSTANCES

1.5.1 Holders of flight crew licenses and other personnel engaged in commercial air operations shall not exercise the privileges of their licenses and related ratings while under the influence of any psychoactive substance which might render them unable to safely and properly exercise these privileges.

1.5.2 Holders of licenses provided for in the PELR shall not engage in any problematic use of substances.

1.5.3 CAAN shall ensure, as far as practicable, that all license holders who engage in any kind of problematic use of substances are identified and removed from their safety-critical functions.

1.5.4 No person whose function is critical to the safety of aviation (safety-sensitive personnel) shall undertake that function while under the influence of any psychoactive substance, be reason of which human performance is impaired. No such person shall engage in any kind of problematic use of substances.

*Note. — Provisions concerning the use of psychoactive substances are contained in ICAO Annex 1, 1.2.7 and ICAO Annex 2, 2.5.*

1.6 RESERVED

## 1.7 INSPECTION AUTHORITY

1.7.1 Each certificate holder shall allow the inspectors of Director General in their respective fields at any time or place to make an inspection or test to determine its compliance with the civil air regulation, its operating certificate and its operations specifications or its eligibility to continue to hold its certificate.

1.7.2 Only a person or persons appointed by the Director General as an authorized officer or inspector shall be permitted at any time to board and to enter and remain on the flight deck, provided that

the commander of the helicopter, during in flight phase, may refuse to allow the authorized officer to enter or remain in the flight deck if in his opinion, the safety of the helicopter would thereby be endangered.

1.7.3 All authorized officers of CAAN for liaison and inspection carry a CAAN identity document, which will be produced on request. Request for arrangements of tickets on free passage and other required facilities to help to complete the task of inspection, will normally be made in advance. Except in case of the random surveillance inspection on base, while preparing the flight and in-flight, notification will not be made in advance.

1.7.4 Authorized Inspector(s) shall visit to observe the conduct of ground classes, demonstration classes etc of an operator and Flight Operation Inspectors shall observe the ground and training flights of pilots, competency checks, type rating ground and flight tests and instrument issuance and/or renewal tests. They are also empowered to inspect flight crew licenses and records of trainings and tests.

1.7.5 All matters relating to pilots that require an Observer shall be conducted by CAAN Flight Operations Inspectors or pilots.

1.7.6 The holder of an Air Operator certificate shall notify to the Director General of Civil Aviation of Nepal, not less than 14 days' notice in writing of the intended abolition of any of its responsible posts or of any intended change in the person holding the post or his duties.

1.7.7 Any person authorized by the Director General of Civil Aviation in that regard shall have access to any premises in the occupation or control of the holder of this Certificate for the purpose of examining the premises and any document, equipment, tools, material or other thing of whatsoever nature, relating to the operation of helicopter there under kept or used or intended to be used in connection with the operation of the helicopter.

1.7.8 Every flight under this certificate shall be conducted in accordance with the relevant provisions of the aforesaid operations manual and instructions.

## 1.8 OFFENCE AND PENALTY

1.8.1 Any person who:

a) contravenes or fails to comply with any provision of this Requirement.

b) performs any duty or exercises or any functions for which a license or rating is required under this Flight Operation Requirements.

c) makes a false or deceptive statement or in connection with any application for a license rating or certificate issued under Flight Operations Requirement.

d) Makes, procures or assists in the making or procuring of any false or deceptive entry in any document book or record made or kept under any rules made under Flight Operation Requirements.

e) Destroys, mutilates or alters any document book or record made or kept under any rules made under Flight Operation Requirements.

f) obstructs or hinders an investigation carried;

g) obstructs or impedes any authorized person acting in the performance or exercise of any duties powers of functions conferred on him by this Requirements

h) does or attempts to do anything likely to imperil the safety of an helicopter or its passengers or crew shall be guilty of an offence and shall be liable on conviction to any of

(i) a warning

(ii) a temporary suspension to perform his duty

(iii) suspension or revocation of license (or including suspension and cancellation of an authorization, permission, ratings or other endorsements)

(iv) a fine and/or possible imprisonment as applicable.

1.8.2 The Owner, Operator, Hirer or a Pilot-In-Command of an helicopter which flies in contravention of any rules made under Flight Operations Requirement, shall be guilty of an offence and shall be liable on conviction to any of a warning, suspension or revocation of license, a fine and possible imprisonment as applicable, unless it is proved that the alleged contravention took place without that person in actual fault.

## 1.9 QUALIFICATIONS OF FLIGHT INSTRUCTORS AND GROUND INSTRUCTORS

1.9.1 The holder of an Air Operator Certificate issued by the Director General who is engaged in commercial operations shall ensure that their Flight Instructor(s) and instructor(s) for ground courses are qualified with not less than that mentioned in FOR/PELR.

1.9.2 The Privileges of Instructor Pilot shall be as mentioned in Personnel Licensing Requirements -2019 Para 7.46.

## 1.10 OPERATORS TO PROVIDE OPERATIONS DIRECTORS

The holder of an Air Operator Certificate issued by the Director General who is engaged in commercial operations shall assign a Pilot-in-Command who is current or has previous experience as Pilot-in-Command as an Operations Director in the Operation Department.

1.11 RESERVED

## 1.12 OPERATORS TO ENSURE THAT FLIGHT CREW ARE QUALIFIED

1.12.1 The holder of an Air Operator Certificate issued by the Director General shall not permit an aircraft to fly unless:

a) The number and composition of the flight crew are not less than the minimum specified in the Operations Manual or as approved by the CAAN for that aircraft and the route to be flown; or the number of crew;

b) A pilot in the flight crew is designated as pilot-in-command for that flight;

c) All members of the flight crew are properly qualified as mentioned in the Personnel Licensing Requirements (PELR) and medically fit to carry out their duties.

1.12.2 Such an operator shall not permit an aircraft to fly for other than training purposes unless;

a) Each member of the flight crew holds a valid license appropriate to his duties;

b) Each member has demonstrated his competence to perform those duties by successfully completing the training program required;

c) Each member of the flight crew is in regular and full time employment of the holder or has been authorized by the Director General to make the flight; and

d) The flight and cabin crew have successfully received Initial and Recurrent Ground and Flight Trainings

1.12.3 Crew member requirements and their qualifications shall not be less than that as specified in the FOR.

1.12.4 Flight crewmember emergency duties

An operator shall, for each type of helicopter, assign to all flight crew member the necessary functions they are to perform in an emergency or in a situation requiring in the operator's training program and shall include instruction in the use of all emergency and life-saving equipment required to be carried and drills in the emergency evacuation of the helicopter.

1.13 RESERVED

1.14 RESERVED

## 1.15 OPERATORS TO PROVIDE FLIGHT DISPATCHERS/FLIGHT OPERATIONS OFFICERS

1.15.1 The holder of an Air Operator Certificate issued by the Director General shall not commence its operations where the number of aircraft being involved in operations is two or more, unless it has used the person(s) holding the Flight Dispatcher or Flight Operations Officer license for operational control including dispatching of the aircraft.

1.15.2 The holder of an Air Operator Certificate issued by the Director General shall not commence its operations unless he or his designated representative shall have responsibility for operational control.

1.15.3 Where the duties assigned for the dispatch of the aircraft is conducted by the flight crew, the requirement mentioned in 1.15.1 will not apply provided the flight time and duty time limitations of the pilot is not violated and the pilot's job description is mentioned in company's Operations Manual.

## 1.16 REVENUE, TRAINING AND TEST FLIGHTS

1.16.1 With the exception of en-route Inspection flight or Route Check, no commercial air operator shall conduct *any* type of training flight including Pilot Proficiency Checks (PPC), for the issuance or renewal of a license, during a flight filed as a commercial or revenue flight i.e. scheduled, non-scheduled or chartered.

1.16.2 Any commercial aircraft, when it is carrying passengers or Cabin Crew, shall not be used to flight test the (i) aircraft, or (ii) its power plant, or (iii) any item included in the Minimum Equipment List.

## 1.17 OPERATORS TO PROVIDE TRAININGS

1.17.1 With respect to 1.12.1 (c), operators must provide Initial and Recurrent ground and flight trainings to all its Crew members, Flight Dispatchers and any other personnel involved in the safe conduct of operations as per their requirements.

1.17.2 The details of the trainings shall be as required in Chapter 13 of this FOR.

1.17.3 All initial and recurrent training records of Flight Crew, Cabin Crew and Flight Dispatchers/Flight Operations Officers are to be maintained with the Operator at least till the termination of employment.

## 1.18 ASSESSMENT OF CREW AND OTHER PERSONNEL

### 1.18.1 CONDITIONS

An AOC holder shall conduct an assessment of a flight crew by a type rated instructor for the following conditions:

(i) When the AOC holder inducts a new co-pilot or First Officer into the company
(ii) When the AOC holder upgrades a co-pilot or First Officer to Captain
(iii) When the AOC holder selects a candidate to undergo a Type Rating Instructor or Type Rating Examiner training programme
(iv) When the AOC holder selects a Cabin Crew to be upgraded to Check Cabin Crew
(v) When the AOC holder selects a Flight Dispatcher to be upgraded to Check Flight Dispatcher
(vi) When the AOC holder inducts any new Flight Crew from any other company, assessment for a type rated pilot who holds a valid CAAN license may be conducted by an Examiner or Instructor during a commercial flight with prior permission from CAAN.

### 1.18.2 TYPES OF ASSESSMENT

The AOC holder shall conduct an assessment of a Flight Crew member or other personnel mentioned in 1.18.1 in a manner best suited to its operations; however, it should normally consist of a written and oral test/interview followed by at least one session in the simulator or aircraft.

The different methodologies used to assess a flight crew are:

(a) Basic mental abilities eg. Logic abilities, memory capacity, serial learning, visual processing
(b) Operational competencies eg. Planning, prioritizing, decision making, multi-tasking, information processing, problem solving etc.
(c) Social competencies eg. Communication skills, cooperation, assertiveness, leadership etc.
(d) Personality traits eg. Self-discipline, self-critical attitudes, stress management, self-organization, professional aspiration level
(e) Manual flying skills assessment and/or Systems and Crew Management assessment as required.

The operator shall develop a form that will be used for such assessments as part of its Operations Manual Part-D.

### 1.18.3 RESULT OF THE ASSESSMENT

(i) The purpose of such types of assessment is to assess the level of competency of the candidate in terms of knowledge of general topics of aviation or type specific as the case may be.
(ii) Once the assessment has been conducted, the AOC holder must conduct a gap analysis of the competency demonstrated by the candidate and the company's standards.
(iii) The gap (if any) demonstrated by the candidate in relation to the company's standards must be closed using suitable means prior to the candidate proceeding further with any formal training leading to a type rating or endorsement.

## 1.19 OPERATORS TO ESTABLISH A PUBLICATIONS LIBRARY

1.19.1 An air operator shall maintain a library of publications required for its operations.

1.19.2 The library shall also contain a list of publications that the Operator has determined is necessary for its operations.

1.19.3 The operations library shall include as a minimum:

(i) CAAN Rules and Regulations
(ii) Air Operator Certificate Requirements
(iii) Flight Operations Requirements
(iv) Aeronautical Information Publications
(v) Personnel Licensing Requirements
(vi) Dangerous Goods Handling Requirements

(vii) Cabin Crew Training Manual
(viii) Aircraft Flight Manual
(ix) Company Operations Manual
(x) Standard Operating Procedures Manual
(xi) Flight Crew Operating Manual
(xii) Maps and Charts

## 1.20 OPERATORS TO ENSURE COMPLIANCE WITH COMPANY SOP

1.20.1 Operators shall make adequate provisions through their documents and procedures to ensure that the flight crew use and adhere to their own company Standard Operating Procedures (SOP) when:

a) undergoing ground and flight trainings within the country or abroad; or
b) engaged in line flying activities.

1.20.2 An air operator shall ensure that:

a) when two or more crew are utilized for a particular flight, crew briefings are conducted as an integral part of its Standard Operating Procedures (SOP);
b) such briefings include departure and approach briefings; and
c) joint Flight and Cabin Crew flight briefings are being conducted (if the operation requires a Cabin Crew).

# CHAPTER 2

# FLIGHT OPERATIONS

## 2.1 OPERATING FACILITIES

2.1.1 An operator shall ensure that a flight will not be commenced unless it has been ascertained by every reasonable means available that the ground and/or water facilities available and directly required on such flight, for the safe operation of the helicopter and the protection of the passengers, are adequate for the type of operation under which the flight is to be conducted and are adequately operated for this purpose.

*Note. — "Reasonable means" in this FOR is intended to denote the use, at the point of departure, of information available to the operator either through official information published by the aeronautical information services or readily obtainable from other sources.*

2.1.2 An operator shall ensure that any inadequacy of facilities observed in the course of operations is reported to the authority responsible for them, without undue delay.

## 2.2 OPERATIONAL CERTIFICATION AND SUPERVISION

### 2.2.1 The Air Operator Certificate

2.2.1.1 An operator shall not engage in commercial air transport operations unless in possession of a valid Air Operator Certificate issued by the DG, CAAN.

2.2.1.2 The Air Operator Certificate shall authorize the operator to conduct commercial air transport operations in accordance with the Operations Specifications.

*Note. — Provisions for the content of the Air Operator Certificate and its associated operations Specifications are contained in the Air Operator Certificate Requirements (AOCR).*

2.2.1.3 The issue of an Air Operator Certificate by the DG, CAAN shall be dependent upon the operator demonstrating an adequate organization, method of control and supervision of flight operations, training programme as well as ground handling and maintenance arrangements consistent with the nature and extent of the operations specified.

*Note. —CAAN AOCR contains guidance on the issue of an Air Operator Certificate.*

2.2.1.4 The continued validity of an Air Operator Certificate shall depend upon the operator maintaining the requirements of 2.2.1.3 under the supervision of the DG, CAAN.

2.2.1.5 The Air Operator Certificate contains at least the following information and shall follow the layout of as mentioned in the Air Operator Certificate Requirements (AOCR):

a) the State of the Operator and the issuing authority;
b) the Air Operator Certificate Number and its expiration date;
c) the operator name, trading name (if different) and address of the principal place of business;
d) the date of issue and the name, signature and title of the authority representative; and
e) the location, in a controlled document carried on board, where the contact details of operational management can be found.

2.2.1.6 The operations specifications associated with the air operator certificate shall contain at least the information listed in and shall follow the layout of Appendix 7 of the AOCR.

2.2.1.7 Air Operator Certificates and their associated Operations Specifications shall follow the layouts of the AOCR.

2.2.1.8 Systems for both the certification and the continued surveillance of the operator have been established by the DG, CAAN in accordance with Annexes to ensure that the required standards of operations established in 2.2 are maintained.

2.2.1.9 The Air Operator shall nominate a person responsible for the maintenance of the AOC and its associated Operations Specifications and related documents.

**2.2.2 Surveillance of Operations by a Foreign Operator**

2.2.2.1 DG, CAAN shall recognize as valid an Air Operator Certificate issued by another Contracting State provided that the requirements under which the certificate was issued are at least equal to the applicable Standards specified in this FOR(H) and in Annex 19.

2.2.2.2 The CAA Nepal has established a programme with procedures for the surveillance of operations in Nepalese territory by a foreign operator and for taking appropriate action when necessary to preserve safety.

2.2.2.3 An operator shall meet and maintain the requirements established by the DG, CAAN when the operations are conducted within Nepalese territory.

**2.2.3 Operations manual**

2.2.3.1 a) An operator shall make available, for the use and guidance of operations personnel concerned, an Operations Manual divided in four parts and constructed using the guidance contained in Appendix 1.

b) The operations manual shall be amended or revised as is necessary to ensure that the information contained therein is kept up to date. All such amendments or revisions shall be notified to all personnel that are required to use this manual.

c) A review committee consisting of at least the key postholders of Flight Operations and an Instructor on type must jointly review any proposed amendment to the Operations Manual prior to submitting to CAAN for approval or acceptance.

2.2.3.2 The operator shall provide a copy of the Operations Manual together with all amendments and/or revisions, for review and acceptance and, where required, approval. The operator shall incorporate in the operations manual such mandatory material as the DG, CAAN may require. All training programs require an approval.

*Note 1. — Guidance for the organization and contents of an operations manual is provided in Appendix 1.*

*Note 2. — Specific items in an operations manual require the approval of the DG, CAAN in accordance with the requirements in 2.2.8 Heliport or landing location operating minima, 4.1.3 MEL, 7.3.1 Flight Crew member training programmes, 10.3 Cabin crew training and 11.2.1 Crew members' security training.*

**2.2.4 Operating Instructions — General**

2.2.4.1 An operator shall ensure that all operations personnel are properly instructed in their particular duties and responsibilities and the relationship of such duties to the operation as a whole.

2.2.4.2 A helicopter rotor shall not be turned under power, for the purpose of flight, without a qualified pilot at the controls. The operator shall provide appropriately specific training and procedures to be followed for all personnel, other than qualified pilots, who are likely to carry out the turning of a rotor under power for purposes other than flight.

2.2.4.3 RESERVED

2.2.4.4 Only a qualified pilot designated by the Operator as a Pilot-in-Command of a particular type, shall be permitted to hover a helicopter for maintenance check purposes. A "hover" during such checks shall not be considered a part of flight time if it is part of an engine run-up and for which a Flight Plan is not required.

**2.2.5 In-flight simulation of emergency situations**

An operator shall ensure that when passengers or cargo are being carried, no emergency or abnormal situations shall be simulated.

**2.2.6 Checklists**

The checklists provided in accordance with 4.1.4 shall be used by flight crews prior to, during and after all phases of operations, and in emergency, to ensure compliance with the operating procedures contained in the Aircraft Operating Manual, the Aircraft Flight Manual or other documents associated with the Certificate of Airworthiness and otherwise in the operations manual. The design and utilization of checklists shall observe Human Factors principles.

*Note. — Guidance material on the application of Human Factors principles can be found in the* Human Factors Training Manual *(Doc 9683).*

**2.2.7 Minimum flight altitudes (operations under IFR)**

2.2.7.1 An operator shall be permitted to establish minimum flight altitudes for those routes flown for which minimum flight altitudes have been established by the State flown over or the responsible State, provided that they shall not be less than those established by that State, unless specifically approved.

2.2.7.2 An operator shall specify the method by which it is intended to determine minimum flight altitudes for operations conducted over routes for which minimum flight altitudes have not been established by the State flown over, or the responsible State, and shall include this method in the operations manual. The minimum flight altitudes determined in accordance with the above method shall not be lower than specified in Annex 2.

2.2.7.3 RESERVED.

2.2.7.4 RESERVED

**2.2.8 Heliport or landing location operating minima**

2.2.8.1 An Operator shall establish operating minima for each heliport or landing location to be used in operations and the method of determination of such minima shall require approval from CAAN. Such minima shall not be lower than any that may be established for such heliports or landing locations by the DG, CAAN, except when specifically approved.

2.2.8.1.1 DG, CAAN may approve operational credit(s) for operations with helicopters equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS. Such approvals shall not affect the classification of the instrument approach procedure.

*Note 1. — Operational credit includes:*

*a) for the purposes of an approach ban (2.4.1.2), minima below the heliport or landing location operating minima;*
*b) reducing or satisfying the visibility requirements; or*
*c) requiring fewer ground facilities as compensated for by airborne capabilities.*

*Note 2. — Guidance on operational credit for aircraft equipped with automatic landing systems, a HUD or equivalent displays, EVS, SVS and CVS is contained in Attachment I and in the* Manual of All-Weather Operations *(Doc 9365).*

*Note 3. — Information regarding a HUD or equivalent displays, including references to RTCA and EUROCAE documents, is contained in the* Manual of All-Weather Operations *(Doc 9365).*

*Note 4. — Automatic landing system — helicopter is an automatic approach using airborne systems which provide automatic control of the flight path, to a point aligned with the landing surface, from which the pilot can transition to a safe landing by means of natural vision without the use of automatic control.*

2.2.8.2 In establishing the operating minima for each heliport or landing location which will apply to any particular operation, the operator shall take full account of:

a) the type, performance and handling characteristics of the helicopter and any conditions or limitations stated in the flight manual;
b) the composition of the flight crew, their competence and experience;
c) the physical characteristics of the heliport, and direction of approach;
d) the adequacy and performance of the available visual and non-visual ground aids;
e) the equipment available on the helicopter for the purpose of navigation, acquisition of visual references and/or control of the flight path during the approach, landing and the missed approach/overshoot;
f) the obstacles in the approach and missed approach areas and the obstacle clearance altitude/height for the instrument approach procedures;
g) the means used to determine and report meteorological conditions;
h) the obstacles in the climb-out areas and necessary clearance margins;
i) the conditions prescribed in the operations specifications; and
j) any minima that may be promulgated by the State of the Aerodrome.

2.2.8.3 Instrument approach operations shall be classified based on the designed lowest operating minima below which an approach operation shall only be continued with the required visual reference as follows:

a) Type A: a minimum descent height or decision height at or above 75 m (250 ft); and

b) Type B: a decision height below 75 m (250 ft). Type B instrument approach operations are categorized as:

1) Category I (CAT I): a decision height not lower than 60 m (200 ft) and with either a visibility not less than 800 m or a runway visual range not less than 550 m;

2) Category II (CAT II): a decision height lower than 60 m (200 ft), but not lower than 30 m (100 ft) and a runway visual range not less than 300 m; and

3) Category III (CAT III): a decision height lower than 30 m (100 ft) or no decision height and a runway visual range less than 300 m or no runway visual range limitations;

*Note 1.— Where decision height (DH) and runway visual range (RVR) fall into different categories of operation, the instrument approach operation would be conducted in accordance with the requirements of the most demanding category (e.g. an operation with a DH in the range of CAT III but with an RVR in the range of CAT II would be considered a CAT III operation or an operation with a DH in the range of CAT II but with an RVR in the range of CAT I would be considered a CAT II operation). This does not apply if the RVR and/or DH has been approved as operational credits.*

*Note 2. — The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the*

*aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach operation the required visual reference is the runway environment.*

*Note 3. — Guidance on approach classification as it relates to instrument approach operations, procedures, runways and navigation systems is contained in the* Manual of All-Weather Operations *(Doc 9365).*

2.2.8.4 CAAN shall issue a specific approval for instrument approach operations in low visibility which shall only be conducted when RVR information is provided.

*Note.— Guidance on low visibility operations is contained in the Manual of All-Weather Operations (Doc 9365).*

2.2.8.5 For take-off in low visibility, the State of the Operator shall issue a specific approval for the minimum take-off RVR.

*Note.— In general, visibility for take-off is defined in terms of RVR. An equivalent horizontal visibility may also be used.*

2.2.8.6 RESERVED

2.2.8.7 The operating minima for 2D instrument approach operations using instrument approach procedures shall be determined by establishing a minimum descent altitude (MDA) or minimum descent height (MDH), minimum visibility and, if necessary, cloud conditions.

*Note. — For guidance on applying a continuous descent final approach (CDFA) flight technique on non-precision approach procedures refer to PANS-OPS (Doc 8168) Volume I, Part II, Section 5.*

2.2.8.8 The operating minima for 3D instrument approach operations using instrument approach procedures shall be determined by establishing a decision altitude (DA) or decision height (DH) and the minimum visibility or RVR.

**2.2.9 Fuel and oil records**

2.2.9.1 An operator shall maintain fuel and oil records to enable the CAAN to ascertain that, for each flight, the requirements of 2.3.6 have been complied with.

2.2.9.2 Fuel and oil records shall be retained by the operator for a period of three months.

**2.2.10 Crew**

2.2.10.1 *Pilot-in-command.* For each flight, the operator shall designate one pilot to act as pilot-in-command.

2.2.10.2 *Flight time, flight duty periods and rest periods.* An operator shall formulate rules to limit flight time and flight duty periods and for the provision of adequate rest periods for all its crew members. These rules shall be in accordance with the regulations established by the DG, CAAN and included in the operations manual.

*Note – Guidance on the establishment of limitations is given in Attachment D.*

2.2.10.3 An operator shall maintain current records of the flight time, flight duty periods and rest periods of all its crewmembers.

**2.2.11 Passengers**

2.2.11.1 An operator shall ensure that passengers are made familiar with the location and use of:

a) seat belts or harnesses;
b) emergency exits;
c) life jackets, if the carriage of life jackets is prescribed;
d) oxygen dispensing equipment, if the provision of oxygen for the use of passengers is prescribed; and
e) other emergency equipment provided for individual use, including passenger emergency briefing cards.

2.2.11.2 The operator shall ensure that the passengers are informed (briefed) of the location and general manner of use of the principal emergency equipment carried for collective use.

2.2.11.3 The operator shall ensure that in an emergency during flight, passengers shall be instructed in such emergency action as may be appropriate to the circumstances.

2.2.11.4 The operator shall ensure that, during take-off and landing and whenever considered necessary by reason of turbulence or any emergency occurring during flight, all passengers on board a helicopter shall be secured in their seats by means of the seat belts or harnesses provided.

**2.2.12 Over-water flights**

All helicopters on flights over water in a hostile environment in accordance with 4.5.1 shall be certificated for ditching. Sea state shall be an integral part of ditching information.

**2.3 FLIGHT PREPARATION**

2.3.1 A flight, or series of flights, shall not be commenced until flight preparation forms have been completed certifying that the pilot-in-command is satisfied that:

a) the helicopter is airworthy;
b the instruments and equipment prescribed in Chapter 4, for the particular type of operation to be undertaken, are installed and are sufficient for the flight;
c) a maintenance release as prescribed in 6.7 has been issued in respect of the helicopter;
d) the mass of the helicopter and centre of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;
e) any load carried is properly distributed and safely secured;
f) a check has been completed indicating that the operating limitations of Chapter 3 can be complied with for the flight to be undertaken; and
g) the requirements of 2.3.3 relating to operational flight planning have been complied with.

*Note. — Series of flights are consecutive flights that*:

(*a) begin and end within a period of 24 hours; and*
*(b) are all conducted by the same pilot-in-command.*

2.3.2 Completed flight preparation forms shall be kept by an operator for a period of three months.

**2.3.3 Operational flight planning**

2.3.3.1 a) An operational flight plan shall be completed for every intended international flight or series of flights, approved by the pilot-in-command and lodged with the appropriate authority. The operator shall determine the most efficient means of lodging the operational flight plan.

b) An operational flight plan is not required when the aerodrome of departure and landing is the same.

2.3.3.2 a) The operations manual shall describe the content and use of the operational flight plan.

b) Records of the operational flight plan shall be kept for a minimum period of three months.

*Note - Refer to Chapter 3.3 of CAR-2 for information on ATS flight plans.*

**2.3.4 Alternate heliports**

2.3.4.1 *Take-off alternate heliport*

2.3.4.1.1 A take-off alternate heliport shall be selected and specified in the operational flight plan if the weather conditions at the heliport of departure are at or below the applicable heliport operating minima.

2.3.4.1.2 For a heliport to be selected as a take-off alternate, the available information shall indicate that, at the estimated time of use, the conditions will be at or above the heliport operating minima for that operation.

2.3.4.2 *Destination alternate heliport*

2.3.4.2.1 For a flight to be conducted in accordance with IFR, at least one destination alternate shall be specified in the operational flight plan and the flight plan, unless:

a) the duration of the flight and the meteorological conditions prevailing are such that there is reasonable certainty that, at the estimated time of arrival at the heliport of intended landing, and for a reasonable period before and after such time, the approach and landing may be made under visual meteorological conditions, or

b) the heliport of intended landing is isolated and no suitable alternate is available. A point of no return (PNR) shall be determined by the operator.

2.3.4.2.2 For a heliport to be selected as a destination alternate, the available information shall indicate that, at the estimated time of use, the conditions will be at or above the heliport operating minima for that operation.

2.3.4.2.3 RESERVED

2.3.4.3 When an offshore alternate heliport is specified, it shall be specified subject to the following:

a) the offshore alternates shall be used only after a PNR. Prior to a PNR, onshore alternates shall be used;
b) mechanical reliability of critical control systems and critical components shall be considered and taken into account when determining the suitability of the alternate heliport(s);
c) one engine inoperative performance capability shall be attainable prior to arrival at the alternate heliport;
d) to the extent possible, deck availability shall be guaranteed; and
e) weather information must be reliable and accurate.

*Note. — The landing technique specified in the flight manual following control system failure may preclude the nomination of certain helidecks as alternate heliports.*

2.3.4.4 RESERVED

**2.3.5 Meteorological conditions**

2.3.5.1 A flight to be conducted in accordance with VFR shall not be commenced unless current meteorological reports or a combination of current reports and forecasts indicate that the meteorological conditions along the route or that part of the route to be flown or in the intended area of operations under VFR will, at the appropriate time, be such as to enable compliance with these rules.

*Note. — When a flight is conducted in accordance with VFR, the use of night vision imaging systems (NVIS) or other vision enhancing systems does not diminish the requirement to comply with the provisions of 2.3.5.1.*

2.3.5.2 A flight to be conducted in accordance with IFR shall not be commenced unless information is available which indicates that conditions at the destination heliport or landing location or, when an alternate is required, at least one alternate heliport will, at the estimated time of arrival, be at or above the heliport operating minima.

2.3.5.3 To ensure that an adequate margin of safety is observed in determining whether or not an approach and landing can be safely carried out at each alternate heliport or landing location, the operator shall specify appropriate incremental values for height of cloud

base and visibility, acceptable to the DG, CAAN, to be added to the operator's established heliport or landing location operating minima.

2.3.5.4 A flight to be operated in known or expected icing conditions shall not be commenced unless the helicopter is certificated and equipped to cope with such conditions.

2.3.5.5 A flight to be planned or expected to operate in suspected or known ground icing conditions shall not be commenced unless the helicopter has been inspected for icing and, if necessary, has been given appropriate de-icing/anti-icing treatment. Accumulation of ice or other naturally occurring contaminants shall be removed so that the helicopter is kept in an airworthy condition prior to take-off.

*Note. — Guidance material is given in the* Manual of Aircraft Ground De-icing/Anti-icing Operations *(Doc 9640).*

**2.3.6 Fuel and oil requirements**

2.3.6.1 *All helicopters.* A flight shall not be commenced unless, taking into account both the meteorological conditions and any delays that are expected in flight, the helicopter carries sufficient fuel and oil to ensure that it can safely complete the flight. In addition, a reserve shall be carried to provide for contingencies.

2.3.6.2 *VFR operations.* The fuel and oil carried in order to comply with 2.3.6.1 shall, in the case of VFR operations, be at least the amount sufficient to allow the helicopter to:

a) fly to the landing site to which the flight is planned;
b) have final reserve fuel to fly thereafter for a period of 20 minutes at best-range speed; and
c) have an additional amount of fuel to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the DG, CAAN.

2.3.6.3 *IFR operations.* The fuel and oil carried in order to comply with 2.3.6.1 shall, in the case of IFR operations, be at least the amount to allow the helicopter:

2.3.6.3.1 When an alternate is not required, in terms of 2.3.4.2.1 a), to fly to and execute an approach to the heliport or landing location to which the flight is planned, and thereafter:

a) final reserve fuel to fly 30 minutes at holding speed at 450 m (1 500 ft) above the destination heliport or landing location under standard temperature conditions and approach and land; and
b) to have an additional amount of fuel to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the DG, CAAN.

2.3.6.3.2 When an alternate is required, to fly to and execute an approach, and a missed approach, at the heliport or landing location to which the flight is planned, and thereafter:

a) fly to and execute an approach at the alternate specified in the flight plan; and then
b) have final reserve fuel to fly for 30 minutes at holding speed at 450 m (1 500 ft) above the alternate under standard temperature conditions, and approach and land; and
c) to have an additional amount of fuel to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the DG, CAAN.

2.3.6.3.3 When no alternate heliport or landing location is available, in terms of 2.3.4.2.1 (e.g. the destination is isolated), sufficient fuel shall be carried to enable the helicopter to fly to the destination to which the flight is planned and thereafter for a period that will, based on geographic and environmental considerations, enable a safe landing to be made.

2.3.6.4 In computing the fuel and oil required in 2.3.6.1, at least the following shall be considered:

a) meteorological conditions forecast;
b) expected air traffic control routings and traffic delays;
c) for IFR flight, one instrument approach at the destination heliport, including a missed approach;
d) the procedures prescribed in the operations manual for failure of one engine while en-route; and
e) any other conditions that may delay the landing of the helicopter or increase fuel and/or oil consumption.

*Note. — Nothing in 2.3.6 precludes amendment of a flight plan in flight in order to replan the flight to another heliport, provided that the requirements of 2.3.6 can be complied with from the point where the flight has been replanned.*

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

**2.3.7 Refueling with passengers on board or rotors turning**

*Note. — Except where otherwise stated, all helicopter refueling provisions relate to operations using jet fuels. See 2.3.7.5 for restrictions specific to AVGAS/wide cut fuels.*

2.3.7.1 A helicopter shall not be refuelled, rotors stopped or turning, when:
a) passengers are embarking or disembarking; or
b) when oxygen is being replenished

2.3.7.2 When the helicopter is refuelled with passengers on board, rotors stopped or turning, it shall be properly attended by sufficient qualified personnel, ready to initiate and direct an evacuation of the helicopter by the most practical, safe and expeditious means available. In order to achieve this:

a) the flight crew shall ensure that the passengers are briefed on what actions to take if an incident occurs during refuelling;

b) a constant two-way communication shall be maintained by the helicopter's intercommunication system or other suitable means between the ground crew supervising the refuelling and the qualified personnel on board the helicopter; and

*Note. — Caution needs to be exercised when using radios for this purpose due to the potential for stray currents and radio-induced voltages.*

c) during an emergency shutdown procedure, the flight crew shall ensure that any personnel or passengers outside the helicopter are clear of the rotor area.

2.3.7.3 The operator shall establish procedures and specify conditions under which such refuelling may be carried out.

2.3.7.4 In addition to the requirements of 2.3.7.2, operational procedures should specify that at least the following precautions are taken:

a) doors on the refuelling side of the helicopter remain closed where possible, unless these are the only suitable exits;
b) doors on the non-refuelling side of the helicopter remain open, weather permitting, unless otherwise specified by the RFM;
c) fire-fighting facilities of the appropriate scale be positioned so as to be immediately available in the event of a fire;
d) if the presence of fuel vapour is detected inside the helicopter, or any other hazard arises during refuelling, fuelling be stopped immediately;
e) the ground or deck area beneath the exits intended for emergency evacuation be kept clear;
f) seat belts should be unfastened to facilitate rapid egress; and
g) with rotors turning, only ongoing passengers should remain on board.

2.3.7.5 A helicopter shall not be refuelled with AVGAS (aviation gasoline) or wide-cut type fuel or a mixture of these types of fuel, when passengers are on board.

2.3.7.6 A helicopter shall not be defueled at any time when:

a) passengers remain on board; or
b) passengers are embarking or disembarking; or
c) oxygen is being replenished.

*Note 1. — Provisions concerning aircraft refueling are contained in ICAO Annex 14, Volume I, and guidance on safe refueling practices is contained in the* Airport Services Manual *(Doc 9137), Parts 1 and 8.*

*Note 2. — Additional precautions are required when refueling with fuels other than aviation kerosene or when refueling results in a mixture of aviation kerosene with other aviation turbine fuels, or when an open line is used.*

### 2.3.8 Oxygen supply

*Note. — Approximate altitudes in the Standard Atmosphere corresponding to the values of absolute pressure used in the text are as follows:*

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

2.3.8.1 A flight to be operated at flight altitudes at which the atmospheric pressure in personnel compartments will be less than 700 hPa shall not be commenced unless sufficient stored breathing oxygen is carried to supply the crew and passengers for any period that the atmospheric pressure in compartments occupied by them will be less than 700 hPa.

2.3.8.2 RESERVED

## 2.4 IN-FLIGHT PROCEDURES

### 2.4.1 Heliport operating minima

2.4.1.1 A flight shall not be continued towards the heliport of intended landing, unless the latest available information indicates that at the expected time of arrival, a landing can be effected at that heliport, or at least one alternate heliport, incompliance with the operating minima established in accordance with 2.2.8.1.

2.4.1.2 An instrument approach shall not be continued below 300 m (1 000 ft) above the heliport elevation or into the final approach segment unless the reported visibility or controlling RVR is at or above the heliport operating minima.

*Note. — Criteria for the final approach segment is contained in PANS-OPS (Doc 8168), Volume II.*

2.4.1.3 If, after entering the final approach segment or after descending below 300 m (1 000 ft) above the heliport elevation, the reported visibility or controlling RVR falls below the specified minimum, the approach may be continued to DA/H or MDA/H. In any case, a helicopter shall not continue its approach-to-land at any heliport beyond a point at which the limits of the operating minima specified for that heliport would be infringed.

**2.4.2 Meteorological observations**

*Note. — The procedures for making meteorological observations on board aircraft in flight and for recording and reporting them are contained in Annex 3, the PANS-ATM (Doc 4444) and the appropriate* Regional Supplementary Procedures *(Doc 7030).*

**2.4.3 Hazardous flight conditions**

Hazardous flight conditions encountered, other than those associated with meteorological conditions, shall be reported to the appropriate aeronautical station as soon as possible. The reports so rendered shall give such details as may be pertinent to the safety of other aircraft.

**2.4.4 Flight crew members at duty stations**

2.4.4.1 *Take-off and landing.* All flight crew members required to be on flight deck duty shall be at their stations.

2.4.4.2 *En route.* All flight crew members required to be on flight deck duty shall remain at their stations except when their absence is necessary for the performance of duties in connection with the operation of the helicopter or for physiological needs.

2.4.4.3 *Seat belts.* All flight crew members shall keep their seat belt fastened when at their stations.

2.4.4.4 *Safety harness.* Any flight crew member occupying a pilot's seat shall keep the safety harness fastened during the take-off and landing phases; all other flight crew members shall keep their safety harness fastened during the take-off and landing phases unless the shoulder straps interfere with the performance of their duties, in which case the shoulder straps maybe unfastened but the seat belt must remain fastened.

*Note. — Safety harness includes shoulder straps and a seat belt which may be used independently.*

2.4.4.5 At least one flight crew member must be at the controls of the helicopter at all times while the rotors are turning under power.

2.4.4.6 In case of operations at remote locations where it is unavoidable for the flight crew member to comply with 2.4.4.5, the flight crew member may exit the helicopter for as short a duration as possible after ensuring that the engine is in ground idle mode and the flight controls are properly locked.

**2.4.5 Use of oxygen**

All flight crew members, when engaged in performing duties essential to the safe operation of a helicopter in flight, shall use breathing oxygen continuously whenever the circumstances prevail for which its supply has been required in 2.3.8.1 or 2.3.8.2.

**2.4.6 Safeguarding of cabin crew and passengers in pressurized aircraft in the event of loss of pressurization**

2.4.6.1 RESERVED

**2.4.7 Instrument flight procedures**

2.4.7.1 One or more instrument approach procedures to serve each final approach and take-off area or heliport utilized for instrument flight operations shall be approved and promulgated by the State in which the heliport is located, or by the State which is responsible for the heliport when located outside the territory of any State.

2.4.7.2 All helicopters operated in accordance with IFR shall comply with the instrument approach procedures approved by the State in which the heliport is located, or by the State which is responsible for the heliport when located outside the territory of any State.

*Note 1. — Operational procedures recommended for the guidance of operations personnel involved in instrument flight operations are described in PANS-OPS (Doc 8168), Volume I.*

*Note 2. — Criteria for the construction of instrument flight procedures for the guidance of procedure specialists are provided in PANS-OPS (Doc 8168), Volume II. Obstacle clearance criteria and procedures used in certain States may differ from PANS-OPS, and knowledge of these differences is important for safety reasons (see SEC II, Chapter 1, 1.1.1).*

**2.4.8 Helicopter operating procedures for noise abatement**

RESERVED

**2.4.9 In-flight fuel management**

2.4.9.1 An operator shall establish policies and procedures, approved by the State of the Operator, to ensure that in flight fuel checks and fuel management are performed.

2.4.9.2 The pilot-in-command shall monitor the amount of usable fuel remaining on board to ensure it is not less than the fuel required to proceed to a landing site where a safe landing can be made with the planned final reserve fuel remaining.

2.4.9.3 The pilot-in-command shall advise ATC of a minimum fuel state by declaring MINIMUM FUEL when, having committed to land at a specific landing site, the pilot calculates that any change to the existing clearance to that landing site, or other air traffic delays, may result in landing with less than the planned final reserve fuel.

*Note 1. — The declaration of MINIMUM FUEL informs ATC that all planned landing site options have been reduced to a specific landing site of intended landing, that no precautionary landing site is available, and any change to the existing clearance, or air traffic delays, may result in landing with less than the planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.*

*Note 2. — A precautionary landing site refers to a landing site, other than the site of intended landing, where it is expected that a safe landing can be made prior to the consumption of the planned final reserve fuel.*

2.4.9.4 The pilot-in-command shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL, when the usable fuel estimated to be available upon landing at the nearest landing site where a safe landing can be made is less than the required final reserve fuel in compliance with 2.3.6.

*Note 1. — The planned final reserve fuel refers to the value calculated in 2.3.6 and is the minimum amount of fuel required upon landing at any landing site. The declaration of MAYDAY MAYDAY MAYDAY FUEL informs ATC that all available landing options have been reduced to a specific site and a portion of the final reserve fuel may be consumed prior to landing.*

*Note 2. — The pilot estimates with reasonable certainty that the fuel remaining upon landing at the nearest safe landing site will be less than the final reserve fuel taking into consideration the latest information available to the pilot, the area to be over flown (i.e. with respect to the availability of precautionary landing areas), meteorological conditions and other reasonable contingencies.*

*Note 3. — The words "MAYDAY FUEL" describe the nature of the distress conditions as required in ICAO Annex 10, Volume II, 5.3.2.1.1, b) 3.*

## 2.5 DUTIES OF PILOT-IN-COMMAND

2.5.1 The pilot-in-command shall be responsible for the operation and safety of the helicopter and for the safety of all crew members, passengers and cargo on board, from the moment the engine(s) are started until the helicopter finally comes to rest at the end of the flight, with the engine(s) shut down and the rotor blades stopped.

2.5.2 The pilot-in-command shall ensure that the checklists specified in 2.2.6 are complied with in detail.

2.5.3 The pilot-in-command shall be responsible for notifying the nearest appropriate authority by the quick available means of any accident involving the helicopter, resulting in serious injury or death of any person or substantial damage to the helicopter or property.

*Note. — A definition of the term "serious injury" is contained in Annex 13.*

2.5.4 The pilot-in-command shall be responsible for reporting all known or suspected defects in the helicopter, to the operator, at the termination of the flight.

2.5.5 The pilot-in-command shall be responsible for the journey log book or the general declaration containing the information listed in 9.4.1.

*Note. — By virtue of Resolution A10-36 of the Tenth Session of the Assembly (Caracas, June–July 1956) "the general declaration, [described in Annex 9] when prepared so as to contain all the information required by Article 34 [of the Convention on International Civil Aviation]*

*with respect to the journey log book, may be considered by Contracting States to be an acceptable form of journey log book".*

## 2.6 DUTIES OF FLIGHT OPERATIONS OFFICER/FLIGHT DISPATCHER

2.6.1 A flight operations officer/flight dispatcher in conjunction with a method of control and supervision of flight operations in accordance with 2.2.1.3 shall:

a) assist the pilot-in-command in flight preparation and provide the relevant information;
b) assist the pilot-in-command in preparing the operational and ATS flight plans, sign when applicable and file the ATS flight plan with the appropriate ATS unit; and
c) furnish the pilot-in-command while in flight, by appropriate means, with information which may be necessary for the safe conduct of the flight.

2.6.2 In the event of an emergency, a flight operations officer/flight dispatcher shall:

a) initiate such procedures as outlined in the operations manual while avoiding taking any action that would conflict with ATC procedures; and
b) convey safety-related information to the pilot-in-command that may be necessary for the safe conduct of the flight, including information related to any amendments to the flight plan that become necessary in the course of the flight.

*Note. — It is equally important that the pilot-in-command also convey similar information to the flight operations officer/flight dispatcher during the course of a flight, particularly in the context of emergency situations.*

## 2.7. CARRY-ON BAGGAGE

2.7.1 The operator shall ensure that all baggage carried onto a helicopter and taken into the passenger cabin is adequately and securely stowed.

2.7.2 No person may carry cargo, including carry-on baggage, in or on any aircraft unless:

(i) it is carried in an approved cargo rack, bin or compartment installed in or on the aircraft.
(ii) it is secured by an approved means, or

(iii) it is carried in accordance with the following:

(1) for cargo, it is properly secured by a safety belt or other tie-down having enough strength to eliminate the possibility of shifting under all normally anticipated flight and ground conditions, or for carry-on baggage, it is restrained so as to prevent its movement during air turbulence.

(2) it is packaged or covered to avoid possible injury to occupants.

(3) it does not impose any load on seats or on the floor structure that exceeds the load limitation for those components.

(4) it is not located in a position that obstructs the access to, or use of any required emergencies or regular exit, or the use of the aisle between the crew and the passenger compartment, or located in a position that obscures any passenger's view of the "seat belt" or "no smoking" sign, or any required exit sign, unless an auxiliary sign or other approved means for proper notification of the passengers is provided.

(5) it is not stowed directly above seated occupants.

(6) for cargo only operations, paragraph (iii) (4) does not apply if the cargo is loaded so that at least one emergency or regular exit is available to provide all occupants of the aircraft a means of unobstructed exit from the aircraft if an emergency occurs.

(iv) Each passenger seat under which the baggage is stowed shall be fitted with a means to prevent articles of baggage stowed under it from sliding under crash impacts severe enough to induce injury to the occupants.

(v) When cargo is carried in cargo compartments that are designed to require the physical entry of a crewmember to extinguish any fire that may occur during flight, the cargo must be loaded so as to allow a crewmember to effectively reach all parts of the compartment with the contents of a hand fire extinguisher.

## 2.8 FATIGUE MANAGEMENT

*Note.— Guidance on the development and implementation of fatigue management regulations is contained in the* Manual for the Oversight of Fatigue Management Approaches *(Doc 9966).*

2.8.1 The CAAN has established regulations for the purpose of managing fatigue in Chapter 7. These regulations have been based upon scientific principles, knowledge and operational experience with the aim of ensuring that flight and cabin crew members are performing at an adequate level of alertness. Accordingly, the CAAN has established prescriptive regulations for flight time, flight duty period and duty period limitations and rest period requirements in Chapter 7.

2.8.2 The operator shall, in compliance with 2.8.1 and for the purposes of managing its fatigue-related safety risks, establish flight time, flight duty period, duty period limitations and rest period requirements that are within the prescriptive fatigue management regulations established in Chapter 7.

*Note.— Complying with the prescriptive fatigue management regulations does not relieve the operator of the responsibility to manage its risks, including fatigue-related risks, using its safety management system (SMS) in accordance with the provisions of Annex 19.*

2.8.3 The operator shall maintain records of flight time, flight duty periods, duty periods, and rest periods for all its flight and cabin crew members for a period of three months.

2.8.4 Where the operator complies with prescriptive fatigue management regulations in the provision of part or all of its services:

a) the operator shall familiarize those personnel involved in managing fatigue with their responsibilities and the principles of fatigue management;

b) the CAAN may approve, in exceptional circumstances, variations to these regulations on the basis of a risk assessment provided by the operator. Approved variations shall provide a level of safety equivalent to, or better than, that achieved through the prescriptive fatigue management regulations.

2.8.5 RESERVED

## 2.9 RESPONSIBILITIES OF AIR OPERATOR-HELICOPTERS

### 2.9.1 Crew Member Requirements

(a) No air carrier may assign a person as a flight crew member unless that person holds a valid license issued by the Director General.

(b) No air carrier shall operate an aircraft with less than the minimum flight crew specified in the Certificate of Airworthiness or the Aircraft Flight Manual.

(c) No air carrier shall operate an aircraft without a second in command if that aircraft has a passenger seating configuration, excluding any pilot seat of ten seats or more.

(d) No air carrier shall carry passengers and operate a single engine helicopter:

i) in IFR flight conditions,

ii) at night.

iii) for a published schedule flight.

(e) No air carrier shall operate a multi engine helicopter under IFR in an air transport operation unless the flight crew includes at least two pilots one of them shall be designated by the air carrier as pilot in command and the other as second in command.

(f) Unless the flight crew uses sufficient required oxygen during the flight, no person shall operate a helicopter when carrying passengers at an altitude above 10,000 feet above mean sea level.

(g) No air carrier shall let the pilots have an endorsement on more than two types of helicopters for commercial operations.

(h) No air carrier shall let the pilot have an endorsement on both aeroplanes and helicopters for commercial operations.

(i) No air carrier may use a pilot to act as pilot in command or second in command of a turbine engine operated rotorcraft and multi engine rotorcraft unless he holds a commercial pilot license with the classification of helicopter from an approved school of a contracting state.

### 2.9.2 Pilot-In-Command Qualification

(a) No air carrier may use a person to serve as pilot-in-command in commercial air transportation in any helicopter certificated for two-pilot operation unless that person holds an Airline Transport Pilot License with classification of helicopter and type rating.

(b) No air operator may use a pilot to act as Pilot-In-Command of a helicopter certificated for single pilot operation unless that pilot:

i) holds a valid commercial pilot license (CPL) with type rating;
ii) has at least 10 hours of flight time as Pilot-In-Command on that helicopter with an Instructor Pilot and 10 hours with Line Captain in the case of pilots with previous experience on similar type having flight experience of minimum of 1500 hours total of which 500 hours shall be as PIC;
iii) In the case of pilots not having experience as mentioned in (b) ii) above, he shall comply with the requirements of 2.9.3.1 1); and
iv)if the flight is to be operated under IFR condition, holds an instrument rating endorsed by CAAN, valid for type of helicopter.

(c) No air carrier may use a pilot to act as pilot in command of a helicopter certificated for two-pilot operations, unless that pilot;

i) holds a valid Airline Transport Pilot License with type rating;
ii) has at least 15 hours of flight time as pilot-in-command on that helicopter with an Instructor Pilot and 10 hours with Line Captain in the case of pilots with previous experience on similar type having flight experience of minimum of 1500 hours total of which 500 hours shall be as PIC in multi-engine helicopters;
iii) in the case of pilots not having experience as mentioned in (b) ii) above, he shall comply with the requirements of 2.9.3.1 2); and
iv) if the flight is to be operated under IFR condition, holds an instrument rating endorsed by CAAN, valid for the type of helicopter.

### 2.9.3 P-I-C Clearance (Helicopter)

2.9.3.1 After acquiring CAAN license, a pilot will not be designated as Pilot-In-Command, unless he has completed the experience in flight as specified below;

1) Helicopter with Single Pilot Operation

a) To act as a solo PIC for all the domestic airports and normal helipads at or below 10.000 ft. AMSL.

i) shall fly minimum of 75 hours on type as a PIC with Instructor Pilot;

ii) shall have minimum of 600 hours experience on turbine helicopters;

iii) PIC training consisting of 5 hours ground training which shall cover subjects like operations related Company Manuals, CAAN regulations, short review of technical/performance, Human Factors and at least 2 hours flight training which shall include items from the Proficiency Check form.

iv) must complete an oral assessment and check flight in presence of CAAN observer or DCP to his satisfaction.

b) To act as a solo PIC for all the helipads above 10,000 feet upto 17,000 feet above mean sea level and including landing in a congested area and difficult field with slope:

i) must have minimum of 1,000 hours of experience as PIC on Helicopter;

ii) must have completed a ground class of 5 hours including mountain flying in high altitudes

iii) must have completed a minimum of 5 hours of high altitude flight training above 10,000 feet; flight time en-route to and from the training area shall not be credited towards this training;

iv) must successfully complete an assessment conducted by an instructor pilot;

v) must complete a check flight in presence of CAAN observer or DCP to his satisfaction.

c) To act as a solo PIC for all the helipads above 17,000 feet mean sea level:

i) must have flown minimum 5 landings above 17,000 feet with instructor pilot;

ii) must successfully complete an assessment and be cleared by an instructor pilot or DCP.

2) Multi-engine Helicopter with Two Pilots Operations

a) To act as a PIC for all the domestic airports and normal helipads at or below 10,000 ft. AMSL, he shall fly minimum of 50 hours on type as a PIC with Instructor Pilot.

b) To act as a PIC for all the helipads above 10000 feet AMSL including landing in a confined area and difficult field with slope:

i) must have minimum of 200 total hours' experience as PIC with experience on all the helipads above 10000 ft. AMSL including landing in a congested area and difficult field with slope.

ii) must have completed a ground class of 5 hours including mountain flying in high altitudes and a minimum of 5 hours of high altitude training above 10,000 feet; flight time en-route to and from the training area shall not be credited towards this training;

Iii) must successfully complete an assessment conducted by an instructor pilot;

iv) must complete a check flight in presence of CAAN observer or DCP to his satisfaction

**2.9.3.2 Clearance procedure for foreign pilots**

(a) Foreign pilots with no previous flying experience in Nepal must first be assessed by an Instructor Pilot of the AOC holder;

(b) After receiving a Validation Certificate from CAAN, such foreign pilots mentioned in (a) and with no previous high altitude training, shall be limited to fly to helipads and aerodromes not exceeding 10,000 feet msl in elevation;

(c) Such pilots mentioned in (b) shall then be required to comply with the requirements of 2.9.3.1 b) and c) prior to being released for higher elevation helipads.

(d) Foreign pilots with previous high altitude training must first be assessed by an Instructor Pilot or DCP of the AOC holder and upon being found satisfactory, shall be permitted to fly above 10,000 feet or 17,000 feet MSL provided he/she complies with the requirements of 2.9.3.1 b) and c).

**2.9.4 Copilot Qualification**

(a) No air carrier may use a pilot to act as copilot of a helicopter under VFR, unless that person holds a commercial pilot license with appropriate category and class ratings and an appropriate type rating.

(b) No air carrier may use a pilot to act as copilot of an aircraft under IFR unless that person:

i) holds a valid pilot license with appropriate category and class ratings and an appropriate type rating.

ii) holds an instrument rating endorsed by CAAN, valid for the category, class and type of helicopter.

**2.9.5 Record of Flight Crew Licenses**

a) The holder of an Air Operator Certificate issued by the DG, CAAN shall maintain a record containing details of the licenses held by each of his flight crew members together with details of the ratings included in those licenses. He shall record details of the ground and flight training undertaken by his flight crew members together with the results of any proficiency checks and shall record the route and aerodrome qualifications (including High Altitude Helipads, Rooftop Helipads and Sling/Long Line operations clearance) of pilot-in-command.

b) In helicopter operation the record detail of qualification achieved progressively and qualification gained by each crew member on solo piloting to high altitude fields, fields of confined area, fields of confined and congested nature used by helicopters for landing.

*Note: for the purpose of this document, "High Altitude" helipads shall be considered those that are located above an elevation of 10,000 feet above mean sea level.*

c) Records shall be retained throughout the period of the employment of each flight crew member and for a further period of three months. Notification to CAAN of changes in employment of key operational personnel, is necessary.

## 2.10 PROVING FLIGHTS OF NEW HELICOPTER

2.10.1 An helicopter of a new type shall not be used to carry passengers on a commercial air transportation service until it has undergone proving tests under the supervision of, and in accordance with the requirements of the Director General.

2.10.2 In the case of major changes to a Helicopter previously in operation on commercial air transportation services, the Director General may require it to undergo such proving tests as he/she considers necessary.

## 2.11 DOCUMENTS OF EXPAT FLIGHT CREW

In the case of expat flight crew, all submitted documents must be in the English language or where it is in a language other than English, translated copies must be submitted from an authorized institution.

## 2.12 CONDITIONS REQUIRING CAAN INSPECTOR

The following activities shall be conducted under the monitoring of a CAAN Inspector or Designated Check Pilot:

a) solo PIC check flight
b) high altitude check flight
c) PPC of instructor pilot
d) initial sling/long line operations check flight
e) type conversion training check flight
f) PPC of a Designated Check Pilot
g) ground class monitoring

## 2.13 VALIDITY OF TRAININGS

The validity of the trainings or checks mentioned below shall be as follows:

a) Pilot Proficiency Checks (VFR and IFR) – 6 months
b) Type technical/performance ground recurrent trainings – 12 months
c) Crew Resource Management – 12 months

d) Safety Management System – 12 months
e) Emergency evacuation training/drills including Fire Fighting – 12 months
f) Safe Handling of Dangerous Goods by air – 24 months
g) Security Training – 12 months
h) High altitude currency – 12 months (every alternate PPC)
i) CFIT and monsoon briefing – 12 months
j) Rooftop helipad operations currency – 12 months
k) Sling load and/or long line operations currency – 12 months
m) communicable disease handling (patients and medical equipment) – 12 months

## 2.14 HOSPITAL HELIPAD OPERATIONS

2.14.1 Refer to CAAN Directive "Requirement for the operations of Hospital Helipads July 2016" for operations to Hospital helipads.

2.14.2 Refer to 4.4.8 "Note" of the Directive mentioned in 2.14.1 for the development of SOP for operations to such hospital helipads.

## 2.15 PHOTOGRAPHY/ VIDEOGRAPHY IN FLIGHT

2.15.1 No Flight Crew member or Cabin Crew member shall be permitted to use any portable or fixed devices for the purpose of photography or videography unless permitted by the Director General, CAAN. This shall include the occupant of the jump seat.

2.15.2 Bonafide passengers shall be permitted to take photos or videos during flight under the instructions of the Cabin Crew member or the Pilot In Command as per company rules and national Civil Aviation Regulations.

## 2.16 SUSPECTED COMMUNICABLE DISEASE

2.16.1 Air operators shall establish a procedure for the crew to evaluate a traveller with a suspected communicable disease, based on the presence of a fever and certain other signs or symptoms.

2.16.2 Air operators shall establish procedures for the Pilot-In-Command to report promptly to air traffic control (ATC) a suspected communicable disease, with transmission of the following information:
a) Aircraft identification;
b) Departure aerodrome;
c) Destination aerodrome;
d) Estimated time of arrival;
e) Number of persons on board;
f) Number of suspected case(s) on board; and
g) Nature of the public health risk, if known.

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# CHAPTER 3.

# HELICOPTER PERFORMANCE OPERATING LIMITATIONS

3.1 GENERAL

3.1.1 Helicopters shall be operated in accordance with a code of performance established by the State of the Operator, in compliance with the applicable Standards of this chapter.

*Note 1.— The code of performance reflects, for the conduct of operations, both the various phases of flight and the operational environment. The Helicopter Code of Performance Development Manual (Doc 10110) provides guidance to assist States in establishing a code of performance.*

*Note 2.— Concerning compliance with codes of performance, Chapter 1 of this Section requires operators to comply with the laws, regulations and procedures of the States in which their helicopters are operated. Article 11 of the Convention forms the basis for this requirement.*

3.1.2 In conditions where the safe continuation of flight is not ensured in the event of a critical engine failure, helicopter operations shall be conducted in conditions of weather and light, and over such routes and diversions, that permit a safe forced landing to be executed.

3.1.3 Notwithstanding the provisions of 3.1.2, the State of the Operator may, based on the result of a risk assessment, allow for variations without a safe forced landing to be included in the Code of Performance established in accordance with the provisions of 3.1.1. The risk assessment shall take into consideration at least the following:

a) the type and circumstances of the operation;
b) the area/terrain over which the operation is being conducted;
c) the probability of, and length of exposure to, a critical engine failure and the tolerability of such an event;
d) the procedures and systems for monitoring and maintaining the reliability of the engine(s);
e) the training and operational procedures to mitigate the consequences of the critical engine failure; and
f) helicopter equipment.

*Note.— Guidance on conduct of the risk assessment to allow for variations to the need for a safe forced landing, including mitigation strategies to reduce the risk, is contained in Doc 10110.*

3.1.4 Where the State of the Operator permits IMC operations in performance Class 3, such operations shall be conducted in accordance with the provisions of 3.4.

3.1.5 RESERVED

## 3.2 APPLICABLE TO HELICOPTERS CERTIFICATED IN ACCORDANCE WITH PART IV OF ANNEX 8

3.2.1 The Standards contained in 3.2.2 to 3.2.7 inclusive are applicable to the helicopters to which Part IV of Annex 8 is applicable.

*Note.— The following Standards do not include quantitative specifications comparable to those found in national airworthiness codes. In accordance with 3.1.1, they are to be supplemented by national requirements prepared by Contracting States.*

3.2.2 The level of performance defined by the appropriate parts of the code of performance referred to in 3.1.1 for the helicopters designated in 3.2.1 shall be consistent with the overall level embodied in the Standards of this chapter.

*Note.— Guidance on the level of performance intended by the Standards and Recommended Practices of this chapter is contained in Doc 10110.*

3.2.3 A helicopter shall be operated in compliance with the terms of its certificate of airworthiness and within the approved operating limitations contained in its flight manual.

3.2.4 The State of the Operator shall take such precautions as are reasonably possible to ensure that the general level of safety contemplated by these provisions is maintained under all expected operating conditions, including those not covered specifically by the provisions of this chapter.

3.2.5 A flight shall not be commenced unless the performance information provided in the flight manual indicates that the Standards of 3.2.6 and 3.2.7 can be complied with for the flight to be undertaken.

3.2.6 In applying the Standards of this chapter, account shall be taken of all factors that significantly affect the performance of the helicopter (such as: mass, operating procedures, the pressure-altitude appropriate to the elevation of the operating site, temperature, wind and condition of the surface). Such factors shall be taken into account directly as operational parameters or indirectly by means of allowances or margins, which may be provided in the scheduling of performance data or in the code of performance in accordance with which the helicopter is being operated.

3.2.7 Mass limitations

a) The mass of the helicopter at the start of take-off shall not exceed the mass at which the code of performance referred to in 3.1.1 is complied with, allowing for expected reductions in mass as the flight proceeds and for such fuel jettisoning as is appropriate.

b) In no case shall the mass at the start of take-off exceed the maximum take-off mass specified in the helicopter flight manual taking into account the factors specified in 3.2.6.

c) In no case shall the estimated mass for the expected time of landing at the destination and at any alternate exceed the maximum landing mass specified in the helicopter flight manual taking into account the factors specified in 3.2.6.

d) In no case shall the mass at the start of take-off, or at the expected time of landing at the destination and at any alternate, exceed the relevant maximum mass at which compliance has been demonstrated with the applicable noise certification Standards in Annex 16, Volume I unless otherwise authorized, in exceptional circumstances for a certain operating site where there is no noise disturbance problem, by the competent authority of the State in which the operating site is situated.

*3.2.7.1 Take-off and initial climb phase*

3.2.7.1.1 *Operations in performance Class 1.* The helicopter shall be able, in the event of the failure of the critical engine being recognized at or before the take-off decision point, to discontinue the take-off and stop within the rejected take-off area available or, in the event of the failure of the critical engine being recognized at or after the take-off decision point, to continue the take-off, clearing all obstacles along the flight path by an adequate margin until the helicopter is in a position to comply with 3.2.7.2.1.

3.2.7.1.2 *Operations in performance Class 2.* The helicopter shall be able, in the event of the failure of the critical engine at any time after reaching DPATO, to continue the take-off, clearing all obstacles along the flight path by an adequate margin until the helicopter is in a position to comply with 3.2.7.2.1. Before the DPATO, failure of the critical engine may cause the helicopter to force-land; therefore the conditions stated in 3.1.2 shall apply.

3.2.7.1.3 *Operations in performance Class 3.* At any point of the flight path, failure of an engine will cause the helicopter to force-land; therefore, the conditions stated in 3.1.2 shall apply.

*3.2.7.2 En-route phase*

3.2.7.2.1 *Operations in performance Classes 1 and 2.* The helicopter shall be able, in the event of the failure of the critical engine at any point in the en-route phase, to continue the flight to a site at which the conditions of 3.2.7.3.1 for operations in performance Class 1, or the conditions of 3.2.7.3.2 for operations in performance Class 2, can be met without flying below the appropriate minimum flight altitude at any point.

*Note.— When the en-route phase is conducted over a hostile environment and the diversion time to an alternate would exceed two hours, it is recommended that the State of the Operator assess the risks associated with a second engine failure.*

3.2.7.2.2 *Operations in performance Class 3.* The helicopter shall be able, with all engines operating, to continue along its intended route or planned diversions without flying at any point below the appropriate minimum flight altitude. At any point of the flight path, failure of an engine will cause the helicopter to force-land; therefore, the conditions stated in 3.1.2 shall apply.

3.2.7.3 *Approach and landing phase*

3.2.7.3.1 *Operations in performance Class 1.* In the event of the failure of the critical engine being recognized at any point during the approach and landing phase, before the landing decision point, the helicopter shall, at the destination and at any alternate, after clearing all obstacles in the approach

path, be able to land and stop within the landing distance available or to perform a balked landing and clear all obstacles in the flight path by an adequate margin equivalent to that specified in 3.2.7.1.1. In case of the failure occurring after the landing decision point, the helicopter shall be able to land and stop within the landing distance available.

3.2.7.3.2 *Operations in performance Class 2*. In the event of the failure of the critical engine before the DPBL, the helicopter shall, at the destination and at any alternate, after clearing all obstacles in the approach path, be able either to land and stop within the landing distance available or to perform a balked landing and clear all obstacles in the flight path by an adequate margin equivalent to that specified in 3.2.7.1.2. After the DPBL, failure of an engine may cause the helicopter to force-land; therefore, the conditions stated in 3.1.2 shall apply.

3.2.7.3.3 *Operations in performance Class 3.* At any point of the flight path, failure of an engine will cause the helicopter to force-land; therefore, the conditions stated in 3.1.2 shall apply.

## 3.3 OBSTACLE DATA

The operator shall use available obstacle data to develop procedures to comply with the take-off, initial climb, approach and landing phases detailed in the code of performance established by the State of the Operator.

## 3.4 ADDITIONAL REQUIREMENTS FOR OPERATIONS OF HELICOPTERS IN PERFORMANCE CLASS 3 IN IMC, EXCEPT SPECIAL VFR FLIGHTS

RESERVED

3.5 RESERVED

## 3.6 LOADING OF HELICOPTER

3.6.1 Before the commencement of a public transport flight, the operator, or the person in charge of the loading of the aircraft or the pilot-in-command, shall prepare load and trim sheets that shall contain:

i) the registration mark of the aircraft to which the load and trim sheets relate;
ii) particulars of the intended flight;
iii) the total mass of the aircraft as loaded for that flight;
iv) the mass of several items from which the total mass of the aircraft has been calculated including, in particular, the mass of the aircraft prepared for service and the respective total mass of the crew (unless included in the mass of the aircraft prepared for service), passengers, baggage, and cargo intended to be carried on the flight;
v) the manner in which the load is distributed and the resulting position of the centre of gravity of the aircraft;

3.6.2 Load and trim sheets shall be signed by the Operator, or the person(s) identified by the Operator as responsible for dispatching the aircraft who is duly trained and certified, as certifying that it has been loaded in accordance with the instructions issued by the operator and approved by the DG, CAAN and must be verified and signed by PIC. Such authorized personnel shall include his/her name, signature and license number.

3.6.3 For the purpose of calculating the total mass of the aircraft, the respective total mass of the passengers and crew entered in the load and trim sheets shall be computed from the actual mass of each person, and for that purpose, each person shall be separately weighed for aircraft carrying up to six passengers. For aircraft carrying seven or more passengers refer to Flight Operations Directive No. 08.

3.6.4 An Air Operator shall determine the weights to be used for passengers in its Operations Manual. Operators shall define weights for "adult male, adult female, child and infant" passengers; where 'adult' means a person older than 12 years and 'child' means between 02 and 12 years and 'infant' means below 02 years of age.

3.6.5 An Air Operator shall in addition to the passenger weights, also determine the weight of hand baggage, if so permitted. Such determined hand baggage value shall be clearly defined in the Operations Manual.

# CHAPTER 4

# HELICOPTER INSTRUMENTS, EQUIPMENT, AND FLIGHT DOCUMENTS

*Note. — Specifications for the provision of helicopter communication and navigation equipment are contained in Chapter 5.*

## 4.1 GENERAL

4.1.1 An operator shall ensure that, in addition to the minimum equipment necessary for the issuance of a Certificate of Airworthiness, the instruments, equipment and flight documents prescribed in the following paragraphs shall be installed or carried, as appropriate, in helicopters according to the helicopter used and to the circumstances under which the flight is to be conducted. The prescribed instruments and equipment, including their installation, shall be approved or accepted by the DG, CAAN.

4.1.2 A helicopter shall carry a certified true copy of the Air Operator Certificate specified in 2.2.1, and a copy of the operations specifications relevant to the helicopter type, issued in conjunction with the certificate. When the certificate and the associated operations specifications are issued in a language other than English, an English translation shall be included.

*Note. — Provisions for the content of the Air Operator Certificate and its associated operations specifications are contained in Appendix 5 of the Air Operator Certificate Requirements (AOCR).*

4.1.3 Provided the helicopter's manufacturer has issued a Master Minimum Equipment List, the operator may include in the Operations Manual a Minimum Equipment List (MEL), approved by the DG, CAAN which will enable the Pilot-In-Command to determine whether a flight may be commenced or continued from any intermediate stop should any instrument, equipment or systems become inoperative. Where Nepal is not the State of Registry, the Air Operator shall ensure that the MEL does not affect the helicopter's compliance with the airworthiness requirements applicable in the State of Registry.

*Note. — Attachment C contains guidance on the Minimum Equipment List.*

4.1.4 The operator shall make available to operations staff and crew members an aircraft operating manual, for each aircraft type operated, containing the normal, abnormal and emergency procedures relating to the operation of the aircraft. The manual shall include details of the aircraft systems and of the checklists to be used. The design of the manual

shall observe Human Factors principles. The manual shall be easily accessible to the flight crew during all flight operations.

*Note. — Guidance material on the application of Human Factors principles can be found in the* Human Factors Training Manual *(Doc 9683).*

### 4.1.5 Helicopter operated under an Article 83 bis agreement

*Note.— Guidance concerning the transfer of responsibilities by the State of Registry to the State of the Operator in accordance with Article 83 bis is contained in the* Manual on the Implementation of Article 83 bis of the Convention on International Civil Aviation (Doc 10059).

4.1.5.1 A helicopter, when operating under an Article 83 bis agreement entered into between the State of Registry and the State of the Operator, shall carry a certified true copy of the agreement summary, in either an electronic or hard copy format. When the summary is issued in a language other than English, an English translation shall be included.

*Note.— Guidance regarding the agreement summary is contained in Doc 10059.*

4.1.5.2 The agreement summary of an Article 83 bis agreement shall be accessible to a civil aviation safety inspector, in determining which functions and duties are transferred by the State of Registry to the State of the Operator under the agreement, when conducting surveillance activities such as ramp checks.

*Note.— Guidance for the civil aviation safety inspector conducting an inspection of an aeroplane operated under an Article 83 bis agreement is contained in the Manual of Procedures for Operations Inspection, Certification and Continued Surveillance (Doc 8335).*

4.1.5.3 The agreement summary shall be transmitted to ICAO together with the Article 83 bis Agreement for registration with the ICAO Council by the State of Registry or the State of the Operator.

*Note.— The agreement summary transmitted with the Article 83 bis agreement registered with the ICAO Council contains the list of all aircraft affected by the agreement. However, the certified true copy to be carried on board as per 4.1.5.1. will need to list only the specific aircraft carrying the copy.*

4.1.5.4 RESERVED

## 4.2 ALL HELICOPTERS ON ALL FLIGHTS

4.2.1 A helicopter shall be equipped with instruments that will enable the flight crew to control the flight path of the helicopter, carry out any required procedural manoeuvres and observe the operating limitations of the helicopter in the expected operating conditions.

4.2.2 A helicopter shall be equipped with:

a) accessible and adequate medical supplies;

Medical supplies should comprise of:

1) a first-aid kit; and

2) for helicopters required to carry cabin crew as part of the operating crew, a Universal Precaution Kit, for the use of cabin crew in managing incidents of ill health associated with a case of suspected communicable disease, or in the case of illness involving contact with body fluids.

*Note. — Guidance on the contents of first-aid and universal precaution kits is given in Appendix 7.*

b) portable fire extinguishers of a type which, when discharged, will not cause dangerous contamination of the air within the helicopter. At least one shall be located in:

1) the pilot's compartment; and
2) each passenger compartment that is separate from the pilot's compartment and that is not readily accessible to the flight crew.

*Note 1. — Any portable fire extinguisher so fitted in accordance with the certificate of airworthiness of the helicopter may count as one prescribed.*

*Note 2. — Refer to 4.2.2.1 for fire extinguishing agents.*

c) 1) a seat or berth for each person over two years;
2) a seat belt for each seat and restraining belts for each berth; and
3) a safety harness for each flight crew seat. The safety harness for each pilot seat shall incorporate a device which will automatically restrain the occupant's torso in the event of rapid deceleration.

d) means of ensuring that the following information and instructions are conveyed to passengers:

1) when seat belts or harnesses are to be fastened;
2) when and how oxygen equipment is to be used if the carriage of oxygen is required;
3) restrictions on smoking;
4) location and use of life jackets or equivalent individual flotation devices where their carriage is required; and
5) location and method of opening emergency exits; and

e) if fuses are used, spare electrical fuses of appropriate ratings for replacement of those accessible in flight.

4.2.2.1 Any agent used in a built-in fire extinguisher for each lavatory disposal receptacle for towels, paper or waste in a helicopter for which the individual certificate of airworthiness is first issued on or after 31 December 2011 and any extinguishing agent used in a portable fire extinguisher in a helicopter for which the individual certificate of airworthiness is first issued on or after 31 December 2018 shall:

a) meet the applicable minimum performance requirements of the State of Registry; and

b) not be of a type listed in the 1987 *Montreal Protocol on Substances that Deplete the Ozone Layer* as it appears in the Eighth Edition of the *Handbook for the Montreal Protocol on Substances that Deplete the Ozone La*yer, Annex A, Group II.

*Note. — Information concerning extinguishing agents is contained in the* UNEP Halons Technical Options Committee Technical Note No. 1 – New Technology Halon Alternatives *and* FAA Report No. DOT/FAA/AR-99-63, Options to the Use of Halons for Aircraft Fire Suppression Systems.

4.2.3 A helicopter shall carry:

a) the operations manual prescribed in 2.2.2, or those parts of it that pertain to flight operations;

b) the Helicopter Flight Manual for the helicopter, or other documents containing performance data required for the application of Chapter 3 and any other information necessary for the operation of the helicopter within the terms of its Certificate of Airworthiness, unless these data are available in the Operations Manual; and

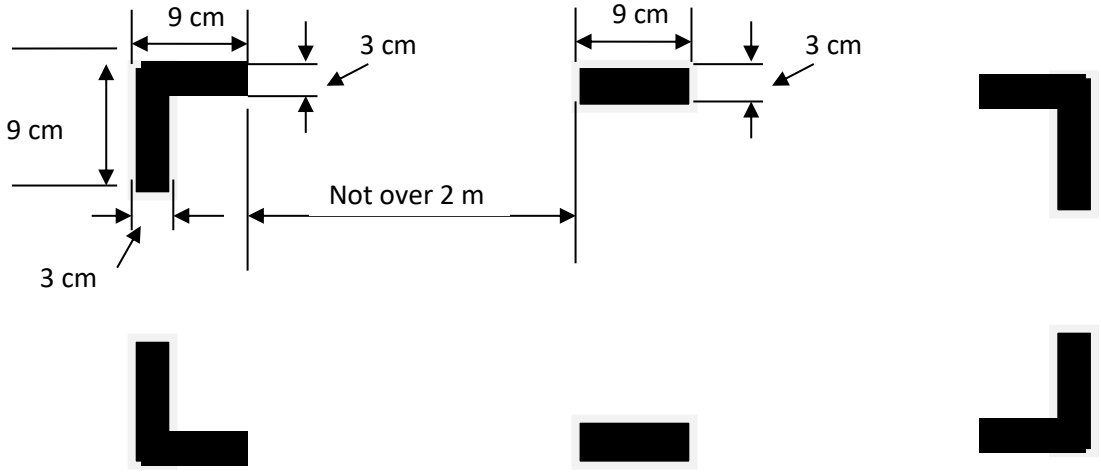
c) current and suitable charts to cover the route of the proposed flight and any route along which it is reasonable to expect that the flight may be diverted.

**4.2.4 Marking of break-in points**

4.2.4.1 If areas of the fuselage suitable for break-in by rescue crews in an emergency are marked on a helicopter, such areas shall be marked as shown below (see figure following). The colour of the markings shall be red or yellow, and if necessary they shall be outlined in white to contrast with the background.

4.2.4.2 If the corner markings are more than 2 m apart, intermediate lines 9 cm × 3 cm shall be inserted so that there is no more than 2 m between adjacent markings.

*Note.— This Requirement does not require any helicopter to have break-in areas.*




MARKING OF BREAK-IN POINTS (see 4.2.4)

## 4.3 FLIGHT RECORDERS

*Note 1. — Crash protected flight recorders comprise one or more of the following systems:*
*- a flight data recorder (FDR),*
*- a cockpit voice recorder (CVR),*
*- an airborne image recorder (AIR)*
*- a data link recorder (DLR).*

*As per Appendix 4, Image and data link information may be recorded on either the CVR or the FDR.*

*Note 2. — Combination recorders (FDR/CVR) may be used to meet the flight recorder equipage requirements in this FOR (H).*

*Note 3.— Detailed guidance on flight recorders is contained in Appendix 4.*

*Note 4.— Lightweight flight recorders comprise one or more of the following systems:*
- *an aircraft data recording system (ADRS),*
- *a cockpit audio recording system (CARS),*
- *an airborne image recording system (AIRS)*
- *a data link recording system (DLRS).*

*As per Appendix 4, image and data link information may be recorded on either the CARS or the ADRS.*

*Note 5. — For helicopters for which the application for type certification is submitted to a Contracting State before1 January 2016, specifications applicable to flight recorders may be found in EUROCAE ED-112, ED-56A, ED-55, Minimum Operational Performance Specifications (MOPS), or earlier equivalent documents.*

*Note 6. — For helicopters for which the application for type certification is submitted to a Contracting State on or after 1 January 2016, specifications applicable to flight recorders may be found in EUROCAE ED-112A, Minimum Operational Performance Specification (MOPS), or equivalent documents.*

*Note 7. – Specifications applicable to lightweight flight recorders may be found in EUROCAE ED-155. Minimum Operational Performance Specifications (MOPS) or equivalent documents.*

*Note 8. – Section II Chapter 1 contains requirements regarding the use of voice, image and/or data recordings and transcripts.*

**4.3.1 Flight data recorders and aircraft data recording systems**

*Note 1. —Parameters to be recorded are listed in Table A4-1 of Appendix 4.*

4.3.1.1 *Applicability*

4.3.1.1.1 All helicopters of a maximum certificated take-off mass of over 3 175 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2016 shall be equipped with an FDR which shall record at least the first 48 parameters listed in Table A4-1 of Appendix 4.

4.3.1.1.2 All helicopters of a maximum certificated take-off mass of over 7 000 kg, or having a passenger seating configuration of more than nineteen, for which the individual certificate of airworthiness is first issued on or after 1 January 1989 shall be equipped with an FDR which shall record at least the first 30 parameters listed in Table A4-1 of Appendix 4.

4.3.1.1.3 RESERVED

4.3.1.1.4 All turbine-engined helicopters of a maximum certificated take-off mass of over 2 250 kg, up to and including 3 175 kg for which the application for type certification was submitted to a Contracting State on or after 1 January 2018 shall be equipped with:

a) an FDR which shall record at least the first 48 parameters listed in Table A4-1 of Appendix 4; or

b) a Class C AIR or AIRS which shall record at least the flight path and speed parameters displayed to the pilot(s), as defined in Appendix 4, Table A4-3; or

c) an ADRS which shall record the first 7 parameters listed in Table A4-3 of Appendix 4.

*Note.— The "application for type certification was submitted to a Contracting State" refers to the date of application of the original "Type Certificate" for the helicopter type, not the date of certification of particular helicopter variants or derivative models.*

4.3.1.1.5 RESERVED

4.3.1.1.6 All helicopters of a maximum certificated take-off mass of over 3 175 kg for which the application for type certificate is submitted to a Contracting State on or after 1 January 2023 shall be equipped with an FDR capable of recording at least the first 53 parameters listed in Table A4-1 of Appendix 4.

4.3.1.1.7 RESERVED

4.3.1.2 *Recording technology*

FDRs, ADRS, AIRs or AIRS shall not use engraving metal foil, frequency modulation (FM), photographic film or magnetic tape.

4.3.1.3 *Duration*

All FDRs shall retain the information recorded during at least the last 10 hours of their operation.

**4.3.2 COCKPIT VOICE RECORDERS AND COCKPIT AUDIO RECORDING SYSTEMS**

4.3.2.1 *Applicability*

4.3.2.1.1 All helicopters of a maximum certificated take-off mass of over 7 000 kg shall be equipped with a CVR. For helicopters not equipped with an FDR, at least main rotor speed shall be recorded on the CVR.

4.3.2.1.2 RESERVED

4.3.2.2 *Recording technology*

CVRs and CARS shall not use magnetic tape or wire.

4.3.2.3 *Duration*

All helicopters required to be equipped with a CVR, shall be equipped with a CVR which shall retain the information recorded during at least the last two hours of its operation.

**4.3.3 Data link recorders**

4.3.3.1 *Applicability*

4.3.3.1.1 All helicopters for which the individual certificate of airworthiness is first issued on or after 1 January 2016, which use any of the data link communications applications referred to in 5.1.2 of Appendix 4 and are required to carry a CVR, shall record the data link communications messages on a crash-protected flight recorder.

4.3.3.1.2 All helicopters for which the individual certificate of airworthiness was first issued before 1 January 2016 that are required to carry a CVR , and are modified on or after 1 January 2016 to use any of the data link communications applications referred to in 5.1.2 of Appendix 4, shall record the data link communications messages on a crash-protected flight recorder unless

the installed data link communications equipment is compliant with a type design or aircraft modification first approved prior to 1 January 2016.

*Note 1.— Refer to Table G-4 in Attachment G of Annex 6 Part III for examples of data link communication recording requirements.*

*Note 2.— A Class B AIR could be a means for recording data link communications applications messages to and from the helicopters where it is not practical or is prohibitively expensive to record those data link communications applications messages on FDR or CVR.*

*Note 3.— The "aircraft modifications" refer to modifications to install the data link communications equipment on the aircraft (e.g. structural, wiring).*

4.3.3.1.3 RESERVED

4.3.3.2 *Duration*

The minimum recording duration shall be equal to the duration of the CVR.

4.3.3.3 *Correlation*

Data link recording shall be able to be correlated to the recorded cockpit audio.

**4.3.4 Flight recorders — general**

**4.3.4.1 *Construction and installation***

Flight recorders shall be constructed, located and installed so as to provide maximum practical protection for the recordings in order that the recorded information may be preserved, recovered and transcribed. Flight recorders shall meet the prescribed crashworthiness and fire protection specifications.

**4.3.4.2 *Operation***

4.3.4.2.1 Flight recorders shall not be switched off during flight time.

4.3.4.2.2 To preserve flight recorder records, flight recorders shall be deactivated upon completion of flight time following an accident or incident. The flight recorders shall not be reactivated before their disposition as determined in accordance with Annex 13.

*Note 1. — The need for removal of the flight recorder records from the aircraft will be determined by the investigation authority in the State conducting the investigation with due regard to the seriousness of an occurrence and the circumstances, including the impact on the operation.*

*Note 2. — The operator's responsibilities regarding the retention of flight recorder records are contained in Section II Chapter 9, 9.6.*

**4.3.4.3 *Continued serviceability***

Operational checks and evaluations of recordings from the flight recorder systems shall be conducted to ensure the continued serviceability of the recorders.

*Note. — Procedures for the inspections of the flight recorder systems are given in Appendix 4.*

**4.3.4.4 Flight recorders electronic documentation**

RESERVED

**4.3.4.5 Preservation of Flight Recorder Data for Accident or Incident Investigation**

The holder of an Air Operator Certificate issued by the Director General shall retain the records produced by a flight recorder unless demanded, for inspection by the Director General as he may require. The holder shall keep such records in safe custody until instructed by the Director General to release them for the purpose of incident or accident investigation.

## 4.4 INSTRUMENTS AND EQUIPMENT FOR FLIGHTS OPERATED UNDER VFR AND IFR — BY DAY AND NIGHT

*Note. — The flight instruments requirements in 4.4.1, 4.4.2 and 4.4.3 may be met by combinations of instruments or by electronic displays.*

4.4.1 All helicopters when operating in accordance with VFR by day shall be equipped with:

a) a magnetic compass;
b) an accurate timepiece indicating the time in hours, minutes and seconds;
c) a sensitive pressure altimeter;
d) an airspeed indicator; and
e) such additional instruments or equipment as may be prescribed by the DG, CAAN

4.4.2 Helicopters are not permitted to be operated at night for commercial purposes.

4.4.2.1 RESERVED

4.4.3 All helicopters when operating in accordance with IFR, or when the helicopter cannot be maintained in a desired attitude without reference to one or more flight instruments, shall be equipped with:

a) a magnetic compass;
b) an accurate timepiece indicating the time in hours, minutes and seconds;
c) two sensitive pressure altimeters;
d) an airspeed indicating system with means of preventing malfunctioning due to either condensation or icing;
e) a slip indicator;
f) an attitude indicator (artificial horizon) for each required pilot and one additional attitude indicator;

g) a heading indicator (directional gyroscope);
h) a means of indicating whether the power supply to the gyroscope instrument is adequate;
i) a means of indicating on the flight deck the outside air temperature;
j) a rate of climb and descent indicator;
k) a stabilization system, unless it has been demonstrated to the satisfaction of the certificating authority that the helicopter possesses, by nature of its design, adequate stability without such a system;
l) such additional instruments or equipment as may be prescribed by the DG, CAAN; and
m) if operated at night, the lights specified as below:

(i) the lights required by CAR 2 for aircraft in flight or operating on the movement area of a heliport;

*Note. — The general characteristics of lights are specified in Annex 8.*

(ii) two landing lights; one of which shall be trainable at least in the vertical plane.

(iii) illumination for all instruments and equipment that are essential for the safe operation of the helicopter that are used by the flight crew;

(iv) lights in all passenger compartments; and

(v) a flashlight for each crew member station

4.4.3.1 All helicopters when operating in accordance with IFR shall be fitted with an emergency power supply, independent of the main electrical generating system, for the purpose of operating and illuminating, for a minimum period of 30 minutes, an attitude indicating instrument (artificial horizon), clearly visible to the pilot-in-command. The emergency power supply shall be automatically operative after the total failure of the main electrical generating system and clear indication shall be given on the instrument panel that the attitude indicator(s) is being operated by emergency power.

4.4.4 A helicopter when operating in accordance with IFR and which has a maximum certificated take-off mass in excess of 3,175 kg or a maximum passenger seating configuration of more than 9 should be equipped with a ground proximity warning system which has a forward-looking terrain avoidance function.

## 4.5 ALL HELICOPTERS ON FLIGHTS OVER WATER

### 4.5.1 Means of flotation

All helicopters intended to be flown over water shall be fitted with a permanent or rapidly deployable means of flotation so as to ensure a safe ditching of the helicopter when:

a) engaged in offshore operations, or other overwater operations as prescribed by the DG, CAAN; or

b) flying over water in a hostile environment at a distance from land corresponding to more than 10 minutes at normal cruise speed when operating in performance Class 1 or 2; or

*Note. — When operating in a hostile environment, a safe ditching requires a helicopter to be designed for landing on water or certificated in accordance with ditching provisions.*

c) flying over water in a non-hostile environment at a distance from land specified by the appropriate authority of the responsible State when operating in performance Class 1; or

*Note. — When considering the distance beyond which flotation equipment is required, consideration shall be taken of the certification standard of the helicopter.*

d) flying over water beyond auto rotational or safe forced landing distance from land when operating in performance Class 3.

**4.5.2 Emergency equipment**

4.5.2.1 Helicopters operating in performance Class 1 or 2 and operating in accordance with the provisions of 4.5.1 shall be equipped with:

a) one life jacket, or equivalent individual flotation device, for each person on board, stowed in a position easily accessible from the seat or berth of the person for whose use it is provided. For offshore operations the life jacket shall be worn constantly unless the occupant is wearing an integrated survival suit that includes the functionality of the lifejacket;

b) life-saving rafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency, provided with such life-saving equipment including means of sustaining life as is appropriate to the flight to be undertaken. When two life rafts are fitted, each shall be able to carry all occupants in the overload state; and

c) equipment for making the pyrotechnical distress signals described in CAR 2.

*Note: The life-raft overload state has a design safety margin of 1.5 times the maximum capacity.*

4.5.2.2 Helicopters operating in performance Class 3 when operating beyond auto rotational distance from land but within a distance from land specified by the DG, CAAN shall be equipped with one lifejacket, or equivalent individual flotation device, for each person on board, stowed in a position easily accessible from the seat or berth of the person for whose use it is provided.

*Note. — When determining the distance from land referred to in 4.5.2.2, consideration should be given to environmental conditions and the availability of search and rescue facilities.*

4.5.2.2.1 For offshore operations, when operating beyond auto rotational distance from land, the life jacket shall be worn unless the occupant is wearing an integrated survival suit that includes the functionality of the life jacket**.**

4.5.2.3 Helicopters operating in performance Class 3 when operating beyond the distance specified in 4.5.2.2 shall be equipped as in 4.5.2.1.

4.5.2.4 In the case of helicopters operating in performance Class 2 or 3, when taking off or landing at a heliport where, in the opinion of the DG, CAAN, the take-off or approach path is so disposed over water that in the event of a mishap there would be likelihood of a ditching, at least the equipment required in 4.5.2.1 a) shall be carried.

4.5.2.5 Each life jacket and equivalent individual flotation device, when carried in accordance with 4.5, shall be equipped with a means of electric illumination for the purpose of facilitating the location of persons.

4.5.2.6 RESERVED
4.5.2.7 RESERVED
4.5.2.8 RESERVED

### 4.5.3 All helicopters on flights over designated sea areas

4.5.3.1 Helicopters, when operating over sea areas over which search and rescue would be especially difficult, shall be equipped with life-saving equipment (including means of sustaining life) as may be appropriate to the area overflown.

4.5.3.2 RESERVED

## 4.6 ALL HELICOPTERS ON FLIGHTS OVER DESIGNATED LAND AREAS

Helicopters, when operated across land areas over which search and rescue would be especially difficult, shall be equipped with such signalling devices and life-saving equipment (including means of sustaining life) as may be appropriate to the area overflown.

## 4.7 EMERGENCY LOCATOR TRANSMITTER (ELT)

4.7.1 From 1 July 2008, all helicopters operating in performance Class 1 and 2 shall be equipped with at least one automatic ELT and, when operating on flights over water as described in 4.5.1 a), with at least one automatic ELT and one ELT(S) in a raft or life jacket.

4.7.2 From 1 July 2008, all helicopters operating in performance Class 3 shall be equipped with at least one automatic ELT and, when operating on flights over water as described in 4.5.1 b), with at least one automatic ELT and one ELT(S) in a raft or life jacket.

4.7.3 ELT equipment carried to satisfy the requirements of 4.7.1 and 4.7.2 shall operate in accordance with the relevant provisions of Annex 10, Volume III.

*Note. —*

*a) The judicious choice of numbers of ELTs, their type and placement on aircraft and associated floatable life support systems will ensure the greatest chance of ELT activation in the event of an accident for aircraft operating over water or land, including areas especially difficult for search and rescue. Placement of transmitter units is a vital factor in ensuring optimal crash and fire protection.*

*b) The placement of the control and switching devices (activation monitors) of automatic fixed ELTs and their associated operational procedures will also take into consideration the need for rapid detection of inadvertent activation and convenient manual switching by crew members.*

## 4.8 ALL HELICOPTERS ON HIGH ALTITUDE FLIGHTS

*Refer to para 2.3.8 Oxygen Supply for requirements on supply of oxygen for high altitude flights.*

## 4.9 ALL HELICOPTERS IN ICING CONDITIONS

All helicopters shall be equipped with suitable anti-icing and/or de-icing devices when operated in circumstances in which icing conditions are reported to exist or are expected to be encountered.

## 4.10 HELICOPTERS WHEN CARRYING PASSENGERS — SIGNIFICANT-WEATHER DETECTION

RESERVED

## 4.11 ALL HELICOPTERS REQUIRED TO COMPLY WITH THE NOISE CERTIFICATION STANDARDS IN ANNEX 16, VOLUME I

All helicopters required to comply with the noise certification Standards of Annex 16, Volume I, shall carry a document attesting noise certification. When the document, or a suitable statement attesting noise certification as contained in another document approved by the State of Registry, is issued in a language other than English, it shall include an English translation.

*Note 1.— The attestation may be contained in any document, carried on board, approved by the State of Registry in accordance with the relevant provisions of Annex 16, Volume I.*

*Note 2.— The various noise certification Standards of Annex 16, Volume I, which are applicable to helicopters are determined according to the date of application for a type certificate, or the date of acceptance of an application under an equivalent prescribed procedure by the certificating authority. Some helicopters are not required to comply with any noise certification Standard. For details see Annex 16, Volume I, Part II, Chapters 8 and 11.*

## 4.12 HELICOPTERS CARRYING PASSENGERS — CABIN CREW SEATS

4.12.1 All helicopters shall be equipped with a forward or rearward facing (within 15 degrees of the longitudinal axis of the helicopter) seat, fitted with a safety harness for the use of each cabin crew member required to satisfy the intent of 10.1 in respect of emergency evacuation.

*Note 1. — In accordance with the provisions of 4.2.2 c) 1), a seat and seat belt shall be provided for the use of each additional cabin crew member.*

*Note 2. — Safety harness includes shoulder straps and a seat belt which may be used independently.*

4.12.2 Cabin crew seats shall be located near floor level and other emergency exits as required by the DG, CAAN or the State of Registry for emergency evacuation.

## 4.13 HELICOPTERS REQUIRED TO BE EQUIPPED WITH A PRESSURE-ALTITUDE REPORTING TRANSPONDER

Except as may be otherwise authorized by the appropriate authority, all helicopters shall be equipped with a pressure-altitude reporting transponder which operates in accordance with the provisions of Annex 10, Volume IV.

*Note. — This provision is intended to support the effectiveness of ACAS as well as to improve the effectiveness of air traffic services. The intent is also for aircraft not equipped with pressure-altitude reporting transponders to be operated so as not to share airspace used by aircraft equipped with airborne collision avoidance systems.*

## 4.14 MICROPHONES

All flight crew members required to be on flight deck duty shall communicate through boom or throat microphones.

## 4.15 VIBRATION HEALTH MONITORING SYSTEM –

RESERVED

## 4.16 HELICOPTERS EQUIPPED WITH AUTOMATIC LANDING SYSTEMS, A HEAD-UP DISPLAY (HUD) OR EQUIVALENT DISPLAYS, ENHANCED VISION SYSTEMS (EVS), SYNTHETIC VISION SYSTEMS (SVS) AND/OR COMBINED VISION SYSTEMS (CVS)

4.16.1 Where helicopters are equipped with automatic landing systems, HUD or equivalent displays, EVS, SVS or CVS, or any combination of those systems into a hybrid system, the use of such systems for the safe operation of a helicopter shall require prior approval from the DG, CAAN.

*Note 1. — Information regarding a HUD or equivalent displays, including references to RTCA and EUROCAE documents, is contained in the* Manual of All-Weather Operations *(Doc 9365).*

*Note 2. — Automatic landing system — helicopter is an automatic approach using airborne systems which provide automatic control of the flight path, to a point aligned with the landing surface, from which the pilot can transition to a safe landing by means of natural vision without the use of automatic control.*

4.16.2 In approving the operational use of automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS, it shall be ensured that:

a) the equipment meets the appropriate airworthiness certification requirements;

b) the operator has carried out a safety risk assessment of the operations supported by the automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS; and

c) the operator has established and documented the procedures for the use of, and training requirements for, automatic landing systems, a HUD or equivalent displays, EVS, SVS or CVS.

*Note 1. — Guidance on safety risk assessments is contained in the* Safety Management Manual (SMM) *(Doc 9859).*

*Note 2. — Guidance on operational approvals is contained in Attachment G.*

## 4.17 Electronic flight bags (EFBs)

*Note. — Guidance on EFB equipment, functions and operational approval is contained in the* Manual on Electronic Flight Bags *(Doc 10020).*

**4.17.1** *EFB equipment*

Where portable EFBs are used on board a helicopter, the operator shall ensure that they do not affect the performance of the helicopter systems, equipment or the ability to operate the helicopter.

**4.17.2** *EFB functions*

4.17.2.1 Where EFBs are used on board a helicopter the operator shall:

a) assess the safety risk(s) associated with each EFB function;

b) establish and document the procedures for the use of, and training requirements for, the device and each EFB function; and

c) ensure that, in the event of an EFB failure, sufficient information is readily available to the flight crew for the flight to be conducted safely.

*Note. — Guidance on safety risk assessments is contained in the* Safety Management Manual (SMM) *(Doc 9859).*

4.17.2.2 Prior approval from the DG, CAAN shall be required for the operational use of EFB functions to be used for the safe operation of helicopters.

**4.17.3** *EFB specific approval*

When issuing specific approval for operational use of EFBs, the it shall be ensured that:

a) the EFB equipment and its associated installation hardware, including interaction with helicopter systems if applicable, meet the appropriate airworthiness certification requirements;

b) the operator has assessed the safety risks associated with the operations supported by the EFB function(s);

c) the operator has established requirements for redundancy of the information (if appropriate) contained and displayed by the EFB function(s);

d) the operator has established and documented procedures for the management of the EFB function(s) including any databases it may use; and

e) the operator has established and documented the procedures for the use of, and training requirements for the EFB function(s).

*Note. — Guidance on safety risk assessments is contained in* the Safety Management Manual (SMM) *(Doc 9859).*

## 4.18 DOCUMENTS TO BE CARRIED ON BOARD AN HELICOPTER.

A Nepalese registered helicopter which is engaged in commercial air transport operations shall carry the following documents:

a) Nepalese Certificate of Registration issued in relation to that helicopter;
b) Nepalese Certificate of Airworthiness issued in relation to that helicopter;
c) current Maintenance Release issued in relation to that helicopter;
d) Aircraft Flight Manual or equivalent Certification document;
e) licenses issued in relation to the radio equipment installed in the helicopter;
f) current licenses held by each member of the flight crew;
g) aircraft journey log book or general declaration;
h) if passengers are carried, a list of their names, places of embarkation and intended place of disembarkation (passenger manifest);
i) cargo manifest;
j) Operations Manual, or those parts of it relating to flight operations;
k) a copy of the operational flight plan; if applicable;

l) a copy of the Air Traffic Control flight plan;
m) load sheet relating to the calculation of mass of the helicopter;
n) trim sheets relating to the disposition of the load and balance of the helicopter;
o) the maps and charts required for that flight;
p) Standard Operating Procedure;
q) a certified true copy of the AOC and Operations Specifications;
r) a copy of the MEL or list of acceptable defects, as applicable;
s) A copy of the insurance policy.

# CHAPTER 5.

# HELICOPTER COMMUNICATION, NAVIGATION AND SURVEILLANCE EQUIPMENT

## 5.1 COMMUNICATION EQUIPMENT

5.1.1 A helicopter shall be provided with radio communication equipment capable of:

a) conducting two-way communication for heliport control purposes;

b) receiving meteorological information at any time during flight; and

c) conducting two-way communication at any time during flight with at least one aeronautical station and with such other aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

*Note.— The requirements of 5.1.1 are considered fulfilled if the ability to conduct the communications specified therein is established during radio propagation conditions which are normal for the route.*

5.1.2 The radio communication equipment required in accordance with 5.1.1 shall provide for communications on the aeronautical emergency frequency 121.5 MHz.

5.1.3 For operations where communication equipment is required to meet an RCP specification for performance-based communication (PBC), a helicopter shall, in addition to the requirements specified in 5.1.1:

a) be provided with communication equipment which will enable it to operate in accordance with the prescribed RCP specification(s);

b) have information relevant to the helicopter RCP specification capabilities listed in the flight manual or other helicopter documentation approved by the State of Design or State of Registry; and

c) have information relevant to the helicopter RCP specification capabilities included in the MEL.

*Note.— Information on the performance-based communication and surveillance (PBCS) concept and guidance material on its implementation are contained in the* Performance-based Communication and Surveillance (PBCS) Manual *(Doc 9869).*

5.1.4 For operations where an RCP specification for PBC has been prescribed, it shall be ensured that the operator has established and documented:

a) normal and abnormal procedures, including contingency procedures;

b) flight crew qualification and proficiency requirements, in accordance with appropriate RCP specifications;
c) a training programme for relevant personnel consistent with the intended operations; and
d) appropriate maintenance procedures to ensure continued airworthiness, in accordance with appropriate RCP specifications.

5.1.5 In respect of those helicopters mentioned in 5.1.3, it shall be ensured that adequate provisions exist for:

a) receiving the reports of observed communication performance issued by monitoring programmes established in accordance with Annex 11, Chapter 3, 3.3.5.2; and

b) taking immediate corrective action for individual helicopters, helicopter types or operators, identified in such reports as not complying with the RCP specification(s).

## 5.2 NAVIGATION EQUIPMENT

5.2.1 A helicopter shall be provided with navigation equipment which will enable it to proceed:

a) in accordance with its operational flight plan; and

b) in accordance with the requirements of air traffic services; except when, if not so precluded by the appropriate authority, navigation for flights under VFR is accomplished by visual reference to landmarks.

5.2.2 For operations where a navigation specification for performance-based navigation (PBN) has been prescribed, a helicopter shall, in addition to the requirements specified in 5.2.1:

a) be provided with navigation equipment which will enable it to operate in accordance with the prescribed navigation specification(s); and

b) have information relevant to the helicopter navigation specification capabilities listed in the flight manual or other helicopter documentation approved by the State of Design or State of Registry; and

c) have information relevant to the helicopter navigation specification capabilities included in the MEL.

*Note.— Guidance on helicopter documentation is contained in the* Performance-based Navigation (PBN) Manual *(Doc 9613).*

5.2.3 For operations where a navigation specification for PBN has been prescribed, it shall be ensured that the operator has established and documented:

a) normal and abnormal procedures, including contingency procedures;

b) flight crew qualification and proficiency requirements, in accordance with the appropriate navigation specifications;

c) a training programme for relevant personnel consistent with the intended operations; and

d) appropriate maintenance procedures to ensure continued airworthiness, in accordance with appropriate navigation specifications.

*Note 1.— Guidance on safety risks and mitigations for PBN operations, in accordance with Annex 19, are contained in the* Performance-based Navigation (PBN) Operational Approval Manual *(Doc 9997).*

*Note 2.— Electronic navigation data management is an integral part of normal and abnormal procedures.*

5.2.4 A Specific Approval shall be issued for operations based on PBN authorization required (AR) navigation specifications.

*Note.— Guidance on specific approvals for PBN authorization required (AR) navigation specifications is contained in the* Performance-based Navigation (PBN) Operational Approval Manual *(Doc 9997).*

5.2.5 The helicopter shall be sufficiently provided with navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment will enable the helicopter to navigate in accordance with 5.2.1 and, where applicable, 5.2.2.

5.2.6 On flights in which it is intended to land in instrument meteorological conditions, a helicopter shall be provided with appropriate navigation equipment providing guidance to a point from which a visual landing can be effected. This equipment shall be capable of providing such guidance at each heliport at which it is intended to land in instrument meteorological conditions and at any designated alternate heliports.

## 5.3 SURVEILLANCE EQUIPMENT

5.3.1 A helicopter shall be provided with surveillance equipment which will enable it to operate in accordance with the requirements of air traffic services.

5.3.2 For operations where surveillance equipment is required to meet an RSP specification for performance-based surveillance (PBS), a helicopter shall, in addition to the requirements specified in 5.3.1:

a) be provided with surveillance equipment which will enable it to operate in accordance with the prescribed RSP specification(s);

b) have information relevant to the helicopter RSP specification capabilities listed in the flight manual or other helicopter documentation approved by the State of Design or State of Registry; and

c) have information relevant to the helicopter RSP specification capabilities included in the MEL.

*Note 1.— Information on surveillance equipment is contained in the* Aeronautical Surveillance Manual *(Doc 9924).*

*Note 2.— Information on RSP specifications for performance-based surveillance is contained in the* Performance-based Communication and Surveillance (PBCS) Manual *(Doc 9869).*

5.3.3 For operations where an RSP specification for PBS has been prescribed, it shall be ensured that the operator has established and documented:

a) normal and abnormal procedures, including contingency procedures;

b) flight crew qualification and proficiency requirements, in accordance with appropriate RSP specifications;

c) a training programme for relevant personnel consistent with the intended operations; and

d) appropriate maintenance procedures to ensure continued airworthiness, in accordance with appropriate RSP specifications.

5.3.4 It shall be ensured that, in respect of those helicopters mentioned in 5.3.2, adequate provisions exist for:

a) receiving the reports of observed surveillance performance issued by monitoring programmes established in accordance with Annex 11, Chapter 3, 3.3.5.2; and

b) taking immediate corrective action for individual helicopter, helicopter types or operators, identified in such reports as not complying with the RSP specification(s).

## 5.4 INSTALLATION

The equipment installation shall be such that the failure of any single unit required for communication, navigation or surveillance purposes or any combination thereof will not result in the failure of another unit required for communication, navigation or surveillance purposes.

## 5.5 ELECTRONIC NAVIGATION DATA MANAGEMENT

5.5.1 The operator shall not employ electronic navigation data products that have been processed for application in the air and on the ground, unless the CAAN has approved the operator's procedures for ensuring that the process applied and the products delivered have met acceptable standards of integrity and that the products are compatible with the intended function of the existing equipment. It shall be ensured that the operator continues to monitor both the process and products.

*Note.— Guidance relating to the processes that data suppliers may follow is contained in RTCA DO200A/EUROCAE ED-76 and RTCA DO-201A/EUROCAE ED-77.*

5.5.2 The operator shall implement procedures that ensure the timely distribution and insertion of current and unaltered electronic navigation data to all necessary aircraft.

# CHAPTER 6

# RESERVED

# CHAPTER 7.

# HELICOPTER FLIGHT CREW

## 7.1 COMPOSITION OF THE FLIGHT CREW

7.1.1 The number and composition of the flight crew shall not be less than that specified in the operations manual. The flight crews shall include flight crew members in addition to the minimum numbers specified in the flight manual or other documents associated with the certificate of airworthiness, when necessitated by considerations related to the type of helicopter used, the type of operation involved and the duration of flight between points where flight crews are changed.

7.1.2 The flight crew shall include at least one member authorized by the DG, CAAN to operate the type of radio transmitting equipment to be used.

## 7.2 FLIGHT CREW MEMBER EMERGENCY DUTIES

The operator shall, for each type of helicopter, assign to all flight crew members the necessary functions they are to perform in an emergency or in a situation requiring emergency evacuation. Annual training in accomplishing these functions shall be contained in the operator's training programme and shall include instruction in the use of all emergency and life-saving equipment required to be carried, and drills in the emergency evacuation of the helicopter.

## 7.3 FLIGHT CREW MEMBER TRAINING PROGRAMMES

7.3.1 The operator shall establish and maintain a ground and flight training programme, approved by the DG, CAAN, which ensures that all flight crew members are adequately trained to perform their assigned duties. The training programme shall:

a) include ground and flight training facilities and properly qualified instructors as determined by the DG, CAAN;

b) consist of ground and flight training for the type(s) of helicopter on which the flight crew member serves;

c) include proper flight crew coordination and training for all types of emergency and abnormal situations or procedures caused by engine, transmission, rotor, airframe or systems malfunctions, fire or other abnormalities;

d) include training in knowledge and skills related to the visual and instrument flight procedures for the intended area of operation, human performance and threat and error management eg. CRM, Single Resource Management (SRM), the transport of dangerous goods and, where applicable, procedures specific to the environment in which the helicopter is to be operated eg. CFIT, Monsoon etc.;

e) ensure that all flight crew members know the functions for which they are responsible and the relation of these functions to the functions of other crew members, particularly in regard to abnormal or emergency procedures;

f) include training in knowledge and skills related to the operational use of head-up display and/or enhanced vision systems for those helicopters so equipped; and

g) be given on a recurrent basis, as determined by the DG, CAAN and shall include an assessment of competence.

*Note 1.— Paragraph 2.2.5 prohibits the in-flight simulation of emergency or abnormal situations when passengers or cargo are being carried.*

*Note 2.— Flight training may, to the extent deemed appropriate by the DG, CAAN, be given in flight simulation training devices approved by the DG, CAAN for that purpose.*

*Note 3.— The scope of the recurrent training required by 7.2 and 7.3 may be varied and need not be as extensive as the initial training given in a particular type of helicopter.*

*Note 4.— The use of correspondence courses and written examinations as well as other means may, to the extent deemed feasible by the DG, CAAN, be utilized in meeting the requirements for periodic ground training.*

*Note 5.— Provisions for training in the transport of dangerous goods are contained in CAAN DGHR Ch. 14.*

*Note 6.— Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the* Human Factors Training Manual *(Doc 9683).*

*Note 7.— Information for pilots and flight operations personnel on flight procedure parameters and operational procedures is contained in PANS-OPS (Doc 8168), Volume I. Criteria for the construction of visual and instrument flight procedures are contained in PANS-OPS (Doc 8168), Volume II. Obstacle clearance criteria and procedures used in certain States may differ from PANS-OPS, and knowledge of these differences is important for safety reasons.*

*Note 8.— Guidance material to design flight crew training programmes can be found in the* Manual of Evidence-based Training *(Doc 9995).*

*Note 9.— Guidance material on the different means used to assess competence can be found in the Attachment to Chapter 2 of the* Procedures for Air Navigation Services — Training *(PANS-TRG, Doc 9868).*

7.3.2 The requirement for recurrent flight training in a particular type of helicopter shall be considered fulfilled by:

a) the use, to the extent deemed feasible by the DG, CAAN, of flight simulation training devices approved by that DG, CAAN for that purpose; or

b) the completion within the appropriate period of the proficiency check required by 7.4.3 in that type of helicopter.

## 7.4 QUALIFICATIONS

*Note.— See the* Manual of Procedures for Establishment and Management of a State's Personnel Licensing System *(Doc 9379) for guidance of a general nature on cross-crew qualification, mixed-fleet flying and cross-credit.*

### 7.4.1 Recent experience — pilot-in-command and co-pilot

7.4.1.1 The operator shall not assign a pilot-in-command or a co-pilot to operate at the flight controls of a type or variant of a type of a helicopter during take-off and landing unless that pilot has operated the flight controls during at least three take-offs and landings within the preceding 90 days on the same type of helicopter or in a flight simulator approved for the purpose.

7.4.l.2 When a pilot-in-command or a co-pilot is flying several variants of the same type of helicopter or different types of helicopter with similar characteristics in terms of operating procedures, systems and handling, the DG, CAAN shall decide under which conditions the requirements of 7.4.1.1 for each variant or each type of helicopter can be combined.

### 7.4.2 Pilot-in-command operational qualification

7.4.2.1 The operator shall not utilize a pilot as pilot-in-command of a helicopter on an operation for which that pilot is not currently qualified until such pilot has complied with 7.4.2.2 and 7.4.2.3.

7.4.2.2 Each such pilot shall demonstrate to the operator an adequate knowledge of:

a) the operation to be flown. This shall include knowledge of:

1) the terrain and minimum safe altitudes;
2) the seasonal meteorological conditions;
3) the meteorological, communication and air traffic facilities, services and procedures;
4) the search and rescue procedures; and
5) the navigation facilities and procedures associated with the route or area in which the flight is to take place; and

b) procedures applicable to flight paths over heavily populated areas and areas of high air traffic density, obstructions, physical layout, lighting, approach aids and arrival, departure, holding and instrument approach procedures, and applicable operating minima.

*Note.— That portion of the demonstration relating to arrival, departure, holding and instrument approach procedures may be accomplished in an appropriate training device which is adequate for this purpose.*

7.4.2.3 A pilot-in-command shall have made a flight, representative of the operation with which the pilot is to be engaged which must include a landing at a representative heliport, as a member of the flight crew and accompanied by a pilot who is qualified for the operation.

7.4.2.4 The operator shall maintain a record, sufficient to satisfy the DG, CAAN of the qualification of the pilot and of the manner in which such qualification has been achieved.

7.4.2.5 The operator shall not continue to utilize a pilot as a pilot-in-command on an operation in an area specified by the operator and approved by the DG, CAAN unless, within the preceding 12 months, the pilot has made at least one representative flight as a pilot member of the flight crew or as a check pilot. In the event that more than 12 months elapse in which a pilot has not made such a representative flight, prior to again serving as a pilot-in-command on that operation, that pilot must requalify in accordance with 7.4.2.2 and 7.4.2.3.

### 7.4.3 Pilot proficiency checks

7.4.3.1 The operator shall ensure that piloting technique and the ability to execute emergency procedures is checked in such a way as to demonstrate the pilot's competence on each type or variant of a type of helicopter. Where the operation may be conducted under IFR, the operator shall ensure that the pilot's competence to comply with such rules is demonstrated to either a check pilot of the operator or to a representative of the DG, CAAN. Such checks shall be performed twice within any period of one year. The validity of each pilot proficiency check shall be six months.

*Note 1.— Flight simulation training devices approved by the* DG, CAAN *may be used for those parts of the checks for which they are specifically approved.*
*Note 2.— See the* Manual of Criteria for the Qualification of Flight Simulation Training Devices *(Doc 9625)*, Volume II — *Helicopters.*

7.4.3.2 When the operator schedules flight crew on several variants of the same type of helicopter or different types of helicopters with similar characteristics in terms of operating procedures, systems and handling, the DG, CAAN shall decide under which conditions the requirements of 7.4.3.1 for each variant or each type of helicopter can be combined.

## 7.5 FLIGHT CREW EQUIPMENT

A flight crew member assessed as fit to exercise the privileges of a license, subject to the use of suitable correcting lenses, shall have a spare set of the correcting lenses readily available when exercising those privileges.

## 7.6 FLIGHT TIME, FLIGHT DUTY PERIODS AND REST PERIODS

### 7.6.1 Flight and Duty Time Limitations

7.6.1.1 An operator shall not cause or permit any person to fly as a member of the crew of an helicopter if he knows or has any reason to believe that person is suffering from fatigue to the extent that the safety of the helicopter would be endangered.

7.6.1.2 Flight time and duty period limitations are established for the purpose of reducing the probability that fatigue of members of the crew of an helicopter may adversely affect the safety of flight. The primary concern is in relation to members of the flight crew, but it must be recognized that a cabin attendant who is suffering from fatigue, may, if an emergency occurs, fail in his assigned emergency duty.

7.6.1.3 To prevent the occurrence of cumulative fatigue because of inadequate periods for recuperation after the occurrence of, in particular, transient fatigue, minimum rest periods need to be established between successive periods of duty.

7.6.1.4 An operator shall formulate rules to limit flight time and flight duty periods and for the provision of adequate rest periods for all its crew members. These rules shall be in accordance with the regulations established or approved by the DG, CAAN and included in the operations manual. Flight times and duty periods so specified by operators shall not be longer than the maximum times specified in these Requirements and the rest periods shall not be less than the minimum times specified herein.

### 7.6.2 Flight time and duty period records

The holder of an Air Operator Certificate issued by the DG, CAAN shall maintain current records of the duration of duty periods and of the flight time of each of the crew member in a form approved by the Director General, such record shall be retained for a period of 12 months for the inspection by the Director General as may be required.

### 7.6.3 Flight Time, Flight Duty Periods and Rest Periods

7.6.3.1 The Operator shall specify for approval by the DG, CAAN the limitations applicable to the flight time and flight duty periods for flight crew members. These specifications shall also make provision for adequate rest periods and shall be such as to ensure that fatigue occurring either in a flight or successive flights or accumulated over a period of time due to these and other tasks does not endanger the safety of a flight.

7.6.3.2 Flight Crew Limitations:

7.6.3.2.1 Single pilot operations

a) The maximum duty period in any period of 24 hours for a pilot engaged in single pilot operation shall be 12 hours of which not more than 7 hours flight duty period.

b) In a particular instance when the pilot's flight duty period exceeds 7 hours but does not exceed 8 hours, he shall be removed from all flight duties the following day regardless of the number of previous days that he has flown.

c) The minimum rest period between two consecutive flight duty periods shall be 9 hours, and if the preceding duty period was 10 hours or more, it shall not be less than 10 hours. Any period between two consecutive flight duty periods which is spent at place where there is no facility for supine rest shall not qualify as a rest period.

7.6.3.2.2 Two pilot operations

a) The maximum duty period in any period of 24 hours for pilots engaged in two-pilot operation shall be 13 hours of which not more than 9 hours may be flight duty period.

b) The minimum rest period between two consecutive duty periods shall be 9 hours and if the preceding flight duty period was 11 hours or more, it shall not be less than 10 hours. Any period between two consecutive flight duty periods which is spent at a place where there is no facility for prone rest shall not qualify as a rest period.

c) When a Flight Engineer is also involved as a part of the flight crew, the limitations of para 7.6.3.2.2 a) shall apply.

### 7.6.4 Relaxation of limitations

a) Where an operator has established flight time and duty period limitations which are more restrictive than those specified in this FOR-H, a pilot-in-command may be authorized by the operator to extend flight times and duty periods up to the limits of those specified in this directive subject to such conditions as the operator may establish.

b) A pilot-in-command of an aircraft may be authorized to exceed the limits specified in this FOR-H if in his judgement it is safe to do so for the following purposes:

i) search and rescue action;
ii) provisions of relief in cases of distress; and
iii) completion of a flight which unforeseen operational conditions has extended beyond the limitations.

c) Whenever flight times or duty periods exceed the limitations specified, the pilot-in-command and the operator shall submit a report in writing to the Director General.

d) Reduction of the rest periods specified in this FOR-H to facilitate either (i) search and rescue action; or (ii) provision of relief in cases of distress shall be subject to the prior approval of the Director General.

### 7.6.5 Rest Period

7.6.5.1 An operator shall establish for flight crew members a minimum rest period that allows them to obtain:

a) adequate rest prior to flight duty time, calculated by taking into account the number and type of flight crew member duties that precede and follow the rest period and ;

b) at least one rest period of not less than 24 consecutive hours, which should include two nights, once within each seven-day period; the preceding six days to include both those days when flight duties or airport standby duties have been performed;

### 7.6.6 Cumulative Hours

Members of flight crew and cabin crew shall not fly:

- more than 100 hours in any period of one calendar month,
- more than 290 hours in any period of three consecutive months,
- more than 1000 hours in any period of twelve consecutive months.

# CHAPTER 8.

# FLIGHT OPERATIONS OFFICER/FLIGHT DISPATCHER

8.1 A Flight Operations Officer/Flight Dispatcher, employed in conjunction with an approved method of control and supervision of flight operations shall be licensed in accordance with the provisions of PELR.

8.2 In accepting proof of qualifications other than the option of holding of a flight operations officer/flight dispatcher licence, in accordance with the approved method of control and supervision of flight operations, it shall be ensured that as a minimum, such persons meet the requirements specified in PELR for the flight operations officer/flight dispatcher licence.

8.3 A flight operations officer/flight dispatcher shall not be assigned to duty unless that person has:

a) satisfactorily completed the operator-specific training course that addresses all the specific components of its approved method of control and supervision of flight operations specified in 2.2.1.3;

*Note.— Guidance on the composition of such training syllabi is provided in the* Training Manual *(Doc 7192), Part D-3 —* Flight Operations Officers/Flight Dispatchers.

b) made, within the preceding 12 months, at least a one-way qualification flight in a helicopter over any area for which that person is authorized to exercise flight supervision. The flight shall include landings at as many helipads as practicable;

*Note.— For the purpose of the qualification flight, the flight operations officer/flight dispatcher must be able to monitor the flight crew intercommunication system and radio communications, and be able to observe the actions of the flight crew.*

c) demonstrated to the operator a knowledge of:

1) the contents of the operations manual described in Appendix 7;
2) the radio equipment in the helicopters used; and
3) the navigation equipment in the helicopters used;

d) demonstrated to the operator a knowledge of the following details concerning operations for which the officer is responsible and areas in which that individual is authorized to exercise flight supervision:

1) the seasonal meteorological conditions and the sources of meteorological information;
2) the effects of meteorological conditions on radio reception in the helicopters used;
3) the peculiarities and limitations of each navigation system which is used by the operation; and
4) the helicopter loading instructions;

e) satisfied the operator as to knowledge and skills related to human performance as they apply to dispatch duties; and

f) demonstrated to the operator the ability to perform the duties specified in 2.6.

8.4 A flight operations officer/flight dispatcher assigned to duty should maintain complete familiarization with all features of the operations which are pertinent to such duties, including knowledge and skills related to human performance.

*Note.— Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the* Human Factors Training Manual *(Doc 9683).*

8.5 A flight operations officer/flight dispatcher should not be assigned to duty after 12 consecutive months of absence from such duty, unless the provisions of 8.3 are met.

8.6 In order to prevent cumulative fatigue and endangerment of flight safety, no operator shall roster a Flight Operations Officer/Flight Dispatcher on duty for more than that as specified in the Operations Manual or Flight Dispatcher Manual. Such duty period shall be identified in accordance with the current labor laws of the country.

# CHAPTER 9.

# MANUALS, LOGS AND RECORDS

*Note.— The following additional manuals, logs and records are associated with this FOR but are not included in this chapter:*

*Fuel and oil records — see 2.2.9*
*Flight time, flight duty periods, duty periods and rest periods records — see 2.8.3.3*
*Flight preparation forms — see 2.3*
*Operational flight plan — see 2.3.3*
*Pilot-in-command operational qualification records — see 7.4.3.4.*

## 9.1 FLIGHT MANUAL

*Note.— The flight manual contains the information specified in Annex 8 and as provided by the manufacturer.*

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

## 9.2 RESERVED

## 9.3 RESERVED

## 9.4 JOURNEY LOG BOOK

9.4.1 The helicopter journey log book should contain the following items and the corresponding Roman numerals:

I — Helicopter nationality and registration.
II — Date.
III — Names of crew members.
IV — Duty assignments of crew members.
V — Place of departure.
VI — Place of arrival.
VII — Time of departure.
VIII — Time of arrival.
IX — Hours of flight.
X — Nature of flight (private, scheduled or non-scheduled).
XI — Incidents, observations, if any.
XII — Signature of person in charge.

9.4.2 Entries in the journey log book should be made currently and in ink or indelible pencil.

9.4.3 Completed journey log books should be retained to provide a continuous record of the last six months' operations.

## 9.5 RECORDS OF EMERGENCY AND SURVIVAL EQUIPMENT CARRIED

Operators shall at all times have available for immediate communication to rescue coordination centres, lists containing information on the emergency and survival equipment carried on board any of their helicopters engaged in international air navigation. The information shall include, as applicable, the number, colour and type of life rafts and pyrotechnics, details of emergency medical supplies, water supplies and the type and frequencies of the emergency portable radio equipment.

## 9.6 FLIGHT RECORDER RECORDS

The operator shall ensure, to the extent possible, in the event the helicopter becomes involved in an accident or incident, the preservation of all related flight recorder records, and if necessary the associated flight recorders, and their retention in safe custody pending their disposition as determined in accordance with Annex 13.

## 9.7 TIME

9.7.1 Coordinated Universal Time (UTC) shall be used and shall be expressed in hours and minutes and, when required, seconds of the 24-hour day beginning at midnight.

9.7.2 A time check shall be obtained prior to operating a controlled flight and at such other times during the flight as may be necessary.

# CHAPTER 10.

# CABIN CREW

## 10.1 ASSIGNMENT OF EMERGENCY DUTIES

The operator shall establish, to the satisfaction of the DG, CAAN, the minimum number of cabin crew required for each type of helicopter, based on seating capacity or the number of passengers carried, which shall not be less than the minimum number established during certification, in order to effect a safe and expeditious evacuation of the helicopter, and the necessary functions to be performed in an emergency or a situation requiring emergency evacuation. The operator shall assign these functions for each type of helicopter.

## 10.2 PROTECTION OF CABIN CREW DURING FLIGHT

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

*Note.— The foregoing does not preclude the pilot-in-command from directing the fastening of the seat belt only, at times other than during take-off and landing.*

## 10.3 TRAINING

The operator shall establish and maintain a training programme, approved by the DG, CAAN, to be completed by all persons before being assigned as a cabin crew member. Cabin crew members shall complete a recurrent training programme annually.

These training programmes shall ensure that each person is:

a) competent to execute those safety duties and functions that the cabin attendant is assigned to perform in the event of an emergency or in a situation requiring emergency evacuation;

b) drilled and capable in the use of emergency and life-saving equipment required to be carried, such as life jackets, life rafts, evacuation slides, emergency exits, portable fire extinguishers, oxygen equipment, first-aid and universal precaution kits, and automated external defibrillators;

c) when serving on helicopters operated above 3 000 m (10 000 ft), knowledgeable as regards the effect of lack of oxygen;

d) aware of other crew members' assignments and functions in the event of an emergency so far as is necessary for the fulfilment of the cabin crew member's own duties;

e) aware of the types of dangerous goods which may, and may not, be carried in a passenger cabin; and

f) knowledgeable about human performance as related to passenger cabin safety duties including flight crew-cabin crew coordination.

*Note 1.— Requirements for the training of cabin crew members in the transport of dangerous goods are included in the Dangerous Goods Training Programme contained in Annex 18* — The Safe Transport of Dangerous Goods by Air *and the* Technical Instructions for the Safe Transport of Dangerous Goods by Air *(Doc 9284).*

*Note 2.— Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the* Cabin Crew Safety Training Manual *(Doc 10002).*

## 10.4 FLIGHT TIME, FLIGHT DUTY PERIODS AND REST PERIODS

10.4.1 Cabin Crew shall not fly more than:

a) 100 hours within the last thirty consecutive days
b) 290 hours within the last consecutive 90 days
c) 1000 hours in one year.
d) The maximum duty period in any period of 24 hours for cabin crew engaged in helicopter operations shall be 12 hours of which not more than 9 hours may be flight duty period.

10.4.2 The definition of flight duty period is intended to cover a continuous period of duty that always includes a flight or series of flights for a cabin crew member. It is meant to include all duties a crew member may be required to carry out from the moment he or she reports for duty until he or she completes the flight or series of flights and the aeroplane finally comes to rest and the engines are shut down. It is considered necessary that a flight duty period should be subject to limitations because a crew member's activities over extended periods would eventually induce fatigue — transient or cumulative — which could adversely affect the safety of a flight.

10.4.3 A flight duty period does not include the period of travelling time from home to the point of reporting for duty. It is the responsibility of the cabin crew member to report for duty in an adequately rested condition.

10.4.4 Time spent positioning at the behest of the operator is part of a flight duty period when this time immediately precedes (i.e., without an intervening rest period) a flight duty period in which that person participates as a cabin crew member.

10.4.5 An operator shall recognize the responsibility of a cabin crew member to refuse further flight duty when suffering from fatigue of such a nature as to adversely affect the safety of flight.

10.4.6 The operator shall nominate a home base for each cabin crew member, from where the cabin crew member will normally start and end a duty period or a series of duty periods. The home base shall be assigned with a degree of permanence.

10.4.7 The minimum Rest Period between two consecutive Flight Duty Periods shall be 9 hours, and if the preceding Flight Duty Period was 10 hours or more, it shall not be less than 11 hours. Any period between two consecutive Flight Duty Periods which is spent at place where there is no facility for supine rest shall not qualify as a Rest Period.

10.4.8 RESERVED

10.4.9 An operator shall establish for cabin crew members, a minimum rest period that allows them to obtain:

a) adequate rest prior to flight duty time, calculated by taking into account the number and type of cabin crew member duties that precede and follow the rest period;

b) at least one rest period of not less than 24 consecutive hours, which should include two nights, once within each seven day period; and

c) the minimum rest period immediately before commencing a Flight Duty Period may not be less than 9 hours.

## 10.5 CABIN CREW INSTRUCTOR QUALIFICATIONS

10.5.1 Operators shall establish qualifications for cabin crew instructors as required by CAAN Cabin Crew Training Manual (CCTM) and maintain an instructor training program to the satisfaction of DG, CAAN. Cabin Crew Instructors shall obtain necessary authorization before being assigned on any instructional tasks.

## 10.6 RESERVED

## 10.7 PASSENGER SAFETY BRIEFING CARD

10.7.1 A Passenger Safety Briefing Card, which may be a part of the Cabin Crew Manual and which must be clear and legible of reasonable quality, preferably laminated, shall be required onboard every aircraft in each passenger seat. The Card must also contain instructions in the national language.

10.7.2 Where there is no such provision for placing the Card in every passenger seat, then at least one Card shall be affixed in various prominent positions which will enable every passenger to view the Card and comply with its instructions.

10.7.3 The Passenger Safety Briefing Card shall contain information on:

(a) procedures to follow in the case of fire, decompression, smoke etc. during flight
(b) procedures to follow in the case of emergency evacuation on land and water including the use of all emergency equipment
(c) the use of breathing apparatus (if installed)
(d) the use of life vests (if installed)
(e) restrictions on the use of personal electronic equipment
(f) smoking and seat belt signs
(g) the pictorial display of location of survival equipment eg. fire extinguishers, oxygen bottles, first aid kits, flashlights etc. on board including survival rations (if carried)

10.7.4 When the operator operates more than one type or variants of a type, the Passenger Safety Briefing Card shall also indicate the type or series of the type.

# CHAPTER 11.

# SECURITY*

## 11.1 HELICOPTER SEARCH PROCEDURE CHECKLIST

The operator shall ensure that there is on board a checklist of the procedures to be followed in searching for a bomb in case of suspected sabotage. The checklist shall be supported by guidance on the course of action to be taken should a bomb or suspicious object be found.

11.1.1 The Search Procedure Checklist and reporting form shall be a controlled document requiring approval from the DG, CAAN.

11.1.2 Once approved, it shall be placed inside a sealed envelope which shall bear the signature of the Chief of the Flight Safety Division of the operator and the date. It shall be opened only during such emergencies by the Flight Crew or an authorized person.

## 11.2 TRAINING PROGRAMMES

11.2.1 The operator shall establish and maintain a training programme approved by the DG, CAAN which enables crew members to act in the most appropriate manner to minimize the consequences of acts of unlawful interference.

11.2.2 The operator shall also establish and maintain a training programme to acquaint appropriate employees with preventive measures and techniques in relation to passengers, baggage, cargo, mail, equipment, stores and supplies intended for carriage on a helicopter so that they contribute to the prevention of acts of sabotage or other forms of unlawful interference.

11.2.3 The Security Training Program for the flight and cabin crew should contain as a minimum:

a) Security of the flight crew compartment
b) Aircraft search procedure checklist
c) Determination of the seriousness of any occurrence
d) Crew communication and coordination
e) Appropriate self-defense responses
f) Use authorized by the DG, CAAN of non-lethal protective devices assigned to crew member
g) Understanding of behavior of terrorists
h) Live situational training exercises regarding various threat conditions
i) Post-flight concern for the crew

## 11.3 REPORTING ACTS OF UNLAWFUL INTERFERENCE

Following an act of unlawful interference the pilot-in-command shall submit, without delay, a report of such an act to the designated local authority.

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* In the context of this Chapter, the word ‘‘security’’ is used in the sense of prevention of illicit acts against civil aviation.

# CHAPTER 12

# CASEVAC/MEDEVAC PROCEDURES

## 12.1 CASEVAC/MEDEVAC PROCEDURES

12.1.1 Medical evacuations of patients, from one facility to another, that do not constitute an emergency are MEDEVAC. The use of dedicated air resources assigned for emergencies is not required. Essentially the transportation is provided for a patient under stable conditions, and may or may not be accompanied by a doctor.

12.1.2 MEDEVACs are normally requested by a doctor and do not require aircraft on 24 hours standby.

12.1.3 Aerial casualty evacuations involving injured military or civilian personnel where a threat to life or limb exists, is a CASEVAC. This entails the movement of an injured or seriously ill person, usually involve the use of dedicated air resources available on a continuous 24 hours basis. Verification by a doctor or qualified medical officer is required.

12.1.4 A MEDEVAC is normally requested by a doctor or by a medical facility for available space on regularly scheduled flights or as a request for a charter flight if the condition of the patient requires unique medical care during the transportation, or if the destination of the patient is not served by normally scheduled flights. A CASEVAC may be requested by anyone and is deemed to be of extreme urgency.

12.1.5 All CASEVAC/MEDEVAC missions must be documented and kept as a record for at least three months.

12.1.6 Once it has been decided that an evacuation is to be conducted, a risk assessment must be accomplished by the Flight Dispatcher and the PIC to insure that the risks involved are understood and the level of risk is within acceptable safety parameters.

12.1.7 The details of the requests for such evacuations should consist of at least the following information:

a) Identification of the requesting party
b) Patient information (name, blood group, nationality, age, sex)
c) Location of the patient(s)
d) Time of injury or accident

e) Number of injured or sick persons
f) Description of injuries or illness
g) Personnel who must accompany the patient(s)
h) Landing site
i) Security of landing site available or not

## 12.2 TRANSPORT OF HUMAN REMAINS

12.2.1 For the transport of human remains, the air operator shall comply with the following requirements.

12.2.2 Operators should comply with the Standards of Annex 18 and the Technical Instructions for the safe transport of Dangerous Goods by air (Doc 9284) as far as practicable.

12.2.3 The operator should ensure that all required documents issued by the relevant authorities are in hand prior to accepting the corpse or human remains. The corpse must be registered on the Cargo Manifest or the General Declaration form. The documents may be carried by the crew or the delegated person.

12.2.4 A designated person or escort must accompany the human remains. No other passenger besides the escort shall be onboard such aircraft if the human remains are carried in the passenger cabin.

12.2.5 Instructions concerning medical procedures:

12.2.5.1 Autopsy should be performed to determine the cause of the death. A Death Certificate should be issued.

12.2.5.2 Embalming should be performed in order to stop the corpse from bleeding, leaking and smelling.

12.2.5.3 Ensure proper preparation and place the remains in a body bag or coffin before loading onto the aircraft.

12.2.6 In the case of salvaging human remains from accident sites in difficult locations, it may not always be possible or practicable to comply with the procedures mentioned above. Operators should develop as part of their Operations Manual, a standard procedure for the transport of human remains.

## 12.3 MEDEVAC OF COMMUNICABLE DISEASE PATIENTS AND EQUIPMENT

12.3.1 An operator shall develop a Standard Operating Procedure for the transport of patients and medical equipment relating to communicable disease.

12.3.2 The SOP for such operations shall be developed in accordance with the official guidelines provided by government institutions dealing with such types of diseases.

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# CHAPTER 13

# TRAINING REQUIREMENTS AND SAFE TRAINING PRACTICES

## 13.1 GENERAL

13.1.1 This chapter prescribes the requirements applicable to each certificate holder for establishing and maintaining a training program for crew members, aircraft dispatchers and other operations personnel and for the approval and use of training devices in the conduct of the program as well as the contents of safe training practices.

13.1.2 All trainings for initial issuance of a license or ratings including type ratings shall be undertaken in an Approved Training Organization (ATO). The air operator shall be permitted to conduct those trainings that are not required to be undertaken in an ATO eg. recurrent trainings and checks, trainings that are required for maintaining the currency of a license or rating.

## 13.2 TRAINING PROGRAM CURRICULUM

13.2.1 Further to the requirements of Chapter 7.3 Flight Crew Member Training Programmes, each certificate holder must prepare and keep current a written training program or curriculum for each type of aircraft with respect to dispatcher and each crew member required for that type of aircraft. The curriculum must include ground and flight training required by this chapter.

13.2.2 Each training program must include:

a) a list of principal ground training subjects, including (i) emergency training subjects that are provided (ii) line indoctrination training and (iii) CRM, SRM etc.

b) a list of all the training devices mockups, system trainers, procedures trainers or other training aids that the certificate holder will use.

c) detailed descriptions or pictorial displays of the approved normal, abnormal and emergency maneuvers, procedures and functions that will be performed during each flight training phase or flight check indicating those maneuvers, procedures and functions that are to be performed during the in-flight portion of flight training and flight checks.

d) a list of aircraft simulators or other training devices approved, including approvals for particular maneuvers, procedures or functions.

e) the program hours or training that will be applied to each phase of training.

## 13.3 TRAINING PROGRAM AND REVISION

### 13.3.1 Initial Approval

To obtain initial approval, each certificate holder must submit to the DG, CAAN:

a) an outline of the proposed program or revision, including an outline of the proposed or revised curriculum that provides enough information for a preliminary evaluation of the proposed training program or revised training program; and

b) additional relevant information as may be requested by the DG, CAAN.

13.3.2 If the proposed training program or revision complies with this chapter, the DG, CAAN grants initial approval in writing after which the certificate holder may conduct the training in accordance with that program. The DG, CAAN then evaluates the effectiveness of the training program and advises the certificate holder of deficiencies, if any, that must be corrected.

### 13.3.3 Final Approval

The DG, CAAN grants final approval of the program or revision if the certificate holder shows that the training conducted under the initial approval mentioned above, ensures that each person that successfully completes the training is adequately trained to perform his assigned duties.

13.3.4 In granting initial or final approval of training programs or revision, including reduction in program hours specified in this chapter, the DG, CAAN considers the training aids, devices, methods and procedures listed in the certificate to holders curriculum that increases the quality and effectiveness of the teaching-learning process.

13.3.5 If approval of reduced program hours of training is granted, the DG, CAAN provides the certificate holder with a statement for the basis for the approval.

13.3.6 Whenever the DG, CAAN finds that revisions are necessary for the continued adequacy of a training program that has been granted final approval, the certificate holder shall, after notification by the DG, CAAN, make any changes in the program that are found necessary, within 30 days after the certificate holder receives such notice. However, if the DG, CAAN finds that there is an emergency that requires immediate action in the interest of safety in air transportation, he may, upon a statement of the reasons, require a change effective without stay.

## 13.4 GROUND INSTRUCTOR

13.4.1 An air operator shall prepare detailed procedures for issuance and renewal of Ground Instructor Authorization in line with approved Operations Manual or Training and Procedures Manual including qualifications, requirements, training needs, on-the-job training, evaluation procedure, monitoring requirements for the Ground Instructor Authorization and submit to CAAN for approval.

13.4.2 No certificate holder may use a person to serve as a ground instructor for a course of training unless that person:

(a) In the case of pilots:

(i) has demonstrated his knowledge and capacity on teaching subject matter by conducting a ground class satisfactorily to the DG, CAAN and is cleared by DG, CAAN to act as an instructor for the ground training.

(ii) for all single-engine helicopters and multi-engine helicopters below 3180 kgs, holds a CPL with more than 1500 hours of flying experience in helicopters and 200 hours on type and successfully completes a Ground Instructor's course; and

(iii) for multi-engine helicopters with a MTOW of 3180 kgs or more, holds an ATP license with more than 2000 hours in helicopters and 200 hours as PIC on type and successfully completes a Ground Instructor's course.

(b) In the case of Engineers:

(i) has demonstrated his knowledge and capacity on teaching subject matter by conducting a ground class satisfactorily to the DG, CAAN and is cleared by DG, CAAN to act as an instructor for the ground training.

(ii) holds an Aircraft Maintenance License with at least three years' experience and one-year experience on type with an aviation organization applicable to the category; or

holding an Engineering degree of any discipline, with the appropriate type rating and having a work experience of at least three years with an aviation organization and whose affiliation with subject to instruct should be fit to satisfy the DG, CAAN.

*Note-A pilot whose license is not current but has qualification and experience mentioned above also may be considered to be eligible to apply for a position of Ground Instructor.*

13.4.3 In case of ground instruction for flight operation officer and personnel involved in dispatching aircraft, a pilot or a FOO license holder, with experience of not less than 3 years shall be eligible to conduct ground instruction, if his qualification and background is satisfactory to DG, CAAN.

13.4.4 In case of ground instruction for cabin attendants, a pilot or a FOO license holder or a cabin attendant, with experience of not less than 3 years shall be eligible to conduct ground instruction, if his qualification and background is satisfactory to DG, CAAN.

13.4.5 RESERVED

13.4.6 For the renewal of ground instructorship the applicant must produce an evidence of conducting a ground class of his subject at least once in a year.

13.4.7 Where an operator takes the services of a ground instructor from another operator, it shall be duly notified to CAAN at least seven days in advance.

13.4.8 For the renewal of ground instructor authorization, the applicant shall produce evidence of having conducted at least one class per year during the last two years.

## 13.5 PILOT TRAINING: Ground and Flight Training

### 13.5.1 Initial, Recurrent, Conversion and Upgrade Ground Training.

13.5.1.1 Initial, recurrent, conversion and upgrade ground training for pilots must include instruction in at least the following, as applicable, to their assigned duties:

a) General Subjects:

i) the certificate holders dispatch or flight release procedures.

ii) principals and methods for determining weight and balance, and runway limitations for take-off and landing (regulated take-off and landing weight)

iii) enough meteorology to ensure a practical knowledge of weather phenomena, including the principal of frontal systems, icing, fog, thunderstorms and high altitude weather situations.

iv) air traffic control systems, procedures and phraseology.

v) navigation and the use of navigation aids, including instrument approach procedures.

vi) normal and emergency communication procedures.

vii) visual cues prior to and during descent below DH or MDA; and

viii) other instructions as necessary to insure his competence.

b) For each aircraft type:

i) a general description;

ii) performance characteristics;

iii) engines and rotors;

iv) major components;

v) major aircraft systems, appropriate procedures and limitations;

vi) procedures for avoiding severe weather situations and for operating in or near thunderstorms, turbulent air, icing, hail, and other potentially hazardous meteorological conditions;

vii) operating limitations;

viii) fuel consumption and management;

ix) flight planning;

x) each normal and emergency procedure; and

xi) the approved aircraft flight manual.

13.5.1.2 Initial ground training for pilots must consist all the programmed hours of instructions in the required subjects specified in the above paragraph and approved by DG, CAAN.

13.5.1.3 An operator may provide recurrent ground courses to flight crew from other operators on similar type provided the instructor is familiar with the latter's SOP and training manuals. Such activities shall be conducted with prior information to CAAN at least ten days in advance and acquiring an approval from CAAN.

**13.5.2 Initial, Recurrent, Conversion, Upgrade and Differences Flight Training.**

13.5.2.1 Initial, transition and upgrade training for pilots must include flight training and practice in the maneuvers and procedures set forth in Appendix 3 as appropriate.

13.5.2.2 The maneuvers and procedures required by the above paragraph must be performed in-flight or (except to the extent that certain maneuvers and procedures may be performed) in an helicopter simulator for which the user has received a User Approval from the DG, CAAN.

13.5.2.3 Minimum of 5 hours flight training is required for initial type conversion training in single-pilot helicopters.

13.5.2.4 Minimum of 6 hours flight training is required for initial type conversion and upgrade training in multi-pilot helicopters.

13.5.2.5 Minimum of 1 hour of recurrent or difference flight training in a single pilot helicopter or minimum 2 hours of recurrent or differences flight training in the case of multi-pilot helicopters.

13.5.2.6 Minimum of one hour for all types of helicopters for Pilot Proficiency Checks.

## 13.6 CABIN CREW; Initial, Recurrent, Conversion and Differences Ground Training

13.6.1 The initial, recurrent, conversion and differences ground training for cabin crew must include instruction in at least the following-

a) General subjects-

i) authority of the Pilot-In-Command

ii) passenger handling, including the procedures to be followed in the case of deranged persons or other persons or other persons whose conduct might jeopardize safety.

b) For each aircraft type-

i) A general description of the aircraft of the aircraft emphasizing physical characteristics that may have a bearing on ditching, evacuation and inflight emergency procedures and on other related duties;

ii) The use of both the public address system and the means of communicating with other crew members, including emergency means in the case of attempted hijacking or other unusual situations;
iii) Proper use of electrical galley equipment and the controls for cabin heat and ventilation;
iv) drilled and capable in the use of emergency and life saving equipment required to be carried, such as life jackets, life rafts, evacuation slides, emergency exits, portable fire extinguishers, oxygen equipment and first aid kits;
v) when serving on helicopter operated above 3000 m (10000 ft), knowledgeable as regards the effect of lack of oxygen and, in the case of pressurized helicopter, as regards physiological phenomena accompanying a loss of pressurization;
vi) aware of other crew members' assignments and functions in the event of an emergency so far as is necessary for the fulfillment of the cabin crew member's own duties;
vii) aware of the types of dangerous goods which may, and may not, be carried in a passenger cabin and has completed the dangerous goods training programme required by Dangerous Goods Handling Requirements of CAAN; and
viii) knowledgeable about human performance as related to passenger cabin safety duties including flight crew-cabin crew co-ordination.

13.6.2 Initial ground training for cabin crew must include a competence check to determine ability to perform duties and responsibilities.

13.6.3 Initial ground training for cabin crew must consist of all the programmed hours of instruction in the subjects specified as above and approved by the DG, CAAN.

## 13.7 AIRCRAFT DISPATCHER; Initial and Recurrent Ground Training -

13.7.1 Initial and Recurrent Ground Training for aircraft dispatcher must include instruction in at least the following -

a) General subjects-

i) Use of communication systems including the characteristics of those systems and the appropriate normal and emergency procedures
ii) Meteorology, including various types of meteorological information and forecast, interpretation of weather data, (including forecasting of en-route and terminal temperatures and weather conditions) frontal systems wind conditions and use of actual and prognostic weather charts for various altitudes
iii) The NOTAM system
iv) Navigational aids and publications
v) Joint dispatcher-Pilot responsibilities
vi) Characteristics of appropriate airports
vii) Prevailing weather phenomena and the available sources of weather information; and
viii) Air Traffic control and instrument approach procedures

b) For each aircraft type -

i) A general description of the aircraft emphasizing operating and performance characteristics, navigation equipment, instrument approach and communication equipment and procedures and other subjects having a bearing on dispatcher duties and responsibilities;
ii) Flight operations procedures including procedures specified;
iii) Weight and balance computation;
iv) Basic aircraft performance dispatch requirements and procedures;
v) Flight planning including track selection, flight time analysis and fuel requirements; and;
vi) Emergency procedures.

13.7.2 Emergency procedures must be emphasized, including the alerting of proper government, company and private agencies during emergencies to give maximum help to an aircraft in distress.

13.7.3 Initial and recurrent ground training for aircraft dispatchers must include a competence check given by an appropriate supervisor or ground instructor that demonstrate knowledge and ability with the subjects mentioned in this chapter.

13.7.4 Initial and recurrent ground training for the aircraft dispatchers must consist of the programmed hours of instruction in the subjects specified in this paragraph and approved by the DG, CAAN.

13.7.5 Recurrent ground training for dispatchers must include at least:

a). the knowledge with respect to the aircraft type and

b). in the subjects required for initial ground training as appropriate in the form of a competency check.

## 13.8 FLIGHT INSTRUCTORS: Initial, Recurrent and Conversion Training

13.8.1 The initial and conversion ground training for Flight Instructors must include the following:

a) Flight Instructor duties, functions and responsibilities;
b) the applicable Civil Aviation Regulations and the certificate holder's policies and procedures.
c) the appropriate methods, procedures and techniques for conducting the required checks.
d) proper evaluation of pilot performance including the detection of:
i) improper and insufficient training; and
ii) personal characteristics that could adversely affect safety.
e) the appropriate corrective action in the case of unsatisfactory checks.

f) the approved methods, procedures and limitations for performing the required normal, abnormal and emergency procedures in the aircraft.

13.8.2 The initial and transition flight training for pilot check airmen and instructors pilot must include the following:

a) enough in flight training and practice in conducting flight checks from the left and right pilot seats in the required normal, abnormal and emergency maneuvers to ensure his competence to conduct the pilot flight check and flight training required by this chapter.

b) the appropriate safety measures to be taken from either pilot seat for emergency situations that are likely to develop in training.

c) the potential results of improper or untimely safety measures during training.

13.8.3 Recurrent Training

a) Recurrent training of a Flight Instructor shall be considered to be fulfilled by a Pilot Proficiency Check in the case of a pilot whose license and rating is current.

b) In the case of a pilot whose license or rating is no longer valid, he shall complete an approved ground and flight recurrent training program that has been approved by the DG, CAAN and shall successfully complete a pilot proficiency check.

c) Recurrent Flight Training for Flight Instructors shall be as per 13.5.2.5.

## 13.9 FLIGHT ENGINEERS; Initial and Recurrent Flight training

13.9.1 Initial and recurrent flight engineers training programs must include at least the following-

a) Training and Practice in procedures related to the carrying out of flight engineer duties and functions. This training and practice may be accomplished either in flight or in an aircraft simulator.

b) A flight check that includes -

i) Preflight inspection
ii) Inflight performance of assigned duties accomplished from the flight engineer station during taxi, run-up, take-off, climb cruise, descent, approach and landings.
iii) Accomplishment of other functions, such as fuel management and preparation of fuel consumption records and normal and emergency or alternate operation of all aircraft flight systems, performed either inflight in an aircraft simulator or in a training device.

13.9.2 Flight engineers may complete the entire flight check in an approved helicopter simulator on type.

13.9.3 Initial flight training must include at least 5 hours of programmed flight training.

13.9.4 If the certificate holders approved training program includes a course of training utilizing an aircraft simulator or other training device, each flight engineer must successfully complete the followings:

a) training and practice in at least all of the assigned duties, procedures and functions required by this chapter; and

b) a flight check to a flight engineer level of proficiency in the assigned duties, procedures and functions.

13.9.5 Recurrent Ground and Flight Training must be conducted once within a one calendar year.

## 13.10 INDOCTRINATION GROUND TRAINING

**Crew Member, Flight Engineer and Dispatcher**

13.10.1 Each training program must provide the following basic indoctrination ground training as appropriate to the particular assignment of the crew member or dispatcher:

a) duties and responsibilities of crew members or dispatchers, as applicable.

b) appropriate provisions of the Civil Aviation Regulations.
c) contents of the certificate holders operating certificate and operations specifications.

d) appropriate provisions of the certificate holders operating manual and

e) company manuals.

## 13.11 CREW MEMBER EMERGENCY TRAINING

13.11.1 Each training program must provide the emergency training set forth in this chapter with respect to each aircraft type model and configuration, each required crew member and each kind of operation conducted, in so far as appropriate for each crew member and the certificate holder.

13.11.2 Emergency training must provide the following:

a) instruction in emergency assignments and procedures, including coordination among crew members.

b) individual instruction in the location, function and operation of emergency equipment including:

i) equipment used in ditching and evacuation.

ii) first aid equipment and its proper use.

iii) portable fire extinguishers, with emphasis on type of extinguisher to be used on different classes of fire; and

iv) emergency exits in the emergency mode with the evacuation slide pack attacked (if applicable), with training emphasis on the operation of the exits under adverse conditions.

c) Instructions in the handling of emergency situations including:

i) rapid decompression.

ii) fire in flight or on the surface and smoke control procedures with emphasis on electrical equipment and related circuit breakers located in cabin areas including all galleys, service centers, lifts, lavatories and movie screens.

iii) ditching and other evacuation, including, the evacuation of persons and their attendants, if any, who may need the assistance of another person to move expeditiously to an exit in the event of an emergency.

iv) illness, injury, or other abnormal situations involving passengers or crew members; and

v) hijacking and other unusual situations.

d) review and discussion of previous aircraft accidents and incidents.

13.11.3 Each crew member must perform at least the following emergency drills and actually operate the following emergency equipment during initial and recurrent training on each type aircraft in which they are to serve:

a) each type emergency exit in the emergency and normal mode.
b) each type fire extinguisher.
c) each type of emergency oxygen system.
d) emergency evacuation including the use of a slide.
e) donning, use and inflation of individual floatation means, if applicable.
f) ditching, if applicable, including but not limited to, as appropriate:

i) cockpit preparation and procedures.
ii) crew coordination.
iii) passenger briefing and cabin preparation.
iv) donning and inflation of life preserves.
v) removal from the aircraft and inflation of each type raft.
vi) transfer of each type slide pack from one door to another.
vii) deployment, inflation and detachment from the aircraft of each type of slide.
viii) use of life lines.
ix) boarding of passengers into raft or slide pack.

g) crew members who serve in operations above 25,000 feet must receive instruction in the following:

i) respiration.
ii) hypoxia.
iii) duration of consciousness without supplemental oxygen at altitude.
iv) gas expansion.
v) gas bubble formation.
vi) physical phenomena and incidents of decompression.

## 13.12 DIFFERENCE TRAINING; Crew Members and Dispatchers

13.12.1 Differences training for crew members and dispatchers must consist of at least the following, as applicable to their assigned duties and responsibilities:

a) instruction in each appropriate subject or part thereof required for initial ground training in the aircraft unless the Director General finds that particular subjects are not necessary.

b) flight training in each appropriate maneuver or procedure required for initial flight training in the aircraft unless the Director General finds that particular maneuvers or procedures are not necessary.

c) the number of programmed hours of ground and flight training determined by the Director General to be necessary for the aircraft, the operator the crew member or the aircraft dispatcher involved.

13.12.2 Differences training for all variations of a particular type aircraft may be included in initial, transition, upgrading and recurrent training for the aircraft.

## 13.13 SAFE TRAINING PRACTICES

13.13.1 The goal of adherence of safe training practices by all pilots is to achieve an effective and safe level of pilot proficiency by practicing emergency procedures in a manner which will ensure that the practice does not become the real thing. Training beyond this level can be hazardous and unnecessary.

13.13.2 Safe practices during training:

a) To preserve the highest degree of safety during training or checking, those conducting emergency exercises are to ensure that candidates are completely briefed on all aspects of the flight.

b) No sudden actions such as an engine shutdown or feathering are permitted. The check or training pilot shall state the exercise required i.e. "engine fire drill".

c) The pilots under training or checking shall complete the check in accordance with published Flight Manual Procedures and operator's Operating Procedures.

d) The flying pilot will primarily fly the aircraft and delegate duties to the non-flying pilot.

e) The non-flying pilot will act on the memory items then using the emergency written checklist, complete the remainder of the check.

f) Emergency procedures requiring the closing of a throttle, condition lever, mixture control, feathering of a propeller or shutting down of any major system must be confirmed by both pilots before the lever or switch is moved.

13.13.3 Activation of fire bar handles, fuel firewall shutoff valves, fuel/oil shutoffs etc. are to be SIMULATED only or activated above 5000' AGL.

13.13.4 Multiple emergencies, except those which follow logically from the first malfunction, shall not be completed at the same time.

13.13.5 It is not possible to compile safe training practices for all emergency procedures. Training sequences not specified may be conducted by training or check pilots. Common sense is essential in the preservation of flight safety.

13.13.6 Instrument checks should not be performed during an IMC or at night unless the aircraft is equipped with either approved thunderstorm detection equipment or approved airborne weather radar equipment.

## 13.14 TOLERANCE FOR CPL INITIAL AND RECURRENT CHECKS

| PROFILE | CPL level skill test for initial endorsements | IR skill test and all other rating issues, revalidations and renewals |
|---|---|---|
| **ALTITUDE OR HEIGHT** | | |
| Normal Flight | +/- 100 ft | +/- 100 ft |
| With simulated major emergency | +/- 150 ft | +/- 100 ft |
| Hovering IGE | +/- 2 ft | +/- 2 ft |
| Limited or partial panel | +/- 200 ft | +/- 200 ft |
| Starting go-around at decision alt/ht | | +50 ft / -0 ft |
| Minimum descent altitude / height | | +50 ft / -0 ft |
| 'not below' minima (from FAF altitude down to MDA/H) | | -0 ft |
| Circling minima | | +100 ft / - 0 ft |
| **TRACKING** | | |
| At all times when using a single-needle display | +/- $10^0$ | +/- $5^0$ |
| At all times when using a deviation bar display | Full scale deflection | Half scale deflection azimuth and glidepath (precision approach) |
| DME arcing | | +/- 1 nm |

| | | |
|---|---|---|
| **HEADING** | | |
| Normal flight | +/- $10^0$ | +/- $5^0$ |
| With simulated major emergency | +/- $15^0$ | +/- $10^0$ |
| Limited or partial panel | +/- $15^0$ | +/- $15^0$ |
| **SPEED** | | |
| Take-off and approach | +10 kts / -5 kts | +10 kts / -5 kts |
| Take-off and approach multi-engine | +/- 5 kts | +/- 5kts |
| All other flight regimes | +/- 10 kts | +/- 10 kts |
| Limited or partial panel | | +/- 10 kts |
| With simulated engine failure | | +10 / -5 kts |
| **GROUND DRIFT** | | |
| Take Off hover IGE | +/- 3 ft | +/- 3ft |
| Landing | No sideways or backwards movement | +/- 2 ft vertical Zero feet rearwards or lateral flight |

Notes : 1. Prevailing weather condition must be taken into consideration.
2. Guidelines on required maneuvers for an initial and recurrent pilot proficiency check are mentioned in Appendix B (helicopter).

## 13.15 RESERVED

## 13.16 GRADINGS SAMPLE

### 13.16.1 Grading Sample for Initial and Recurrent Trainings

Each exercise will be marked:

1 = Proficiency
2 = Normal Progression
3 = Additional Training Required
4 = Unsatisfactory
N/A = Not Applicable
D = Discussed and Simulated
T = Trained Check-Check not Required

### 13.16.2 Grading Sample for PPC and Check rides

(a) Satisfactory (S)- All exercises completed within tolerances.
A sequence shall be rated "satisfactory" if:

1. It contains minor errors only;
2. Airspeed control is acceptable for prevailing condition;
3. Altitude control is acceptable for prevailing condition;
4. Due to lack of experience, the candidate's flying is not as smooth and accurate as would be expected from an experienced on-type-candidate.

5. Rating of "satisfactory" on initial proficiency check (check-ride flights) is necessary for the endorsement by CAAN.
6. The applicant PUC shall not be permitted for flight check unless he successfully completes an oral examination on General Aerodynamics and Technical Knowledge related to the type of aircraft.

(b) Satisfactory with briefing (SB)- All exercises completed within tolerance but required briefing for minor errors.

A sequence shall be rated "satisfactory with briefing" if;

1. It is safe but contains minor errors due to misinterpretation of procedures and is repeated satisfactorily;
2. Aircraft control is safe but of a lower standard than would be expected;
3. An emergency procedure deviates from the check list but would not create a more hazardous situation if done in an actual emergency;
4. An approach, take-off, or landing briefing is not in accordance with the Company's Operations Manual or Company's Standard Operating Procedures;
5. A sequence deviates from Company's Standard Operating Procedures but can be corrected with a de-briefing.

(c) Unsatisfactory (US)- Exercises exceed tolerances and attempted gross error.

A sequence shall be rated "unsatisfactory" If:

1. Any attempt is made to follow a procedure which would violate an ATC clearance or endanger the aircraft;
2. An improper emergency procedure is used which would create a more hazardous situation than the original emergency.
3. The flight controls are grossly mishandled; or
4. Gross deviations in airspeed, altitude and direction occur.

Any unsatisfactory grading constitutes a failed check

*Note- Any sequences that is recorded as "Satisfactory with Briefing" or" Unsatisfactory" shall be summarized in the space provided. Procedures may be repeated, if in the check pilot's view, the candidate can perform the sequence correctly the second time.*

## 13.17 BRIEFING AND DE-BRIEFING PROCEDURES

13.17.1 Briefing:

A pre-flight briefing of the candidate is mandatory. It is expected that the candidate will fly the aircraft or simulator in accordance with the approved techniques and that he can do so within acceptable tolerances. The pre-flight briefing should therefore include the following:

a. The duration of flight test;

b. An outline of the proposed sequence of events;

c. The candidate should be prepared to demonstrate any procedure applicable to the aircraft, and will be expected to provide the initiative in response to any event;

d. It is anticipated that aircraft will be flown in accordance with:

i. Aircraft Flight Manual:

ii. Operations Manual Part D - Training;

iii. Company Operations Manual; and

iv. Standard Operating Procedures.

e. Simulated emergencies will be introduced during the flight; however, the safety of flight must not be jeopardized at any time. He is expected to complete all actions that can be completed in the simulator and indicate those actions that must be simulated in the aircraft. All simulated emergencies given by the check pilot in the aircraft will be prefixed by the word "simulated".

f. The candidate will not be subjected to multiple unrelated system failures, although related failures may be introduced to demonstrate specific emergency procedure, e.g. multiple engine failure, total hydraulic failure etc.

g. When conducting flight checks in a simulator, emergency situations caused by an inappropriate response by the candidate will not be corrected by the check pilot.

h. The simulated prevailing weather will be at or below minima for the approach being carried out.

i. If "Field-in-Sight" is not indicated by the check pilot, at the published approach minima, a missed approach procedure or other appropriate action is to be carried out.

13.17.2 De-Briefing:

a. Except where a candidate's ability is border lined and required considerable elevation, the candidate should always be advised at the conclusion of the flight test whether he has been rated "satisfactory" or "unsatisfactory".

b. If the check is "satisfactory", the candidate should be advised accordingly and de-briefed following the sequence of occurrence. When necessary, the candidate should be questioned to determine motive, reasoning and knowledge of a procedure before he is offered constructive criticism of a particular technique he has used. Criticism must always be given the correct emphasis, depending on its relative importance in the entire operation. Instance where the candidate indicates a particularly high standard of ability or demonstrates sound judgement, should be mentioned to balance the criticism.

c. If the check is "unsatisfactory", the candidate must be advised accordingly and the specific instances resulting in the assessment discussed. After discussion of the unacceptable points, the de-briefing should continue in the sequence of occurrence.

## 13.18 INSTRUMENT RATING

13.18.1 General requirement for check

Candidates will be evaluated on the accuracy of their general instrument flying, operational planning, adherence to ATC procedures and ability to execute let down and approach procedures to the standard required.

13.18.2 Equipment to be provided

(1) Instrument Flying Hood or suitable cockpit screens for simulated instrument flight shall be provided.

(2) Disks or other means for blanking out certain flight and navigation instruments shall be provided.

13.18.3 Standards

1. Descent below decision height (DH) or minimum descent altitude (MDA) will involve mandatory failure of the examination.

2. If one item of the flight examination (other than descent below minima) is failed by the candidate, this item may be repeated once. Should the candidate fail that item again, he will have failed the complete test.

3. Tolerance limit for flight maneuvers are intended for calm , stable air conditions. Due allowance for adverse weather conditions and aircraft type may be made by the examiner if so required.

13.18.4 Navigation Aids and Equipment

1. The aircraft used for examination shall be equipped with functioning instruments and equipment required by Annex 6 (operation of aircraft) section 6.9 and 6.10 as appropriate for flight under IFR conditions and at night.

2. The flight check will be conducted at an aerodrome or aerodromes equipped with VOR/DME and NDB approach facilities.

13.18.5 Lighting System

For the night rating, candidate should have additional thorough knowledge of aerodrome lighting system, navigational lighting system as well as cockpit and aircraft interior.

## 13.19 NIGHT FLIGHT QUALIFICATION

13.19.1 General Procedure

The Instructor Pilot will be responsible to explain each and every item and ensure that the student understands them well before commencement of night flight training.

a) As per requirements, the operator will initiate the night flight training to the pilot, who holds IR valid for the type of aircraft he is flying, in accordance with the training plan. Training and check should be conducted by night rated Instructor Pilot.

b) Briefing and de-briefing procedures will be conducted as mentioned in 13.17 of this section.

c) Items which will result in failure of the flight test at night is mentioned in 13.20

13.19.2 Essential Background Knowledge

a) The considerations with respect to night vision, aero-medical factors for night flying, how to adapt to reduced lighting, and the need to avoid exposure to bright light.

b) Airport beacons and runway lighting systems, turn-off points, taxiway lighting, strobes, VASIS threshold and runway and lighting, and obstruction light.

c) Additional considerations for the aircraft external line check:

(1) Position, landing and taxi-light serviceability check.
(2) Instrument lighting-proper level and adjustment.
(3) Serviceable flashlight, spare fuses.

d) The extra care necessary, due to deceptive speed illusion, for taxiing when ground references not visible and minima is reached.

e) The proposed flight training in its various stages emphasizing the extra care necessary when taxiing at night, systematic check, and the need to maintain sufficient generator/alternator output to meet the additions demands when taxiing lights and other night illumination is used.

f) For take-off, stress the basic similarity to that of a daylight take-off, except for the necessity to supplement visual references with instrument references to establish a safe climb-out.

g) For the approach and landing, emphasize how runway lights can be used to assess drift, constant approach angle, and as a landing reference to approach and runway light.

13.19.3 Advice to Instructor

a) Before commencing night flying, a student should be reasonably proficient in instrument flying.

b) Ensure the student is thoroughly aware of the entire airport lighting system. Review the lights and visual signals that could be expected from the control tower in the event of radio failure.

c) Insist on extreme care being taken while taxiing, due to the difficulty in estimating speed and distance.

d) Point out the importance of the generator or alternator charging rate as both radio equipment and lighting depend upon it.

e) Point out that night flying is a combination of visual and instrument flight and that the degree of instrument reference depends on the clarity of the horizon, or dependable ground lights.

f) Insist on the student keeping a sharp look-out for other aircraft at all times. Do not allow him to concentrate only inside the cock-pit.

g) The student should be given practice in landing with and without the use of a landing light.

## 13.20 FAILURE OF THE FLIGHT TEST

Following are the items which will result in failure of the flight test:

a) Failure to fly the aircraft within the prescribed tolerance.

b) Failure to check the flight instruments or radio equipment before flight.

c) Failure to check before flight or to use correctly in flight any one of the de-icing or anti-icing.

d) Failure to check the electrical charging systems before flight.

e) Failure to apply the correct altimeter setting.

f) Failure to check any vital action item contained in the appropriate check list provided by the manufacturer, which are vital to the safety of the aircraft being flown.

g) Failure to obtain ATC or simulated ATC clearances when necessary or to comply with such clearances

h) Failure to communicate with ATC using proper applicable terminology in both content and format, at any of the standard or requested reporting points except where reason for non-acceptance or non-compliance can be justified.

i) Failure to correctly select or identify the appropriate navigational aids.

j) Failure to follow the correct procedure in the event of communications failure.

k) Failure to identify failed engine.

l) By reason of lack of skill, knowledge or experience, he is unable to
   i) complete an orientation;
   ii) establish a holding pattern within the allocated airspace; or
   iii) maintain control of the aircraft.

## 13.21 TRAINING AND CHECK

13.21.1 An instructor of pilots and/or cabin crew who has imparted flight training to a student or a group of students, shall not conduct the final skill test or final clearance.

13.21.2 When there is only one Instructor or Check Pilot of the type for the purpose of training and checking pilots, the DG, CAAN may approve the same instructor to impart both the training and conduct the skill test or final clearance provided that the instructor has a proven record of unbiased trainings and checks, has not violated the Rules and Regulations of CAAN within the past two years and is determined to be fit for the duty by the DG, CAAN.

13.21.2 The training records must depict that flight training times recorded in the training records conform to that of the Aircraft Journey Logs and flight training times recorded in the training records conform to that of the airport traffic sheets

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# CHAPTER 14

# FLIGHT SIMULATION TRAINING DEVICE USER PERMISSION REQUIREMENTS

## 14.1 APPLICATION FOR USER PERMISSION

14.1.1 An applicant intending to use a Flight Simulation Training Device for type training purposes shall submit a written application to the DG, CAAN along with the following:

(a) The filled copy of the User Permission Form as mentioned in Appendix 2.
(b) The required fee structure as mentioned in Civil Aviation Regulations 2058.
(c) A copy of the latest evaluation report of the FSTD conducted by the relevant authority.
(d) A copy of the current Certificate of Approval of the FSTD provided by the relevant authority.
(e) A copy of the current Certificate of Approval of the Training Center provided by the relevant authority.
(f) The tentative date of the training program.
(g) The complete routine of the training program including the names and qualifications of the instructors.

## 14.2 FSTD ACCEPTANCE

14.2.1 The DG, CAAN may accept the tests conducted on and approvals awarded to FSTDs located abroad based on the standards set by the relevant authorities.

14.2.2 All markings on the FSTDs shall be in the English language.

14.2.3 FSTDs shall require an inspection from a CAAN Flight Operations Inspector or pilot prior to issuance of a User Permission.

14.2.4 All expenses for the Inspector incurred during the visit to the facility shall be borne by the applicant.

14.2.5 The air operator shall submit the latest copy of the evaluation report of the FSTD, issued by the national aviation authority or any other regulatory institutes.

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# CHAPTER 15

# OPERATIONS AT AN AERODROME AND AIRCRAFT

## 15.1 GENERAL

15.1.1 The Director general may specify such requirements relating to the ground operation and servicing of aircraft as he considers to be appropriate.

15.1.2 The Director General may specify such requirements related to the conduct of persons at an aerodrome as he may consider appropriate.

15.1.3 The Director General may specify such limitations on obstacles, obstructions, extraneous lighting, radio interference, or activities likely to attract birds at an aerodrome as he may consider appropriate.

15.1.4 A person on board an aircraft operating in Nepal, or on board a Nepalese Registered aircraft wherever it may be, shall comply with such requirements as may be specified by the DG, CAAN.

## 15.2 GROUND OPERATIONS

15.2.1 Fueling of aircraft

1) An aircraft shall not be refueled or defueled at an aerodrome;

   a) within 15 meters of a building, or

   b) at a time when passengers are embarking, or disembarking, or are on board, unless there are qualified personnel in the aircraft who are ready to initiate and direct an evacuation of the aircraft by the most practical and expeditious means available, and who are in two-way communication with the ground crew supervising the refueling.

2) Refueling and refueling of an aircraft shall be supervised by a person appointed by the owner or operator of the aircraft, or by a member of the flight crew, or by a supervisor appointed by the fuel supplier; the person supervising shall ensure that the aircraft is bonded to the fuelling hose and to the fuelling unit and that both are earthed, and that no source of flame or sparks is in the vicinity of the aircraft.

15.2.2 Engines to be run by qualified personnel

a) A person shall not start the engine of an aircraft on the ground, nor operate the controls of an aircraft engine which is running, unless that person is a pilot, or holding a rating on that aircraft, or is a licensed aircraft maintenance engineer or a member of an approved maintenance organization authorized to ground run the engines of that aircraft.

b) The engine or engines of an aircraft shall not be started unless chocks are in position in front of the main wheels, or the aircraft brakes, if any, are on.

c) No other persons other than the certified pilots are allowed to engage the rotors in helicopter.

15.2.3 Taxiing of aircraft

a) An aircraft shall not be taxied on the movement area of the aerodrome unless the person operating the controls of the aircraft is a pilot holding as rating on that aircraft, or is a person who has been properly authorized by the operator of the aircraft, or by his agent, has received instructions from the aerodrome manager or his representative in respect of the layout of the aerodrome, taxiing routes, and taxiway signals, and complies with instructions if any, related to taxiing issued by the Air Traffic Services Unit at that aerodrome where such a unit exists.

b) The person operating the aircraft controls while taxiing, or another person in the flight deck who is in communication with the person at the control, shall be qualified and licensed to use the radio telephone.

15.2.4 Compliance with noise abatement procedures

Pilot-in-command of aircraft taking off and landing and persons responsible for ground running aircraft engines at aerodromes shall comply with the procedures, if any, authorized by the Director General as a noise abatement measure except where in the opinion of the pilot-in-command it would be unsafe to do so.

15.2.5 Parking of Aircraft

a) An aircraft shall not be parked in any position on an aerodrome other than as prescribed by the aerodrome manager or the officer in duty in the Air Traffic Services Unit at the aerodrome.

b) Except with the permission in writing of the DG, CAAN, an aircraft shall not be parked on the movement areas of an aerodrome for a period exceeding four weeks if the Certificate of Airworthiness issued in respect of that aircraft is no longer valid.

c) In the case of an aircraft which is parked in contravention of this directive, the owner shall remove it in compliance with such instructions as may be issued by the DG, CAAN. Where the owner fails to comply within a reasonable period of time with such an instruction, the

DG, CAAN or an authorized representative may take such steps as may be necessary to remove the aircraft in compliance with the instruction.

## 15.3 MOVEMENT OF PERSONS AND VEHICLE AT AN AERODROME

15.3.1 Unauthorized persons and vehicles

No person shall enter and no vehicle shall be driven on the maneuvering area on aerodrome except with the permission of, and in compliance with instructions issued by, an officer on duty in the Air Traffic Services Unit at that aerodrome, or in the absence of such a unit, without the permission of the aerodrome manager at that aerodrome.

15.3.2 A person shall not operate a vehicle which is authorized to be driven on the movement area of an aerodrome, unless that person has been authorized to operate that vehicle by the DG, CAAN or the aerodrome manager.

15.3.3 Taxing on a Movement Area

An aircraft shall not be taxied on the movement area of an aerodrome unless the person at the controls:

a) has been duly authorized by the operator or a designated agent.

b) is competent to taxi the aircraft

c) is qualified to use the radio telephone and

d) has received instruction from a competent person in respect of aerodrome layout, routes, signs, marking, lights, air traffic control (ATC) signals, and instructions, phraseology and procedures, and is able to conform to the operational standards required for safe aeroplane movement at the aerodrome.

15.3.4 Persons not to smoke or create a fire hazard

No person shall smoke or generate a naked flame in any area of an aerodrome which is designated as a "no smoking" area by the aerodrome manager or do any act likely to create a fire hazard in any area of an aerodrome.

15.3.5 Trading at an aerodrome

a) No person shall carry on any trade or business at an aerodrome except with the approval of the DG, CAAN and under such terms and conditions as he may direct.
b) No person at an aerodrome shall solicit any person for any purpose except with the permission of aerodrome manager.
c) No person shall operate for hire at any aerodrome any taxi cab, or omnibus, or other vehicle carrying passengers except with the permission of the DG, CAAN or the aerodrome manager and in such a way as he may direct.

15.3.6 Movement of Vehicle

a) No person shall operate any motor vehicle at an aerodrome other than in accordance with any regulations or directions issued by the aerodrome manager concerning motor vehicles and road traffic at that aerodrome.

b) No person shall operate a motor or other vehicle at an aerodrome contrary to any sign erected or displayed for the control of vehicles by the aerodrome manager.

c) No person shall park any motor or other vehicle at an aerodrome other than as authorized by the aerodrome manager.

d) No person shall load or disembark passengers from a vehicle at an aerodrome other than at places designated for that purpose by the aerodrome manager.

e) No person shall operate a motor or other vehicle at an aerodrome while under the influence of alcoholic liquor or drugs to an extent that his ability to operate the vehicle is impaired.

f) No person shall operate a motor or other vehicle at an aerodrome other than on the roads, paths, or places provided for the use of the particular type or class of vehicle, or occupy such roads, paths or places in such a manner as to hinder or obstruct any use of them.

g) Motor or other vehicles shall give way to pedestrians in areas at an aerodrome which are areas designated for use by pedestrians.

h) For the purpose of the foregoing, "at an aerodrome" shall mean all areas within an aerodrome to which the public has access.

15.3.7 Reporting of incidents/accidents

Any person who is involved in any incident/accident at an aerodrome and all the witnesses to any incident/accident shall report without delay to the aerodrome manager or to the police at the aerodrome.

15.3.8 Articles lost and found

Any person finding a lost article shall deposit it with the aerodrome manager. Such articles which are unclaimed within thirty days, or in the case of perishable foodstuffs twelve hours, shall be disposed of in such a manner as may be directed from time to time by the DG, CAAN.

15.3.9 Keeping of animals

No person shall keep domestic or other animal at an aerodrome except with the permission of, and in accordance with such restrictions and conditions as may be imposed by the aerodrome manager.

15.3.10 Animals constituting a danger

Any bird/animal constituting a danger to the aircraft, or to the public at an aerodrome, may be shot by the persons authorized by DG, CAAN.

15.3.11 Firearms and offensive weapons

a) A person shall not enter an aerodrome while in possession of any firearms, explosives, offensive weapons or other munitions of war unless that person is a duly authorized member of the Armed Forces of Nepal, or is a passenger intending to surrender such firearms or other weapons prior to carriage by air, or is a person authorized by Nepal Government or by the DG, CAAN to carry firearms or other weapons.

b) A person, other than a duly authorized person, in possession of firearms, explosives, offensive weapons or other munitions of war shall surrender them to Security Force at the aerodrome for a period of time that person is in that aerodrome, or a passenger, shall surrender them to the person in charge of loading the aircraft on which that passenger intends to travel, before boarding the aircraft.

15.3.12 Damage to aerodrome property

No person shall destroy or deface any building, sign, equipment, marker or other property at an aerodrome.

15.3.13 Dumping of trash

a) No person shall dispose of garbage, nor deposit refuse or any other object at an aerodrome except by placing it in the receptacle provided for the purpose.

b) No person shall abandon any property or other thing at an aerodrome.

15.3.14 Prohibition of gambling

No person shall engage in gambling, or operate a gambling device, at an aerodrome.

15.3.15 Disorderly conduct

No person shall create any nuisance or any disorderly act at an aerodrome, or use a sanitary convenience in a disorderly manner.

15.3.16 Prevention of fire

a) Combustible liquids shall not be stored at an aerodrome unless they are stored in such places and subject to such conditions as may be specified by the DG, CAAN or the aerodrome manager, except that this shall not apply to fuel contained in the fuel tank of an aircraft, a motor vehicle or other motor powered appliance.

b) No person shall keep any oiled waste, waste oil, cleaning rags, or substances liable to suffer spontaneous combustion, or which are otherwise inflammable, on or near to aircraft on the ground, near any fuelling unit, hanger, or workshop, or other building or installation in which any flammable material is stored. Waste substances such as those referred to in this sub paragraph shall be disposed of daily in such a manner as may be specified by the DG, CAAN or the aerodrome manager.

c) An owner, tenant, or occupant of any premises at an aerodrome shall provide on these premises, and maintain in good working order, fire fighting appliances and equipment to a standard approved by the DG, CAAN and during working hours, have available on the premises sufficient personnel trained in the use of such appliances and equipment.

d) No owner, occupant or tenant of any building at an aerodrome shall install or cause to be installed for use in that building, any engine or electrical apparatus of any kind, or make or cause to be made, any alternation or addition to existing electrical installations in any building without the approval in writing of the DG, CAAN.

e) Facilities for battery charging shall not be installed without the approval in writing of the DG, CAAN or the aerodrome manager, and if installed shall not be left unattended unless the power supply has been switched off and the battery leads disconnected.

f) In the event of a fire occurring in any premises, hanger, or workshop, or in any other places at an aerodrome, a report in writing giving all the circumstances shall be submitted to the aerodrome manager within twenty-four hours by the person occupying or responsible for, the place of the occurrence.

15.3.17 Danger from stock or equipment

No occupant of any hanger, or premises at an aerodrome utilized for commercial purposes shall store or stock, or permit to be stored and stocked, any material or equipment in such a manner as to constitute a danger to persons or property.

15.3.18 Provision of first-aid kits

All tenants or lessees of hangers, workshops, or other premises utilized for commercial purposes at an aerodrome shall provide first-aid kits of a type approved by the DG, CAAN or the aerodrome manager, located in such hangers, workshops or premises at a conveniently accessible place.

15.3.19 Prohibition of entry

No person shall enter any Air Traffic Service Unit, any hangar, any customs area, any communication center, any movement area or maneuvering area, or passenger arrival and departure area, except

a) persons lawfully assigned to duty therein ;

b) persons authorized to enter by the Director General or the aerodrome manager, or the Security Force ;

c) passengers entering the movement area and the arrival and departure lounge for the purpose of disembarking or embarking ; or

d) persons authorized by the Collector of Customs or the Commissioner of Excise with the permission of the DG, CAAN or the aerodrome manager, or the Security Force.

15.3.20 Aerodrome Restricted Areas

No person shall enter any area designated by the DG, CAAN or the Aerodrome manager as an aerodrome restricted area except with the permission of the DG, CAAN or the aerodrome manager, and on such terms as may be included in the permission.

## 15.4 SAFEGUARDING AT AERODROMES

15.4.1 Limitation of obstructions

a) No person shall erect any temporary or permanent structure, nor position a vehicle or other mobile object on or in the vicinity of an aerodrome that will protrude through any obstacle limitation at that aerodrome.

b) for the purpose of this rule an obstacle limitation surface at an aerodrome shall be those surface defined by the DG, CAAN in respect of that aerodrome in Air Navigation Directive.

c) In the event that a person erects a structure or positions a vehicle or other mobile objects in contravention of this directive, the DG, CAAN shall take such action as he considers fit to cause the infringing object to be removed and shall not be liable for damage so caused . Any costs incurred by the DG, CAAN in taking such action shall be borne by the person causing the infringement.

15.4.2 Limitations of lights

a) No person shall operate a light in the vicinity of an aerodrome which because of its glare is liable to dazzle pilots of aircraft taking off or landing at that aerodrome, or which can be mistaken for an aeronautical ground light.

b) If such a light is operated it shall be extinguished or satisfactorily screened immediately upon notice being given to the person or persons operating the lights, by the DG, CAAN.

15.4.3 Interference with communications or navigational aids

No person shall operate a radio station or electrical equipment in the vicinity of an aerodrome, or of a radio aid to navigation which is serving an airway, an air route, or an approach to an aerodrome which is liable to cause interference with radio communication between aircraft and an Air Traffic Services unit, or which is liable to disturb the signal from a navigational radio aid.

15.4.4 Measures to avoid attraction of birds

a) No person shall leave waste foodstuffs on, or bring waste foodstuffs onto, an area of land to which this paragraph applies.

b) The DG, CAAN may, by notice in writing, require the owner of land where foodstuffs are, if that land is within an area to which this paragraph applies, to remove the waste foodstuffs or to deal with it within a time and in a manner as specified in the notice.

c) A person shall not fail to comply with the requirement of a notice served on him under sub paragraph (2)

d) For the purpose of this paragraph:

"area of land" means the area of land lying within a radius of 8 kms from either end of a runway at an aerodrome ; and

"waste foodstuffs" includes other waste substances attractive to birds.

## 15.5 CONDUCT OF PERSONS IN AN AIRCRAFT

15.5.1 Persons not to stow away on aircraft

A person shall not secrete himself in an aircraft or have access without the consent of the pilot-in-command or the operator of the aircraft.

15.5.2 Behavior of persons in an aircraft

A person shall not, while in an aircraft:

a) interfere with a crew member ;
b) behave in a disorderly or offensive manner ; or
c) do any act that threatens the safety of the aircraft or of persons on board the aircraft.

15.5.3 Persons not to carry weapons

No passenger on board an aircraft shall carry or have in his charge any weapon except that a weapon that is not designed for use in warfare, or against the person, may be carried as passenger baggage provided it is stowed so as to be inaccessible to passengers during flight, and if it is a firearm, is unloaded.

15.5.4 Restrictions on smoking in aircraft

A person shall not smoke when on board an aircraft registered in Nepal :

a) in those areas in the aircraft designated as non-smoking areas; and

b) at any time when the cabin crew or the flight crew of the aircraft indicate either verbally or by means of signs that smoking is prohibited.

15.5.5 Consumption of intoxicating liquor or drugs

a) No person shall enter an aircraft while under the influence of intoxicating liquor, or drugs, nor shall any person consume intoxicating liquor, or drugs, in an aircraft registered in Nepal so as to become intoxicated.

b) No person shall administer narcotic or hallucinogenic drugs except in the case of a person under qualified medical supervision.

15.5.6 Carriage of drugs

Narcotic drugs, mood changing or hallucinogenic drugs, depressant or stimulant drugs, or marijuana shall not be carried in an aircraft except as a medicament prescribed for the individual use of a passenger by a qualified medical practitioner or as part of the approved emergency medical kit approved by the DG, CAAN.

15.5.7 Entry to flight deck

a) A person shall not enter the flight crew compartment of an aircraft, when the aircraft is in flight unless he is a member of the crew of the aircraft or has the permission of the pilot-in-command, or is a person authorized by the DG, CAAN to carry out a flight inspection of the aircraft operation, or flight checks of members of its crew.

b) A pilot seat or other operating crew position in an aircraft shall not be occupied by any person other than a member of the operating crew of the aircraft who is licensed and qualified for the duties associated with that seat or position, or by a person authorized by the DG, CAAN to carry out flight inspections or flight checks in that aircraft.

c) The provisions of this Paragraph notwithstanding, the Pilot-in-command of an aircraft shall have the authority to refuse to permit and person to enter the flight crew compartment during flight, or to occupy a pilot seat or other operating crew position, if in his opinion, the presence of that person, or his occupancy of a pilot seat or other operating crew position, would endanger the aircraft.

d) If the person who is refused permission under the provisions of sub paragraph (c) is a person authorized by the DG, CAAN to carry out flight inspections or flight checks in that aircraft, the pilot-in-command shall state the reasons for his refusal to that person and immediately after completion of the flight shall furnish a report in writing to the DG, CAAN.

15.5.8 Authority of the pilot-in-command

The pilot-in-command of an aircraft, with such assistance as he requires, may:

a) take such action, including the removal of a person from the aircraft or the placing of a person under restraint or custody by force, as he considers reasonably necessary to ensure compliance with these requirements in, or in relation to, the aircraft ; and

b) detain the passengers, crew, and cargo for such periods as he considers reasonably necessary to ensure compliance with these rules in, or in relation to, the aircraft.

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# CHAPTER 16

# REQUIREMENTS for HELICOPTER SLING LOAD and LONG LINE OPERATIONS

## 16.1 GENERAL

16.1.1 An helicopter pilot prior to commencing carriage of Sling loads and long lines, shall have received an authorization from the DG, CAAN.

16.1.2 The helicopter pilot shall have undertaken a Sling Loads/Long Line Operation Training Program as mentioned in Section 2 of this Chapter. The training program shall be a part of the Flight Crew Training Program.

16.1.3 The helicopter pilot shall have successfully demonstrated to the Instructor and the DG, CAAN of his ability to safely conduct such an operation.

16.1.4 The air operator shall, in addition to the training program for the pilot, also develop and conduct a Training program for the Marshaller engaged in Sling and Long Line Operations.

16.1.5 Permission must be acquired from the DG, CAAN prior to the initiation of any Sling and Long Line Operation.

## 16.2. TRAINING

### 16.2.1 *Aim of training course*

The aim of the training course is to train a candidate to the level of proficiency required for the issue of a helicopter sling load rating, and to provide the training necessary to act as pilot-in-command of a helicopter engaged in sling load operations.

### 16.2.2. *Contents and requirements of training course*

16.2.2.1 The candidate must have completed not less than 300 hours of flight time as pilot-in-command of a helicopter. The course must be conducted by a suitably qualified and authorized Instructor/Examiner.

16.2.2.2 The course comprises –

(a) a theoretical knowledge course; and
(b) a practical training course.

**16.2.3.** ***Theoretical knowledge course***

The theoretical knowledge course must comprise instruction on the following –

(a) the significance of operations within and outside ground effect, and the correct use of the relevant performance charts;
(b) the possible fore and aft C of G changes when picking up and releasing sling loads;
(c) the pre-flight checking and correct operation of the helicopter cargo hook equipment, including the emergency release;
(d) the importance of a full and correct briefing for all flight and ground crew members participating in the operation as regards to –

(i) pick-up and drop-off points;
(ii) load preparation and flight characteristics of different loads;
(ii) oscillation characteristics and their control;

(e) the care, selection, preparation and correct use of lifting equipment, including strops of various lengths, swivels, shackles, nets, and safety harnesses for cabin crew, as applicable;
(f) responsibilities and duties of cabin crew;
(g) aircraft-generated static, use of the static discharge pole and the correct procedure in this regard;
(h) marshalling signals;
(i) correct radio procedures and terminology for intercom communications between the pilot and cabin crew;
(j) pick-up and release procedures;
(k) safety and other equipment, including hand-held transceivers, hard hats, safety goggles, durable gloves, overalls and whistles;
(l) emergency procedures, including engine failure in the hover, strops getting fouled either with the helicopter or with other items, loads becoming difficult or impossible to control in flight, and jettisoning of loads; the effects of buildings and obstruction on prevailing winds, escape routes in the event of downdrafts, turbulence and engine failure;
(m) the pre-flight briefing which is given just before each flight, and which consists of a brief summary of the principal parts of the theoretical knowledge course, together with any particular points of airmanship, air traffic control, and meteorology pertaining to the flight; and
(n) the relevant air law aspects.

### 16.2.4. *Practical training course*

#### 16.2.4.1 In-flight instruction

A full briefing must be given during flight, covering the following:

(a) Airmanship –

(i) The suitability of pick-up and drop areas in respect of size, shape, surface, slope, approach and take-off paths and obstructions;
(ii) Helicopter operation with due regard to such matters as power in the hover, power limitations, hovering into the wind, position of ground crew, and obstructions;
(iii) The limits for the relevant conditions;
(iv) Good lookout at all times;
(v) Built-up areas and gatherings of people must be avoided when a load is suspended below the helicopter, provided that where the operation is to be conducted within a built-up area, safe flight routes must be established and approved by the DG, CAAN;
(vi) Cabin crew, if used, must be safely secured to the helicopter at all times by means of a safety harness or seat belt.

(b) Hook-up and transition –

(i) Demonstrate the positioning of the helicopter accurately above the load using the techniques of marshalling either by radio, visual signals, mirror or cabin crew intercom;

Note: When a cabin crew member is used for marshalling, the pilot must strictly obey his or her instructions at all times, except if the helicopter and its occupants would be placed in jeopardy by doing so;

(ii) Demonstrate the pick-up and the transition to forward flight when at a safe height;

(iii) The appropriate cruise speed should take into account the load's flight characteristics, the environment, level of turbulence and engine power available;

(iv) Demonstrate control of the load during flight and procedure to be followed if the load becomes difficult or impossible to control. For example, if the load starts oscillating, the pilot should reduce power and enter a gentle turn left or right, or bring the helicopter to a stationary hover; this generally will alleviate the condition. The load should only be jettisoned in extreme cases when the helicopter or its occupants are at risk and then only over uninhabited areas.

(c) Approach and drop-off –

(i) The approach should be cautious and fairly shallow, taking into account the distance the load is beneath the aircraft and above the surface;

(ii) The transition to the hover should be made high, to ensure adequate clearance between the load and the surface or ground obstacles;

(iii) Directional information should be provided by the radio, visual signals or cabin crew during the final stages of the approach;

(iv) Demonstrate positioning the load over the drop-off point and lowering it to the surface or its position, using the techniques of marshalling either by radio, visual signals, mirror or cabin crew intercom;

(v) Demonstrate releasing the load, using the normal release method and the emergency release method.

(d) Common faults –

(i) Lack of precision when hovering inside ground effect or outside ground effect;

(ii) Lack of appreciation for ground clearance with an underslung load;

(iii) Vertical drift when lifting and lowering the load;

(iv) Horizontal drift when lifting and lowering the load;

(v) Jerky pick-up and drop-off;

(vi) Pilot-induced oscillations due to over-controlling on the cyclic;

(vii) The effects of trying to counter oscillations in flight using cyclic instead of power and speed.

**16.2.4.2 Air exercises**

**Exercise 1: Hook-up procedure**

(a) Approach the hook-up area using –

(i) ground marshaller;
(ii) radio;
(iii) cabin crew intercom; and
(iv) helicopter mirror.

(b) Establish a steady hover using –

(i) short strop;
(ii) long strop.

(c) Once the load has been hooked up, take up the slack while monitoring the power required to hover before lifting the helicopter vertically until the load is well clear of the surface or obstacles, as communicated/established by each of the methods listed under paragraph (a) above.

(d) Once the load is clear, transit to forward flight.

**Exercise 2: In-flight**

(a) Observe $V_{ne}$ as established from the flight manual or dictated by the load, while handling the controls as smoothly as possible;

(b) Reduce power and enter a gentle turn to either left or right, or bring the helicopter to a stationary hover, to demonstrate the technique for bringing an oscillating load under control;

(c) Avoid any built-up or inhabited areas during flight with a sling load.

**Exercise 3: Drop-off procedure**

(a) Approach the drop-off area at a shallow angle using –

(i) ground marshaller;
(ii) radio;
(iii) cabin crew intercom; and
(iv) helicopter mirror;

(b) Terminate the approach in a high hover with the load well clear of the surface or ground obstacles as communicated/established by each of the methods listed under paragraph (a) above;

(c) Maintain a steady inside ground effect hover or outside ground effect hover while monitoring the power required to hover;

(d) Position the load over the drop-off point;

(e) Once in position, lower the load vertically until it contacts the surface and then jettison it using –

(i) the normal release system; or
(ii) the emergency release system.

*Note: Both normal and emergency release methods are to be practised.*

### 16.2.4.3 Post-flight discussion

The post-flight discussion reviews the exercise and can be used to amplify or clarify any particular point or difficulty, thus consolidating the exercise as a whole.

**16.2.5. *Skills test***

The applicant shall *demonstrate* competency in the aspects of subparagraph 4.2. The operator shall develop such a form for the use of the skill test.

## 16.3 SLING LOAD/LONG LINE CURRENCY

16.3.1 The flight crew members involved in Sling Load and/or Long Line operations shall be valid for a maximum of 12 months.

16.3.2 The currency required under 2.6.1 shall include at least one such operation within the last six months. Failure of the currency shall require at least one such Sling/Long Line operation be conducted with an Instructor/Examiner Pilot prior to being released for normal solo operations.

16.3.3 Sling Load and/or Long Line operation conducted as a training session during the half yearly proficiency check may be credited for the re-currency of such operations.

16.3.4 Flight crew members qualified for such operations shall undergo a re-current Sling Load and/or Long Line training session in such operations as part of the proficiency check.

16.3.5 In case where the validity of the Sling Load/Long Line operation has crossed 12 months, the flight crew member shall undergo recurrent ground training and a flight check by an Instructor or Examiner pilot.

# CHAPTER 17

# APPROVAL OF TRAINING ORGANIZATION

## 17.1 GENERAL

17.1.1 Operators shall establish and maintain a ground and flight training program approved by the DG, CAAN which ensures that all flight crew members are adequately trained to perform their assigned duties.

17.1.2 This Chapter prescribes condition for grant, extension and renewal of Director General approval to a training organization providing courses of instruction for trainees requiring flight crew licenses and/or type ratings.

17.1.3 For the grant of endorsement or ratings in license, in any type of aircraft, it is mandatory that the applicant shall have successfully completed an approved course.

17.1.4 Upon training of an initial type conversion, the operator while conducting training is also required to arrange such training for CAAN authorized person.

17.1.5 The DG, CAAN may in any case, order an inspection of such training facilities, at any time, at his discretion. Such cost of inspection should be borne by the operator(s) or training organizer or training organization whoever is involved in applying for such approval as a service charge.

## 17.2 REQUIREMENTS FOR GRANT OR APPROVAL FOR ENDORSEMENT AND/OR TYPE COURSE

17.2.1 An organization proposing to conduct a course of instruction on a particular aircraft type for endorsement and type rating, may apply to the Director General for the course to be approved. The application should be accompanied by;

a) The name, qualification and experience of the instructor nominated to conduct the course.

b) A description of the classroom and the available facility.

c) A copy of the detailed course syllabus based on the programmed curriculum as required by Training Program Curriculum of this Section.

Note - Minimum of 10% (or the time for instructions) of the training time will be spent on system training, i.e. demonstration in actual aircraft.

d) A list of teaching and demonstration facilities, audio visual training aids maintained to a satisfactory standard, and other facilities to be used during the course to facilitate complete comprehension of the instruction given.

*Note - The ICAO Training Manual, Training Manual(s) prescribed by the manufacturer, Flight Manual and/or the syllabus available with Director General should be used as a guideline by training organization.*

e) A copy of the training notes or training manual with diagrams, charts and graphs to be used for the training.

f) The duration of course with not less than the hours as specified.

g) Written progress examinations to be held at the conclusion of each section or phase of training. Examination papers in use shall cover the complete syllabus or section of the syllabus concerned.

17.2.2 A training organization which has applied for approval may be granted a Certificate of Approval provided the requirements specified in para 11.2.1 are met and CAAN authorized person upon inspection establishes that,

a) The premises are clean and suitable.

b) The facilities are adequate for training to the standard required by the syllabus.

c) The library is adequate and all manuals in it are fully amended up to date.

17.2.3 The DG, CAAN may require that the course be monitored in whole for the first time by an authorized person. During the session of course whenever deemed necessary, the authorized person may make necessary co-ordination with the course-manager or instructor in case of any deficiency in the part of the instruction. The approval of the course will be dependent on a favourable report on the actual conduct of the course by the authorized person.

17.2.4 The DG, CAAN may require the course to be monitored in part if the training for type conversion initial/recurrent, is similar to the one previously conducted, or is in repetitive nature and the authorized instructor/s and facilities have been provided.

## 17.3 GRANT OF APPROVAL

17.3.1 Approval of training organization to conduct repetitive type courses will be granted by issue of a Certificate of Approval and an associated schedule of conditions.

17.3.2 Approval of a single course which will not necessarily be repeated will be signified by issuance of a Letter of Approval to the organization arranging the course.

17.3.3 Any organization conducting an approved course shall issue each successful trainee with a certificate showing the following information;

a) The name of organization issuing the certificate.

b) The title of the course.

c) The approval status of the course.

d) The commencement and finishing dates of the course.

e) The full name of the trainee.

f) The examination percentages obtained during progress and final examinations.

17.3.4 A course certificate shall not be issued to any trainee Pilot or a crew who attended less than 80% of the course. A daily attendance record shall be maintained for each trainee and held available for inspection on request by an authorized person.

17.3.5 A course certificate issued to any participant who secures less than 70% marks in progress examinations conducted during the training period will not be recognized for licensing purposes. Training examination papers shall be preserved for six months following the conclusion of each course and shall be made available for inspection on request by an authorized person.

## 17.4 EXTENSION AND RENEWAL OF APPROVAL

17.4.1 An organization already approved to conduct certain courses may apply to conduct additional courses and such approval may be granted when the Director General is satisfied that the required conditions will be met.

17.4.2 A Certificate of Approval to a training organization will normally be valid for one year but may be renewed if the Director General is satisfied that the required condition for the grant of approval have been maintained. For this purpose any changes in staff, syllabus or facilities shall be notified to the Director General.

## 17.5 FOREIGN TRAINING ORGANIZATION

17.5.1 A Foreign Training organizations that holds a Certificate of Approval, issued by the Civil Aviation Authority, of a Contracting State of I.C.A.O. may be granted a Certificate of Approval by the DG, CAAN, provided that, the operator applying for such approval proves to the satisfaction of the Director General that requirements in para. 17.2.1 is met.

17.5.2 An operator using the services of a training organization located abroad for the first time shall apply in writing to the Chief of Flight Safety Standards Department for the approval of the training organization. Upon a satisfactory report by an inspector, approval shall be granted for the use of the training organization and its facilities including an FSTD if so equipped.

17.5.3 Two different certificates shall be issued:

a) Approval for the Training Organization; and/or
b) FSTD User Approval certificate for the use of the FSTD.

17.5.4 The DG, CAAN shall adopt the FSTD Approval certificates issued by the Authority where the simulator is located, for the use of training purposes for CAAN license holders.

17.5.5 All expenses incurred for the inspector during the inspection shall be borne by the Operator.

# APPENDIX 1.

# CONTENTS OF AN OPERATIONS MANUAL

*Supplementary to Section II, Chapter 2, 2.2.3.1*

## 1. ORGANIZATION

1.1 An operations manual, which may be issued in separate parts corresponding to specific aspects of operations, provided in accordance with Section II, Chapter 2, 2.2.3.1, shall be organized with the following contents and structure:

a) General;
b) Aircraft operating information;
c) Routes and aerodromes; and
d) Training.

## 2. CONTENTS

The operations manual referred to in 1.1 shall contain at the least the following:

### 2.1 General

2.1.1 Instructions outlining the responsibilities of operations personnel pertaining to the conduct of flight operations.

2.1.2 Information and policy relating to fatigue management including:

a) policies pertaining to the flight time, flight duty periods, duty period limitations and rest requirements for flight and cabin crew members in accordance with Section II, Chapter 2, 2.8;

b) RESERVED

2.1.3 A list of the navigation equipment to be carried, including any requirements relating to operations where performance-based navigation is prescribed.

2.1.4 The circumstances in which a radio listening watch is to be maintained.

2.1.5 The method for determining minimum flight altitudes.

2.1.6 The methods for determining heliport operating minima.

2.1.7 Safety precautions during refuelling with passengers on board.

2.1.8 Ground handling arrangements and procedures.

2.1.9 Procedures, as prescribed in Annex 12, for pilots-in-command observing an accident.

2.1.10 The flight crew for each type of operation including the designation of the succession of command.

2.1.11 Specific instructions for the computation of the quantities of fuel and oil to be carried, having regard to all circumstances of the operation including the possibility of loss of pressurization and the failure of one or more engines while en-route.

2.1.12 The conditions under which oxygen shall be used and the amount of oxygen determined in accordance with Section II, Chapter 2, 2.3.8.2.

2.1.13 Instructions for mass and balance control.

2.1.14 Instructions for the conduct and control of ground de-icing/anti-icing operations.

2.1.15 The specifications for the operational flight plan.

2.1.16 Standard operating procedures (SOP) for each phase of flight.

2.1.17 Instructions on the use of normal checklists and the timing of their use.

2.1.18 Departure contingency procedures.

2.1.19 Instructions on the maintenance of altitude awareness.

2.1.20 Instructions on the clarification and acceptance of ATC clearances, particularly where terrain clearance is involved.

2.1.21 Departure and approach briefings.

2.1.22 Route and destination familiarization.

2.1.23 Conditions required to commence or to continue an instrument approach.

2.1.24 Instructions for the conduct of precision and non-precision instrument approach procedures.

2.1.25 Allocation of flight crew duties and procedures for the management of crew workload during night and IMC instrument approach operations.

2.1.26 Information and instructions relating to the interception of civil aircraft including:

a) procedures, as prescribed in Attachment H, for pilots-in-command of intercepted aircraft; and

b) visual signals for use by intercepting and intercepted aircraft, as contained in Attachment H.

2.1.27 Details of the safety management system (SMS) provided in accordance with Chapters 3 and 4 of Annex 19.

2.1.28 Information and instructions on the carriage of dangerous goods, including action to be taken in the event of an emergency.

*Note.— Guidance material on the development of policies and procedures for dealing with dangerous goods incidents on board aircraft is contained in* Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods *(Doc 9481).*

2.1.29 Security instructions and guidance.

2.1.30 The search procedure checklist provided in accordance with Section II, Chapter 11, 11.1.

2.1.31 Instructions and training requirements for the use of head-up displays (HUD) or enhanced vision systems (EVS) equipment as applicable.

2.1.32 Instructions and training requirements for the use of the EFB, as applicable.

2.1.33 Procedures for the crew to handle suspected cases involving communicable disease as per paras 2.16.1 and 2.16.2.

2.1.34 Policy and procedures for flight crew to record and report on:

a) Routine meteorological observation during: - en-route, and - climb-out phases of the flight;
b) Special and other non-routine observations during any phase of the flight; and
c) Volcanic activity.

**2.2 Aircraft operating information**

2.2.1 Certification limitations and operating limitations.

2.2.2 The normal, abnormal and emergency procedures to be used by the flight crew and the checklists relating thereto as required by Section II, Chapter 4, 4.1.4.

2.2.3 Flight planning data for pre-flight and in-flight planning with different thrust/power and speed settings.

2.2.4 Instructions and data for mass and balance calculations.

2.2.5 Instructions for aircraft loading and securing of load.

2.2.6 Aircraft systems, associated controls and instructions for their use, as required by Section II, Chapter 4, 4.1.4.

2.2.7 The minimum equipment list for the helicopter types operated and specific operations authorized, including any requirements relating to operations where performance-based navigation is prescribed.

2.2.8 Checklist of emergency and safety equipment and instructions for its use.

2.2.9 Emergency evacuation procedures, including type-specific procedures, crew coordination, assignment of crew's emergency positions and the emergency duties assigned to each crew member.

2.2.10 The normal, abnormal and emergency procedures to be used by the cabin crew, the checklists relating thereto and aircraft systems information as required, including a statement related to the necessary procedures for the coordination between flight and cabin crew.

2.2.11 Survival and emergency equipment for different routes and the necessary procedures to verify its normal functioning before take-off, including procedures to determine the required amount of oxygen and the quantity available.

2.2.12 The ground-air visual signal code for use by survivors, as contained in Annex 12.

**2.3 Routes, aerodromes and heliports**

2.3.1 A route guide to ensure that the flight crew will have, for each flight, information relating to communication facilities, navigation aids, aerodromes, instrument approaches, instrument arrivals and instrument departures as applicable for the operation, and such other information as the operator may deem necessary for the proper conduct of flight operations.

2.3.2 The minimum flight altitudes for each route to be flown.

2.3.3 Heliport operating minima for each of the heliports that are likely to be used as heliports of intended landing or as alternate heliports.

2.3.4 The increase of heliport operating minima in case of degradation of approach or heliport facilities.

2.3.5 Instructions for the use of aerodrome operating minima for instrument approaches applicable to the use of HUD and EVS.

**2.4 Training**

2.4.1 Details of the flight crew training programme and requirements, as required by Section II, Chapter 7, 7.3.

2.4.2 Details of the cabin crew duties training programme as required by Section II, Chapter 10, 10.3.

2.4.3 Details of the flight operations officer/flight dispatcher training programme when employed in conjunction with a method of flight supervision in accordance with Section II, Chapter 2, 2.2.

*Note.— Details of the flight operations officer/flight dispatcher training programme are contained in Section II, Chapter 8, 8.3.*

# APPENDIX 2

## FSTD APPLICATION FORM

APPLICATION FOR PERMISSION TO USE A QUALIFIED FLIGHT SIMULATOR TRAINING DEVICE (FSTD) - HELICOPTER

*(FOR-H Chapter 14)*

**Print in block letters clearly with black ink (hand written or printed).**

**PERMISSION NUMBER (for CAAN)** ☐

**1. APPLICANT TYPE**

AOC Holder.....*complete section 2 a*

Ministry of Defense…*complete section 2 b*

Individual .....*complete section 2 c*

**2. APPLICANT DETAILS (The Applicant is the person responsible for payment of the fees)**

**2a) AOC Holder**

Registered Company Name in full

Registered Company Number

AOC Number

AOC issued by:

Office Address including phone, fax, email and website address

**Authorized Representative of Company**

This application to be signed by a Director or a person so authorized by the Company.

Title/Designation…….

First and Middle Names……

Surname……..

Telephone numbers (office and cell)……..

**2b Ministry of Defense or other non AOC holder organization**

Name of Organization…….

Address including telephone, fax, email and website address

**Authorized Representative**

This application to be signed by a person authorized by the organization named above to act on behalf of the same.

Title/Designation

First and Middle names

Last Name

**2c Individuals**

Title/Designation

First and Middle Names

Surname

Address including telephone, fax, email and website address

*A copy of Flight Crew License must accompany the application.*

**3. PERMISSION DETAILS (Tick as applicable)**

| | |
|---|---|
| Type of Permission requested | Initial ☐ Renewal ☐ |

**4. FSTD DETAILS (Tick or complete as applicable)**

| | |
|---|---|
| Current FSTD Qualification | UK CAA Qualified ☐<br>EASA Qualified ☐<br>FAA Qualified ☐<br>Any other Local Authority Qualified ☐<br>Name of local authority…….. …….…… |
| FSTD Type | FFS ☐ FTD ☐ |
| FSTD Identification Code and Qualification Level | FSTD code ……..<br>FSTD Qualification Level……<br>Other FSTD code……<br>Other FSTD Qualification Level…… |
| Aircraft Type<br>(If device is qualified for dual type, then mention the particular type or types requested; type includes all series within that type unless otherwise indicated) | |

| | |
|---|---|
| FSTD Location<br>(indicate city and country) | |
| FSTD Operator<br>(the FSTD Operator is the organization to whom the FSTD Qualification Certificate has been issued) | |

**5. <u>SCOPE OF PERMISSION</u> (Tick or complete the appropriate scope of the proposed approval)**

The Permission will remain valid till the date of expiry of the Qualification Certificate and will be dependent upon the continued qualification of the FSTD to the qualification level specified and on the currency of the navigation database.

5.1 Requested start date of this Permission:

5.2 CAAN FOI shall conduct an inspection of the FSTD as mentioned in FOR-H Chapter 14.2.

5.3 What is the purpose of your application for the Permission?

a) Initial type training and check for issuance of a flight crew license ☐

b) Initial or recurrent training and check for the issuance of an Instrument Rating ☐

c) Recurrent training for renewal or revalidation of a flight crew license ☐

d) Pilot Proficiency Check for renewal or revalidation of a flight crew license ☐

e) Pilot Proficiency Check for issuance or renewal of ratings or DCP privilege ☐

f) 90 days currency of a particular type ☐

g) LOFT checks (includes Route Check) ☐

h) Low Visibility Operations (LVO) training and testing (tick as applicable)

CAT I ☐ CAT II ☐ CAT IIIA ☐ CAT IIIB ☐

5.4 List the parts of a PPC that may be conducted in the FSTD and for which approval can be granted.

5.5 Regarding an Initial application, are there any differences between the FSTD configuration and your aircraft which affect training delivery?

YES ☐ NO ☐

Regarding an application for renewal of the Permission, has there been any change(s) to the FSTD or associated user's aircraft since the last renewal that would affect an existing differences list?

YES ☐ NO ☐

5.6 Where differences/changes have been identified in paragraph 5.5, the list of said differences/changes must be provided with this application form along with any identified / associated mitigation

**1.** In the event that this application is withdrawn by the applicant, a cancellation charge may be levied.

**2.** All expenses for the FOI pursuant to the processing of the approval shall be borne by the applicant.

**3. DECLARATION**

I have read the above mentioned clauses and hereby declare to the best of my knowledge the particulars entered on this application are accurate. I understand that a Permission may be granted in accordance with the requirements of FOR-H Chapter 14 para 14.1 and the relevant elements of FOR, PELR, DCP Manual for the purpose of training or checking of flight crew only. I hereby enclose the charges payable.

Name of applicant…….

Signature of applicant and date……
*Or*
Signature of authorized representative and date…….

Company or Organization name…….

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# APPENDIX 3

# PILOT PROFICIENCY CHECK (HELICOPTER)

1. A pilot proficiency check shall be conducted in such a manner that the pilot satisfactorily demonstrates his knowledge, skill and judgment relative to :

   a) the rotorcraft, its systems and components; and

   b) proper control of airspeed, configuration, direction, altitude and attitude of the rotorcraft in accordance with the procedures and limitations contained in the applicable approved aircraft flight manual, check list and other approved material applicable to the type of rotorcraft.

2. Each phase of a pilot proficiency check set out in an item of column I of the following table shall be performed in accordance with the procedures set out in column III of the table for the proficiency check item set out in column II of the table.

3. When performing any of the procedures enumerated in column II of the table, a pilot shall demonstrate judgment commensurate with a high level of safety and, in determining whether the pilot has shown such judgment, the check pilot shall consider

   a) the pilot's adherence to approved procedures;

   b) the pilot's action in situations requiring a decision based on his analysis where there is no prescribed or recommended practice; and

   c) the pilot's qualities or airmanship in selecting a course of action.

| Column I<br>Phase | Column II<br>Proficiency Check Items | Column III<br>Procedures |
|---|---|---|
| **A.**<br>**Pre-flight** | 1. Pilot's knowledge of equipment examination | a. the completion of a practical oral equipment examination meeting the requirements of paragraph (b).<br><br>b. an equipment examination shall be closely coordinated and related to the flight procedures portion of the proficiency check and shall cover.<br><br>i) subjects requiring a practical knowledge of the rotorcraft, its power-plants, systems, components and its operational and performance factors,<br><br>ii) normal, abnormal and emergency procedures and the operations and limitations relating thereto, and<br><br>iii) the appropriate provisions of the approved aircraft flight manual. |
| | 2. Rotorcraft inspection | a. the pre-flight inspection shall include<br><br>i) a visual inspection of the exterior and the interior of the rotorcraft, and<br><br>ii) the use of the pre-start check list, appropriate control system checks, starting procedures, checks of all radio and electronic equipment and the selection of the proper navigation and communications radio facilities and frequencies prior to flight; and<br><br>b) during the pre-flight inspection the pilot must explain briefly the purpose of each item. |
| | 3. Powerplant checks | Powerplant checks as appropriate to the rotorcraft type . |

| | | |
|---|---|---|
| | 4. Taxiing | This maneuver where applicable to the rotorcraft type and configuration includes taxiing (in the case of a second-in-command proficiency check to the extent practical from the second-in-command station) in compliance with instructions issued by the appropriate traffic control authority or by the check pilot. |
| **B. Stationary Flight** | 1. Normal lift-off to a hover in ground effect | a. lift-off to a hover with rotorcraft heading into wind;<br>b. hover maneuvers with rotorcraft heading crosswind and downwind;<br>c. square pattern maneuvering with rotorcraft maintaining constant heading; and<br>d. precision 360° turns over a fixed point on the surface. |
| **C. Forward Flight** | 1. Transition from a hover | a. transition to forward flight and normal climb to 1,500 feet above ground level.<br>b. transition to forward flight and emergency rapid deceleration at constant altitude to abort intended departure. |
| | 2. Turns | at least one turn in each direction through 180° change of heading using a bank angle of not less than 30°. |
| | 3. Flight characteristics (required only on the initial proficiency check on each rotorcraft type) | recovery procedures from specific flight altitudes or characteristics that are peculiar to the rotorcraft type. |
| | 4. Engine failure | Simulated engine failure in flight, at a safe altitude, with subsequent precautionary or autorotational approach. |

| | | |
|---|---|---|
| **D. Approaches** | 1. Normal | at least one normal approach and landing. |
| | 2. Steep approach | at least one steep approach to a predetermined landing point over simulated high approach obstructions. |
| | 3. Out-of-wind | approach to the hover and, where practicable under the existing flight conditions, and out-of-wind landing. |
| | 4. Autorotational approaches and landing | simulated power-off autorotational approaches to predetermined points with 90°, 180° and 360° approach paths.<br><br>NOTE : Approach with engine failure for approaches and landings simulated one engine inoperative in multiengine helicopters, autorotation in single engine helicopter. |
| | 5. Governor Failure | At least one SIM Governor Failure. |
| **E. Emergency Procedures** | Pilot's knowledge of emergency procedures appropriate to the rotorcraft type | a pilot shall demonstrate as many of the emergency procedures outlined in the appropriate Aircraft Flight Manual and as many of the emergency procedures for the following situations as are, in the opinion of the check pilot, necessary to determine that the pilot has adequate knowledge and ability to perform such procedures :<br><br>i. fire in flight,<br><br>ii smoke control,<br><br>iii. anti-torque rotor malfunction,<br><br>iv. settling with power<br><br>v. hydraulic and electrical systems failure and malfunctions,<br><br>vi. landing gear systems failure and malfunctions; and<br><br>vii. failure of communication or navigation equipment. |

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# APPENDIX 4.

# FLIGHT RECORDERS

*(Section II, Chapter 4, 4.3 refer)*

The material in this Appendix concerns flight recorders intended for installation in helicopters engaged in international air navigation.

Crash-protected flight recorders comprise one or more of the following-systems:
— a flight data recorder (FDR),
— a cockpit voice recorder (CVR),
— an airborne image recorder (AIR),
— a data link recorder (DLR).

When image or data link information is required to be recorded on a crash-protected flight recorder, it is permissible to record it on either the CVR or the FDR.

Lightweight flight recorders comprise one or more of the following systems:
— an aircraft data recording system (ADRS),
— a cockpit audio recording system (CARS),
— an airborne image recording system (AIRS),
— a data link recording system (DLRS).

When image or data link information is required to be recorded on a crash-protected flight recorder, it is permissible to record it on either the CARS or the ADRS.

## 1. GENERAL REQUIREMENTS

1.1 Non-deployable flight recorder containers shall be painted a distinctive orange colour.

1.2 Non-deployable crash-protected flight recorder containers shall:

a) carry reflective material to facilitate their location; and

b) have securely attached an automatically activated underwater locating device operating at a frequency of 37.5 kHz. At the earliest practical date, but not later than 1 January 2018, this device shall operate for a minimum of 90 days.

1.3 Automatic deployable flight recorder containers shall:

a) be painted a distinctive orange colour, however the surface visible from outside the helicopter may be of another colour;

b) carry reflective material to facilitate their location; and

c) have an integrated automatically activated ELT.

1.4 The flight recorder systems shall be installed so that:

a) the probability of damage to the recordings is minimized;

b) there is an aural or visual means for preflight checking that the flight recorder systems are operating properly; and

c) if the flight recorder systems have an erasure device, the installation shall be designed to prevent operation of the device during flight time or crash impact; and

d) helicopters for which the individual certificate of airworthiness is first issued on or after 1 January 2023, a flight crew-operated erase function shall be provided on the flight deck which, when activated, modifies the recording of a CVR and AIR so that it cannot be retrieved using normal replay or copying techniques. The installation shall be designed to prevent activation during flight. In addition, the probability of an inadvertent activation of an erase function during an accident shall also be minimized.

*Note.— The erase function is intended to prevent access to CVR and AIR recordings by normal replay or copying means, but would not prevent accident investigation authorities access to such recordings by specialized replay or copying techniques.*

1.5 The crash-protected flight recorders shall be installed so that they receive electrical power from a bus that provides the maximum reliability for operation of the flight recorders without jeopardizing service to essential or emergency loads.

1.6 The lightweight flight recorders shall be connected to a power source having the characteristics which ensure proper and reliable recording in the operational environment.

1.7 The flight recorder systems, when tested by methods approved by the appropriate certificating authority, shall be demonstrated to be suitable for the environmental extremes over which they are designed to operate.

1.8 Means shall be provided for an accurate time correlation between the flight recorder systems functions.

1.9 The manufacturer usually provides the appropriate certificating authority with the following information in respect of the flight recorder systems:

a ) manufacturer’s operating instructions, equipment limitations and installation procedures;

b ) parameter origin or source and equations which relate counts to units of measurement; and

c) manufacturer’s test reports.

## 2. FLIGHT DATA RECORDER (FDR) AND AIRCRAFT DATA RECORDING SYSTEM (ADRS)

### 2.1 Start and stop logic

The FDR or ADRS shall start to record prior to the helicopter moving under its own power and record continuously until the termination of the flight when the helicopter is no longer capable of moving under its own power.

### 2.2 Parameters to be recorded

*Note.— In previous editions of Annex 6, Part III, types of recorders were defined to capture the first evolutions of FDRs.*

2.2.1 The parameters that satisfy the requirements for FDRs, are listed in Table A4-1. The number of parameters to be recorded shall depend on helicopter complexity. The parameters without an asterisk (*) are mandatory parameters which shall be recorded regardless of helicopter complexity. In addition, the parameters designated by an asterisk (*) shall be recorded if an information data source for the parameter is used by helicopter systems or the flight crew to operate the helicopter. However, other parameters may be substituted with due regard to the helicopter type and the characteristics of the recording equipment.

2.2.2 The following parameters shall satisfy the requirements for flight path and speed:

— pressure altitude
— indicated airspeed
— outside air temperature
— heading
— normal acceleration
— lateral acceleration
— longitudinal acceleration (body axis)
— time or relative time count
— navigation data*: drift angle, wind speed, wind direction, latitude/longitude
— radio altitude*

2.2.3 If further FDR recording capacity is available, recording of the following additional information shall be considered:

a) additional operational information from electronic displays, such as electronic flight instrument systems (EFIS), electronic centralized aircraft monitor (ECAM) and engine indication and crew alerting system (EICAS); and

b) additional engine parameters (EPR, N1, fuel flow, etc.).

2.2.4 The parameters that satisfy the requirements for ADRS are listed in Table A4-3.

### 2.3 Additional information

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

2.3.2 Documentation concerning parameter allocation, conversion equations, periodic calibration and other serviceability/maintenance information shall be maintained by the operator/owner. The documentation shall be sufficient to ensure that accident investigation authorities have the necessary information to read out the data in engineering units.

## 3. COCKPIT VOICE RECORDER (CVR) AND COCKPIT AUDIO RECORDING SYSTEM (CARS)

### 3.1 Start and stop logic

The CVR or CARS shall start to record prior to the helicopter moving under its own power and record continuously until the termination of the flight when the helicopter is no longer capable of moving under its own power. In addition, depending on the availability of electrical power, the CVR or CARS shall start to record as early as possible during the cockpit checks prior to engine start at the beginning of the flight until the cockpit checks immediately following engine shutdown at the end of the flight.

### 3.2 Signals to be recorded

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

a) voice communication transmitted from or received in the aircraft by radio;
b) aural environment on the flight deck;
c) voice communication of flight crew members on the flight deck using the interphone system, if installed;
d) voice or audio signals identifying navigation or approach aids introduced in the headset or speaker; and
e) voice communication of flight crew members using the passenger address system, if installed.

3.2.2 RESERVED

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

a) voice communication transmitted from or received in the helicopter by radio;
b) aural environment on the flight deck; and
c) voice communication of flight crew members on the flight deck using the helicopter's interphone system, if installed.

3.2.4 RESERVED

## 4. AIRBORNE IMAGE RECORDER (AIR) AND AIRBORNE IMAGE RECORDING SYSTEM (AIRS)

### 4.1 Start and stop logic

The AIR or AIRS shall start to record prior to the helicopter moving under its own power and record continuously until the termination of the flight when the helicopter is no longer capable of moving under its own power. In addition, depending on the availability of electrical power, the AIR or AIRS shall start to record as early as possible during the cockpit checks prior to engine start at the beginning of the flight until the cockpit checks immediately following engine shutdown at the end of the flight.

### 4.2 Classes

4.2.1 A Class A AIR or AIRS captures the general cockpit area in order to provide data supplemental to conventional flight recorders.

*Note 1.— To respect crew privacy, the cockpit area view may be designed as far as practical to exclude the head and shoulders of crew members whilst seated in their normal operating position.*

*Note 2.— There are no provisions for Class A AIRs or AIRS in this document.*

4.2.2 A Class B AIR or AIRS captures data link message displays.

4.2.3 A Class C AIR or AIRS captures instruments and control panels.

*Note.— A Class C AIR or AIRS may be considered as a means for recording flight data where it is not practical or is prohibitively expensive to record on an FDR, or where an FDR is not required.*

## 5. DATA LINK RECORDER (DLR)

### 5.1 Applications to be recorded

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

*Note.— Sufficient information to derive the content of the data link communications message and the time the messages were displayed to the flight crew is needed to determine an accurate sequence of events on board the aircraft.*

5.1.2 Messages applying to the applications listed in Table A4-2 shall be recorded. Applications without the asterisk (*) are mandatory applications which shall be recorded regardless of the system complexity. Applications with an (*) are to be recorded only as far as is practicable given the architecture of the system.

## 6. INSPECTIONS OF FLIGHT RECORDER SYSTEMS

6.1 Prior to the first flight of the day, the built-in test features for the flight recorders and flight data acquisition unit (FDAU), when installed, shall be monitored by manual and/or automatic checks.

6.2 FDR systems or ADRS, CVR systems or CARS, and AIR systems or AIRS shall have recording inspection intervals of one year; subject to the approval from the appropriate regulatory authority, this period may be extended to two years provided these systems have demonstrated a high integrity of serviceability and self-monitoring. DLR systems or DLRS shall have recording inspection intervals of two years; subject to the approval from the appropriate regulatory authority, this period may be extended to four years provided these systems have demonstrated high integrity of serviceability and self-monitoring.

6.3 Recording inspections shall be carried out as follows:

a) an analysis of the recorded data from the flight recorders shall ensure that the recorder operates correctly for the nominal duration of the recording;

b) the FDR or ADRS recording from a complete flight shall be examined in engineering units to evaluate the validity of all recorded parameters. Particular attention shall be given to parameters from sensors dedicated to the FDR or ADRS. Parameters taken from the aircraft's electrical bus system need not be checked if their serviceability can be detected by other aircraft systems;

c) the readout facility shall have the necessary software to accurately convert the recorded values to engineering units and to determine the status of discrete signals;

d) an examination of the recorded signal on the CVR or CARS shall be carried out by replay of the CVR or CARS recording. While installed in the aircraft, the CVR or CARS shall record test signals from each aircraft source and from relevant external sources to ensure that all required signals meet intelligibility standards;

e) where practicable, during the examination, a sample of in-flight recordings of the CVR or CARS shall be examined for evidence that the intelligibility of the signal is acceptable; and

f) an examination of the recorded images on the AIR or AIRS shall be carried out by replay of the AIR or AIRS recording. While installed in the aircraft, the AIR or AIRS shall record test images from each aircraft source and from relevant external sources to ensure that all required images meet recording quality standards.

g) an examination of the recorded messages on the DLR or DLRS shall be carried out by replay of the DLR or DLRS recording.

6.4 A flight recorder system shall be considered unserviceable if there is a significant period of poor-quality data, unintelligible signals or if one or more of the mandatory parameters is not recorded correctly.

6.5 A report of the recording inspection shall be made available on request to regulatory authorities for monitoring purposes.

6.6 Calibration of the FDR system:

a) for those parameters which have sensors dedicated only to the FDR and are not checked by other means, recalibration shall be carried out at least every five years or in accordance with the recommendations of the sensor manufacturer to determine any discrepancies in the engineering conversion routines for the mandatory parameters and to ensure that parameters are being recorded within the calibration tolerances; and

b) when the parameters of altitude and airspeed are provided by sensors that are dedicated to the FDR system, there shall be a recalibration performed as recommended by the sensor manufacturer, or at least every two years.

**Table A4-1. Parameter Characteristics for Flight Data Recorders**

| Serial No. | Parameter | Applicability | Measurement Range | Maximum sampling and recording interval (seconds) | Accuracy limits (sensor input compared to FDR readout) | Recording resolution |
|---|---|---|---|---|---|---|
| 1 | Time (UTC when available, otherwise relative time count or GNSS time sync) | | 24 hours | 4 | ±0.125% /h | 1s |
| 2 | Pressure altitude | | –300 m (–1 000 ft) to maximum certificated altitude of aircraft +1 500 m (+5 000 ft) | 1 | ±30 m to ±200 m (±100 ft to ±700 ft) | 1.5 m (5 ft) |
| 3 | Indicated airspeed | | As the installed pilot display measuring system | 1 | ±3% | 1 kt |
| 4 | Heading | | 360° | 1 | ±2° | 0.5° |
| 5 | Normal acceleration | | –3 g to +6 g | 0.125 | ±0.09 g excluding a Datum error of ±0.045 g | 0.004 g |
| 6 | Pitch attitude | | ±75° or 100% of useable range whichever is greater | 0.5 | ±2° | 0.5° |
| 7 | Roll attitude | | ±180° | 0.5 | ±2° | 0.5° |

| | | | | | | |
|---|---|---|---|---|---|---|
| 8 | Radio transmission keying | | On-off (one discrete) | 1 | - | - |
| 9 | Power on each engine | | Full range | 1 (per engine) | ±2% | 0.1% of full range |
| 10 | Main rotor: | | | | | |
| | Main rotor speed | | 50–130% | 0.51 | ±2% | 0.3% of full range |
| | Rotor brake | | Discrete | | - | - |
| 11 | Pilot input and/or control surface position — primary controls (collective pitch, longitudinal cyclic pitch, lateral cyclic pitch, tail rotor pedal) | | Full range | 0.5 (0.25 recommended) | ±2% unless higher accuracy uniquely required | 0.5% of operating range |
| 12 | Hydraulics, each system (low pressure and selection) | | Discrete | 1 | - | - |
| 13 | Outside air temperature | | Sensor range | 2 | ±2°C | 0.3°C |
| 14* | Autopilot/ autothrottle/AFCS mode and engagement status | | A suitable combination of discretes | 1 | - | - |
| 15* | Stability augmentation system engagement | | Discrete | 1 | - | - |
| 16* | Main gearbox oil pressure | | As installed | 1 | As installed | 6.895 kN/m2 (1 psi) |
| 17* | Main gearbox oil temperature | | As installed | 2 | As installed | 1°C |
| 18 | Yaw rate | | ±400°/second | 0.25 | ±1.5% maximum range excluding datum error of ±5% | ±2°/s |
| 19* | Sling load force | | 0 to 200% of certified load | 0.5 | ±3% of maximum range | 0.5% for maximum certified load |
| 20 | Longitudinal acceleration | | ±1 g | 0.25 | ±0.015 g excluding a Datum error of ±0.05 g | 0.004 g |

| | | | | | | |
|---|---|---|---|---|---|---|
| 21 | Lateral acceleration | | ±1 g | 0.25 | ±0.015 g excluding a Datum error of ±0.05 g | 0.004 g |
| 22* | Radio altitude | | –6 m to 750 m (–20 ft to 2 500 ft) | 1 | ±0.6 m (±2 ft) or ±3% whichever is greater below 150 m (500 ft) and ±5% above 150 m (500 ft) | 0.3 m (1 ft) below 150 m (500 ft), 0.3 m (1 ft) + 0.5% of full range above 150 m (500 ft) |
| 23* | Vertical beam deviation | | Signal range | 1 | ±3% | 0.3% of full range |
| 24* | Horizontal Beam deviation | | Signal range | 1 | ±3% | 0.3% of full range |
| 25 | Marker beacon passage | | Discrete | 1 | - | - |
| 26 | Warnings | | Discrete(s) | 1 | - | - |
| 27 | Each navigation receiver frequency selection | | Sufficient to determine selected frequency | 4 | As installed | - |
| 28* | DME 1 and 2 distances | | 0–370 km (0–200 NM) | 4 | As installed | 1 852 m (1 NM) |
| 29* | Navigation data (latitude/longitude, ground speed, drift angle, wind speed, wind direction) | | As installed | 2 | As installed | As installed |
| 30* | Landing gear and gear selector position | | Discrete | 4 | - | - |
| 31* | Engine exhaust gas temperature (T4) | | As installed | 1 | As installed | |
| 32* | Turbine inlet temperature (TIT/ITT) | | As installed | 1 | As installed | |
| 33* | Fuel contents | | As installed | 4 | As installed | |
| 34* | Altitude rate | | As installed | 1 | As installed | |
| 35* | Ice detection | | As installed | 4 | As installed | |
| 36* | Helicopter health and usage monitor system | | As installed | - | As installed | - |
| 37 | Engine control modes | | Discrete | 1 | - | - |
| 38* | Selected barometric setting (pilot and co-pilot) | | As installed | 64 (4 recommended) | As installed | 0.1 mb (0.01 in Hg) |
| 39* | Selected altitude (all pilot selectable modes of operation) | | As installed | 1 | As installed | Sufficient to determine crew selection |

| | | | | | | |
|---|---|---|---|---|---|---|
| 40* | Selected speed (all pilot selectable modes of operation) | | As installed | 1 | As installed | Sufficient to determine crew selection |
| 41* | Selected Mach (all pilot selectable modes of operation) | | As installed | 1 | As installed | Sufficient to determine crew selection |
| 42* | Selected vertical speed (all pilot selectable modes of operation) | | As installed | 1 | As installed | Sufficient to determine crew selection |
| 43* | Selected heading (all pilot selectable modes of operation) | | As installed | 1 | As installed | Sufficient to determine crew selection |
| 44* | Selected flight path (all pilot selectable modes of operation) | | As installed | 1 | As installed | Sufficient to determine crew selection |
| 45* | Selected decision height | | As installed | 4 | As installed | Sufficient to determine crew selection |
| 46* | EFIS display format (pilot and co-pilot) | | Discrete(s) | 4 | - | |
| 47* | Multifunction/ engine/alerts display format | | Discrete(s) | 4 | - | - |
| 48* | Event marker | | Discrete | 1 | - | - |
| 49* | GPWS/TAWS/GCAS status (selection of terrain display mode including pop-up display status) and (terrain alerts, both cautions and warnings, and advisories) and (on/off switch position) and (operational status) | Application for type certification is submitted to a Contracting State on or after 1 January 2023 | Discrete(s) | 1 | As installed | |
| 50* | TCAS/ACAS (traffic alert and collision avoidance system) and (operational status) | Application for type certification is submitted to a Contracting State on or after 1 January 2023 | Discrete(s) | 1 | As installed | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 51* | Primary flight controls – pilot input forces | Application for type certification is submitted to a Contracting State on or after 1 January 2023 | Full range | 0.125 (0.0625 recommended) | ± 3% unless higher accuracy is uniquely required | 0.5% of operating range |
| 52* | Computed centre of gravity | Application for type certification is submitted to a Contracting State on or after 1 January 2023 | As installed | 64 | As installed | 1% of full range |
| 53* | Helicopter computed weight | Application for type certification is submitted to a Contracting State on or after 1 January 2023 | As installed | 64 | As installed | 1% of full range |

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**Table A4-2. Description of Applications for Data Link Recorders**

| Item No. | Application type | Application description | Recording content |
|---|---|---|---|
| **1** | Data link initiation | This includes any applications used to log on to or initiate data link service. In FANS-1/A and ATN, these are ATS facilities notification (AFN) and context management (CM) respectively. | **C** |
| **2** | Controller/pilot communication | This includes any application used to exchange requests, clearances, instructions and reports between the flight crew and controllers on the ground. In FANS-1/A and ATN, this includes the CPDLC application. It also includes applications used for the exchange of oceanic (OCL) and departure clearances (DCL) as well as data link delivery of taxi clearances. | **C** |
| **3** | Addressed surveillance | This includes any surveillance application in which the ground sets up contracts for delivery of surveillance data. In FANS-1/A and ATN, this includes the automatic dependent surveillance — contract (ADS-C) application. Where parametric data are reported within the message they shall be recorded unless data from the same source are recorded on the FDR. | **C** |
| **4** | Flight information | This includes any service used for delivery of flight information to specific aircraft. This includes, for example, data link aviation weather report service (D-METAR), data link-automatic terminal service (D-ATIS), digital Notice to Airmen (D-NOTAM) and other textual data link services. | **C** |
| **5** | Aircraft broadcast surveillance | This includes elementary and enhanced surveillance systems, as well as automatic dependent surveillance — broadcast (ADS-B) output data. Where parametric data sent by the helicopter are reported within the message they shall be recorded unless data from the same source are recorded on the FDR. | **M*** |
| **6** | Aeronautical operational control data | This includes any application transmitting or receiving data used for aeronautical operational control purposes (per the ICAO definition of operational control). | **M*** |

Key:
C: Complete contents recorded.
M: Information that enables correlation to any associated records stored separately from the helicopter.
*: Applications that are to be recorded only as far as is practicable given the architecture of the system.

## Table A4-3. Parameter Characteristics for Aircraft Data Recording Systems

| No. | Parameter name | Maximum recording range | Maximum recording interval in seconds | Minimum recording accuracy | Minimum recording resolution | Remarks |
|---|---|---|---|---|---|---|
| 1 | **Heading**: | | | | | |
| | a) Heading (Magnetic or True) | ±180° | 1 | ±2° | 0.5° | *Heading is preferred, if not available, yaw rate shall be recorded |
| | b) Yaw rate | ±300°/s | 0.25 | ±1% + drift of 360°/h | 2°/s | |
| 2 | **Pitch**: | | | | | |
| | a) Pitch attitude | ±90° | 0.25 | ±2° | 0.5° | *Pitch attitude is preferred, if not available, pitch rate shall be recorded |
| | b) Pitch rate | ±300°/s | 0.25 | ±1% + drift of 360°/h | 2°/s | |
| 3 | **Roll**: | | | | | |
| | a) Roll attitude | ±180° | 0.25 | ±2° | 0.5° | * Roll attitude is preferred, if not available, roll rate shall be recorded |
| | b) Roll rate | ±300°/s | 0.25 | ±1% + drift of 360°/h | 2°/s | |
| 4 | **Positioning system:** | | | | | |
| | a) Time | 24 hours | 1 | ±0.5° | 0.1° | UTC time preferred where available |
| | b) Latitude/longitude | Latitude:±90° Longitude:±180° | 2 (1 if available) | As installed (0.00015° recommended) | 0.00005° | |
| | c) Altitude | –300 m (–1 000 ft) to maximum certificated altitude of aircraft +1 500 m (5 000 ft) | 2 (1 if available) | As installed (±15 m (±50 ft) recommended) | 1.5 m (5 ft) | |
| | d) Ground speed | 0–1 000 kt | 2 (1 if available) | As installed (±5 kt recommended) | 1 kt | |
| | e) Track | 0–360° | 2 (1 if available) | As installed (± 2° recommended) | 0.5° | |
| | f) Estimated error | Available range | 2 (1 if available) | As installed | As installed | Shall be recorded if readily available |

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | Normal acceleration | –3 g to + 6 g | 0.25 (0.125 if available) | As installed (±0.09 g excluding a datum error of ±0.05 g recommended) | 0.004 g | |
| 6 | Longitudinal acceleration | ±1 g | 0.25 (0.125 if available) | As installed (±0.015 g excluding a datum error of ±0.05 g recommended) | 0.004 g | |
| 7 | Lateral acceleration | ±1 g | 0.25 (0.125 if available) | As installed (±0.015 g excluding a datum error of ±0.05 g recommended) | 0.004 g | |
| 8 | External static pressure (or pressure altitude) | 34.4 hPa (1.02 in-Hg) to 310.2 hPa (9.16 in-Hg) or available sensor range | 1 | As installed (±1 hPa (0.3 in-Hg) or ±30 m (±100 ft) to ±210 m (±700 ft) recommended) | 0.1 hPa (0.03 in-Hg) or 1.5 m (5 ft) | |
| 9 | Outside air temperature (or total air temperature) | –50° to +90°C or available sensor range | 2 | As installed (±2°C recommended) | 1°C | |
| 10 | Indicated air speed | As the installed pilot display measuring system or available sensor range | 1 | As installed (±3% recommended) | 1 kt (0.5 kt recommended) | |
| 11 | Main rotor speed (Nr) | 50% to 130% or available sensor range | 0.5 | As installed | 0.3% of full range | |
| 12 | Engine RPM (*) | Full range including overspeed condition | Each engine each second | As installed | 0.2% of full range | *For piston engined helicopters |
| 13 | Engine oil pressure | Full range | Each engine each second | As installed (5% of full range recommended) | 2% of full range | |
| 14 | Engine oil temperature | Full range | Each engine each second | As installed (5% of full range recommended) | 2% of full range | |
| 15 | Fuel flow or pressure | Full range | Each engine each second | As installed | 2% of full range | |
| 16 | Manifold pressure (*) | Full range | Each engine each second | As installed | 0.2% of full range | *For piston-engined helicopters |

| | | | | | | |
|---|---|---|---|---|---|---|
| 17 | Engine thrust/power/ torque parameters required to determine propulsive thrust/power* | Full range | Each engine each second | As installed | 0.1% of full range | *Sufficient parameters e.g. EPR/N1 or torque/Np as appropriate to the particular engine shall be recorded to determine power. A margin for possible overspeed should be provided. Only for turbine-engined helicopters. |
| 18 | Engine gas generator speed (Ng) (*) | 0–150% | Each engine each second | As installed | 0.2% of full range | *Only for turbine-engined helicopters |
| 19 | Free power turbine speed (Nf) (*) | 0–150% | Each engine each second | As installed | 0.2% of full range | *Only for turbine-engined helicopters |
| 20 | Collective pitch | Full range | 0.5 | As installed | | |
| 21 | Coolant temperature (*) | Full range | 1 | As installed (±5°C recommended) | 1° C | *Only for piston-engined helicopters |
| 22 | Main voltage | Full range | Each engine each second | As installed | 1 Volt | |
| 23 | Cylinder head temperature (*) | Full range | Each cylinder each second | As installed | 2% of full range | *Only for piston-engined helicopters |
| 24 | Fuel quantity | Full range | 4 | As installed | 1% of full range | |
| 25 | Exhaust gas temperature | Full range | Each engine each second | As installed | 2% of full range | |
| 26 | Emergency voltage | Full range | Each engine each second | As installed | 1 Volt | |
| 27 | Trim surface position | Full range or each discrete position | 1 | As installed | 0.3% of full range | |
| 28 | Landing gear position | Each discrete position* | Each gear every two seconds | As installed | | *Where available, record up-and-locked and down-and-locked position |
| 29 | Novel/unique aircraft features | As required | As required | As required | As required | |

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# ATTACHMENT A

RESERVED

# ATTACHMENT B.

# MEDICAL SUPPLIES

*Supplementary to Section II, Chapter 4, 4.2.2 a)*

***First-aid kit***

The following provides guidance on typical contents of a first-aid kit for carriage aboard a helicopter:

*List of contents*

— Antiseptic swabs (10/pack)
— Bandage: adhesive strips
— Bandage: gauze 7.5 cm × 4.5 m
— Bandage: triangular; safety pins
— Dressing: burn 10 cm × 10 cm
— Dressing: compress, sterile 7.5 cm × 12 cm
— Dressing: gauze, sterile 10.4 cm × 10.4 cm
— Tape: adhesive 2.5 cm (roll)
— Steri-strips (or equivalent adhesive strip)
— Hand cleanser or cleansing towelettes
— Pad with shield, or tape, for eye
— Scissors: 10 cm (if allowed by national regulations)
— Tape: Adhesive, surgical 1.2 cm × 4.6 m
— Tweezers: splinter
— Disposable gloves (multiple pairs)
— Thermometers (non-mercury)
— Mouth-to-mouth resuscitation mask with one-way valve
— First-aid manual, current edition
— Incident record form

The following suggested medications can be included in the first-aid kits where permitted by CAAN Medical Assessor:

— Mild to moderate analgesic
— Antiemetic
— Nasal decongestant
— Antacid
— Antihistamine

***Universal precaution kit***

A universal precaution kit should be carried on a helicopter that is required to operate with at least one cabin crew member. Such a kit may be used to clean up any potentially infectious body contents such as blood, urine, vomit and faeces and to protect the cabin crew who are assisting potentially infectious cases of suspected communicable disease.

*Typical contents*

— Dry powder that can convert small liquid spill into a sterile granulated gel
— Germicidal disinfectant for surface cleaning
— Skin wipes
— Face/eye mask (separate or combined)
— Gloves (disposable)
— Protective apron
— Large absorbent towel
— Pick-up scoop with scraper
— Bio-hazard disposal waste bag
— Instructions

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# ATTACHMENT C.

# MINIMUM EQUIPMENT LIST (MEL)

*Supplementary to Section II, Chapter 4, 4.1.3*

1. If deviations from the requirements of States in the certification of aircraft were not permitted an aircraft could not be flown unless all systems and equipment were operable. Experience has proved that some unserviceability can be accepted in the short term when the remaining operative systems and equipment provide for continued safe operations.

2. CAAN will indicate through approval of a minimum equipment list those systems and items of equipment that may be inoperative for certain flight conditions with the intent that no flight can be conducted with inoperative systems and equipment other than those specified.

3. A minimum equipment list, approved by the DG, CAAN, is therefore necessary for each aircraft, based on the master minimum equipment list established for the aircraft type by the organization responsible for the type design in conjunction with the State of Design.

4. An operator shall prepare a minimum equipment list designed to allow the operation of an aircraft with certain systems or equipment inoperative provided an acceptable level of safety is maintained.

5. The minimum equipment list is not intended to provide for operation of the aircraft for an indefinite period with inoperative systems or equipment. The basic purpose of the minimum equipment list is to permit the safe operation of an aircraft with inoperative systems or equipment within the framework of a controlled and sound programme of repairs and parts replacement.

6. Operators are to ensure that no flight is commenced with multiple minimum equipment list items inoperative without determining that any interrelationship between inoperative systems or components will not result in an unacceptable degradation in the level of safety and/or undue increase in the flight crew workload.

7. The exposure to additional failures during continued operation with inoperative systems or equipment must also be considered in determining that an acceptable level of safety is being maintained. The minimum equipment list may not deviate from requirements of the flight manual limitations section, emergency procedures or other airworthiness requirements of the State of Registry or of the State of the Operator unless the appropriate airworthiness authority or the flight manual provides otherwise.

8. Systems or equipment accepted as inoperative for a flight should be placarded where appropriate and all such items should be noted in the aircraft technical log to inform the flight crew and maintenance personnel of the inoperative system or equipment.

9. For a particular system or item of equipment to be accepted as inoperative, it may be necessary to establish a maintenance procedure, for completion prior to flight, to deactivate or isolate the system or equipment. It may similarly be necessary to prepare an appropriate flight crew operating procedure.

10. The responsibilities of the pilot-in-command in accepting a helicopter for operation with deficiencies in accordance with a minimum equipment list are specified in Section II, Chapter 2, 2.3.1.

# ATTACHMENT D

# FLIGHT TIME AND FLIGHT DUTY PERIOD LIMITATIONS

*Supplementary to Section II, Chapter 2, 2.2.10.2 & Chapter 7*

## 1. PURPOSE AND SCOPE

1.1 Flight time and flight duty period limitations are established for the sole purpose of reducing the probability that fatigue of flight crew members may adversely affect the safety of flight.

1.2 In order to guard against this, two types of fatigue must be taken into account, namely, transient fatigue and cumulative fatigue.

a) Transient fatigue may be described as fatigue which is normally experienced by a healthy individual following a period of work, exertion or excitement, and it is normally dispelled by a single sufficient period of sleep.
b) On the other hand cumulative fatigue may occur after delayed or incomplete recovery from transient fatigue or as the after-effect of more than a normal amount of work, exertion or excitement without sufficient opportunity for recuperation.

1.3 Limitations based on the provisions of *Chapter 2, 2.2.10.2& Chapter 7* will provide safeguards against both kinds of fatigue because they will recognize:

1.3.1 The necessity to limit flight time in such a way as to guard against both kinds of fatigue.

1.3.2 The necessity to limit time spent on duty on the ground immediately prior to a flight or at intermediate points during a series of flights in such a way as to guard particularly against transient fatigue.

1.3.3 The necessity to provide flight crew members with adequate opportunity to recover from fatigue.

1.3.4 The necessity of taking into account other related tasks the flight crew member may be required to perform in order to guard particularly against cumulative fatigue.

## 2. GENERAL

2.1 The responsibility rests with the pilot, not to exercise the privileges of the licence and related ratings at any time when aware of any decrease in medical fitness which might render the pilot unable to safely exercise these privileges, including any decrease in medical fitness through fatigue.

2.2 The limitations laid down in the following paragraphs are to be considered as minimum requirements and it is the responsibility of the operator to adjust them in certain cases, having regard to the factors mentioned below. Specific factors to be taken into consideration are:

a) the crew composition of the aircraft;
b) the probability of operational delays;
c) the type of aircraft and route complexities such as traffic density, navigation aids, standard of equipment carried, communication difficulties, and high altitude flying in unpressurized aircraft, or flying with high cabin altitudes in pressurized aircraft;
d) the proportion of night flying involved;
e) the extent to which the accommodation at layovers is such as to permit crews to secure real rest;
f) the number of landings and take-offs;
g) the need for an orderly scheduling system, giving a high degree of stability (for this, provision of adequate reserves is an important factor);
h) the sleep deprivation arising from interruption of the normal sleep/wake cycle; and
i) the cockpit environment.

2.3 For reasons of flight safety, the operator has the responsibility to ensure that crew members engaged in duties other than flight duties performed on behalf of the employer are provided with at least the minimum required rest periods before engaging in flight duties.

## 3. DEFINITIONS

***Deadheading crew.*** A crew member positioned by the operator in flight or by surface transport.

***Duty period.*** The time during which a flight crew member carries out any duty at the behest of the flight crew member's employer.

***Flight duty period.*** The total time from the moment a flight crew member commences duty, immediately subsequent to a rest period and prior to making a flight or a series of flights, to the moment the flight crew member is relieved of all duties having completed such flight or series of flights.

***Flight sector.*** A flight or one of a series of flights which commences at a parking place of the aircraft and terminates at a parking place of the aircraft. It is composed of:

— flight preparation,
— flight time,
— post-flight period after the flight sector or series of flight sectors.

***Flight time* — helicopters.** 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.

***Rest period.*** Any period of time on the ground during which a flight crew member is relieved of all duties by the operator.

***Series of flights.*** Two or more flight sectors accomplished in between two rest periods.

***Standby.*** A defined period during which a crew member may be called for duty with minimum notice.

***Turnaround time.*** The time spent on the ground during a flight duty period between two flight sectors.

## 4. COMMENTS ABOUT THE DEFINITIONS

### 4.1 Flight time

The definition of flight time is of necessity very general but in the context of limitations it is, of course, intended to apply to flight crew members in accordance with the relevant definition of a flight crew member. Pursuant to that latter definition, licensed crew personnel travelling as passengers cannot be considered flight crew members, although this should be taken into account in arranging rest periods.

### 4.2 Flight duty periods

4.2.1 The definition of flight duty period is intended to cover a continuous period of duty which always includes a flight or a series of flights. It is meant to include all duties a flight crew member may be required to carry out from the moment the flight crew member reports at the place of employment on the day of a flight until relieved of duties, having completed the flight or series of flights.

It is considered necessary that this period should be subject to limitations because a flight crew member's activities within the limits of such period would eventually induce fatigue — transient or cumulative — which could endanger the safety of a flight.

There is on the other hand (from the point of view of flight safety) insufficient reason to establish limitations for any other time during which a flight crew member is performing a task assigned by the operator. Such task should, therefore, only be taken into account when making provisions for rest periods as one among many factors which could lead to fatigue.

4.2.2 The definition does not imply the inclusion of such periods as time taken for a flight crew member to travel from the flight crew member's home to the place of employment.

4.2.3 An important safeguard may be established if operators recognize the right of a crew member to refuse further flight duty when suffering from fatigue of such a nature as to affect adversely the safety of flight.

### 4.3 Rest periods

The definition of rest period implies an absence of duty and is intended to be for the purpose of recovering from fatigue; the way in which this recovery is achieved is the responsibility of the individual.

## 5. TYPES OF LIMITATIONS

5.1 Limitations are broadly divided by time; for example, the majority of States reporting to ICAO prescribe daily, monthly and yearly flight time limitations, and a considerable number also prescribe quarterly flight time limitations. It will probably be sufficient to prescribe flight duty period limitations on a daily basis. It must be understood, however, that these limitations will vary considerably taking into account a variety of situations.

5.2 In formulating regulations or rules governing flight time limitations the size of the crew complement and the extent to which the various tasks to be performed can be divided among the crew members should be taken into account; and in the case where adequate facilities for relief are provided in the aircraft in such a way that a crew member may have horizontal rest and a degree of privacy, flight duty periods could be extended.

Adequate rest facilities on the ground are required at places where relief periods are to be given. Also operators should give due weight to the following factors: traffic density; navigational and communication facilities; rhythm of work/sleep cycle; number of landings and take-offs; aircraft handling and performance characteristics and weather conditions.

## 6. PRO FORMA TABLE

The following pro forma table is provided to illustrate one of many forms in which the para at Section II, 2.2.10.2 and Chapter 7, may be implemented.

| *Crew* | *Maximum flight duty period in 24 hours* | *Maximum flight time (hours)* | | | | *Rest periods* | |
|---|---|---|---|---|---|---|---|
| | | *Daily 24 hours* | *Monthly* | *Quarterly* | *Annually* | *Daily* | *Per week* |
| Pilot-in-command<br><br>1st Officer | | | | | | | |

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# ATTACHMENT E

RESERVED

# ATTACHMENT F

RESERVED

# ATTACHMENT G.

# AUTOMATIC LANDING SYSTEMS, HEAD-UP DISPLAY (HUD) OR EQUIVALENT DISPLAYS AND VISION SYSTEMS

*Supplementary to Section II, Chapter 2, 2.2.8.1.1 and Chapter 4, 4.16*

## INTRODUCTION

The material in this attachment provides guidance for certified automatic landing systems, HUD or equivalent displays and vision systems intended for operational use in helicopters engaged in international air navigation. These systems and hybrid systems may be installed and operated to reduce workload, improve guidance, reduce flight technical error and enhance situational awareness and/or obtain operational credits. Automatic landing systems, HUD or equivalent displays and vision systems may be installed separately or together as part of a hybrid system. Any operational credit for their use by commercial air transport operators requires a specific approval from the State of the Operator, and the State of Registry for general aviation operators.

*Note 1.— "Vision systems" is a generic term referring to the existing systems designed to provide images, i.e. enhanced vision systems (EVS), synthetic vision systems (SVS) and combined vision systems (CVS).*

*Note 2.— "Automatic landing system-helicopter" is an automatic approach using airborne systems which provide automatic control of the flight path, to a point aligned with the landing surface, from which the pilot can transition to a safe landing by means of natural vision without the use of automatic control.*

*Note 3.— Operational credit can be granted only within the limits of the airworthiness approval.*

*Note 4.— Currently, operational credit has been given only to vision systems containing an image sensor providing a real-time image of the actual external scene on a HUD.*

*Note 5. — More detailed information and guidance on automatic landing systems, HUD or equivalent displays and vision systems is contained in the* Manual of All-Weather Operations *(Doc 9365.) This manual should be consulted in conjunction with this attachment.*

## 1. HUD AND EQUIVALENT DISPLAYS

### 1.1 General

1.1.1 A HUD presents flight information into the pilot's forward external field of view without significantly restricting that external view.

1.1.2 Flight information should be presented on the HUD or an equivalent display, as required for the intended use.

## 1.2 Operational applications

1.2.1 Flight operations with a HUD can improve situational awareness by combining flight information located on head-down displays with the external view to provide pilots with more immediate awareness of relevant flight parameters and situation information while they continuously view the external scene. This improved situational awareness can also reduce errors in flight operations and improve the pilot's ability to transition between instrument and visual references as meteorological conditions change.

1.2.2 A HUD may be used to supplement conventional flight deck instrumentation or as a primary flight display if certified for this purpose.

1.2.3 An approved HUD may:

a) qualify for operations with reduced visibility or reduced RVR; or

b) replace some parts of the ground facilities such as touchdown zone and/or centre line lights.

1.2.4 The functions of a HUD may be provided by a suitable equivalent display. However, before such systems can be used, the appropriate airworthiness approval should be obtained.

## 1.3 HUD training

Training and recent experience requirements for operations using HUD or equivalent displays should, for commercial operators, be established by the State of the Operator and for general aviation operators by the State of Registry. For commercial air transport operations, the training programmes should be approved by the State of the Operator and the implementation of the training should be subject to oversight by that State. The training should address all flight operations for which the HUD or the equivalent display is used.

# 2. VISION SYSTEMS

## 2.1 General

2.1.1 Vision systems can display electronic real-time images of the actual external scene achieved through the use of image sensors, i.e. EVS, or display synthetic images, which are derived from the on-board avionic systems, i.e. SVS. Vision systems can also consist of a combination of these two systems, called combined vision systems, i.e. CVS. Such a system may display electronic real-time images of the external scene using the EVS component of the system. The information from vision systems may be displayed head-up and/or head-down. Operational credit may be granted to vision systems which are appropriately qualified.

2.1.2 Light emitting diode (LED) lights may not be visible to infrared-based vision systems. Operators of such vision systems will need to acquire information about the LED implementation programmes at aerodromes where they intend to operate. More details about the consequences of LED lights are contained in the *Manual of All-Weather Operations* (Doc 9365).

## 2.2 Operational applications

2.2.1 Flight operations with EVS allow the pilot to view an image of the external scene obscured by darkness or other visibility restrictions. The use of EVS will also allow acquisition of an image of the external scene earlier than with natural, unaided vision, hence providing for a smoother transition to references by natural vision. The improved acquisition of an image of the external scene may improve situational awareness. It may also qualify for operational credit if the information from the vision system is presented to the pilots in a suitable way and the necessary airworthiness approval and specific approval by the State of the Operator or State of Registry have been obtained for the combined system.

2.2.2 Vision system imagery may also enable pilots to detect other aircraft on the ground, terrain or obstructions on or adjacent to runways or taxiways.

## 2.3 Operational concepts

2.3.1 Instrument approach operations include an instrument phase and a visual phase. The instrument phase ends at the published MDA/H or DA/H unless a missed approach is initiated. Using the EVS or CVS does not change the applicable MDA/H or DA/H. The continued approach to landing from MDA/H or DA/H will be conducted using visual references. This also applies to operations with vision systems. The difference is that the visual references will be acquired by use of an EVS or CVS, natural vision or the vision system in combination with natural vision.

2.3.2 Down to a defined height in the visual segment, typically at or above 30 m (100 ft), the visual references may be acquired solely by means of the vision system. The defined height depends on the airworthiness approval and the specific approval by the State of the Operator or State of Registry. Below this height the visual references should be solely based on natural vision. In the most advanced applications, the vision system may be used down to touchdown without the requirement for natural vision acquisition of visual references. This means that such a vision system may be the sole means of acquiring visual references and can be used without natural vision.

## 2.4 Vision systems training

Training and recent experience requirements should be established by the State of the Operator for commercial operators and the State of Registry for general aviation operators. For commercial operators, the training programmes should be approved by the State of the Operator and the implementation of the training should be subject to oversight by that State. Training should address all flight operations for which the vision system is used.

## 2.5 Visual references

2.5.1 In principle, the required visual references do not change due to the use of an EVS or CVS, but those references are allowed to be acquired by means of the vision system until a certain height during the approach as described in 2.3.2 (see Figure G-1).

2.5.2 In States that have developed requirements for operations with vision systems, the use of visual references have been regulated and examples of this are provided in the *Manual of All-Weather Operations* (Doc 9365).

## 3. HYBRID SYSTEMS

A hybrid system generically means that two or more systems are combined. The hybrid system typically has improved performance compared to each of the component systems, which in turn may qualify for operational credit. The inclusion of more systems in the hybrid system normally enhances the performance of the system. The *Manual of All-Weather Operations* (Doc 9365) contains some examples of hybrid systems.

EVS operations

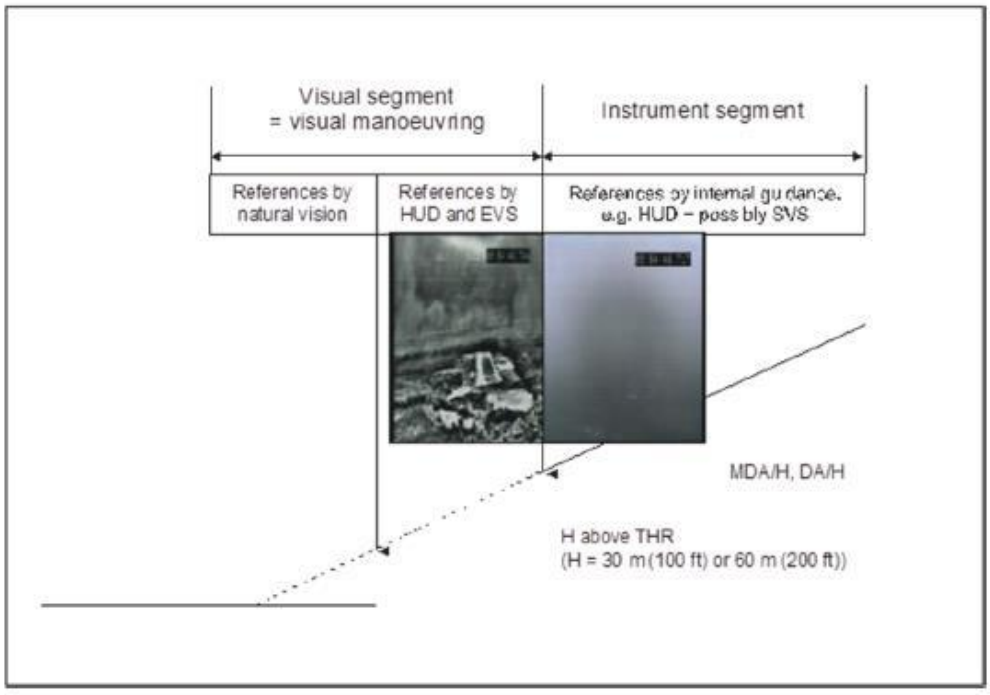


**Figure G-1. EVS operations — transition from instrument to visual references**

## 4. OPERATIONAL CREDITS

4.1 Aerodrome operating minima are expressed in terms of minimum visibility/RVR and MDA/H or DA/H. When aerodrome operating minima are established, the combined capability of the helicopter equipment and on-ground infrastructure should be taken into account. Better equipped helicopters may be able to operate into lower natural visibility conditions, lower DA/H and/or operate with less ground infrastructure. Operational credit means that the aerodrome operating minima may be reduced in case of suitably equipped helicopters. Another way to grant operational credit is to allow visibility requirements to be fulfilled, wholly or partly, by means of the on-board systems. HUD, automatic landing or vision systems, which were not available at the time when the criteria for aerodrome operating minima were originally established.

4.2 The granting of operational credits does not affect the classification (i.e. Type or Category) of an instrument approach procedure since they are designed to support instrument approach operations conducted using helicopters with the minimum equipment prescribed.

4.3 The relation between the procedure design and the operation can be described as follows. The OCA/H is the end product of the procedure design, which does not contain any RVR or visibility values. Based on the OCA/H and all the other elements such as available runway visual aids, the operator will establish MDA/H or DA/H and RVR/visibility, i.e. the aerodrome operating minima. The values derived should not be less than those prescribed by the State of the Aerodrome.

## 5. OPERATIONAL PROCEDURES

In accordance with Section II, 4.16.2, the operator should develop suitable operational procedures associated with the use of an automatic landing system, a HUD or an equivalent display, vision systems and hybrid systems.

The procedures should be included in the operations manual and cover at least the following:

a) limitations;
b) operational credits;
c) flight planning;
d) ground and airborne operations;
e) crew resource management;
f) standard operating procedures; and
g) ATS flight plans and communication.

## 6. APPROVALS

### 6.1 General

*Note.— When the application for a specific approval relates to operational credits for systems not including a vision system, the guidance on approvals in this attachment may be used to the extent applicable as determined by the State of the Operator for commercial operators and the State of Registry for general aviation operators.*

6.1.1 The operator that wishes to conduct operations with an automatic landing system, a HUD or an equivalent display, a vision system or a hybrid system will need to obtain certain approvals as prescribed in the relevant SARPs. The extent of the approvals will depend on the intended operation and the complexity of the equipment.

6.1.2 Systems that are not used for an operational credit or otherwise critical to the aerodrome operating minima, e.g. vision systems used to enhance situational awareness may be used without a specific approval. However, the standard operating procedures for these systems should be specified in the operations manual or an equivalent document. An example of this type of operation may include an EVS or an SVS on a head-down display that is used only for situational awareness of the surrounding area of the helicopter during ground operations where the display is not in the pilot's primary field of view. For enhanced situational awareness, the installation and operational procedures need to ensure that the operation of the vision system does not interfere with normal procedures or the operation or use of other aircraft systems. In some cases, modifications to these normal procedures for other helicopter systems or equipment may be necessary to ensure compatibility.

6.1.3 The requirement in Section II, 4.16, requires that for commercial air transport operations, the use of an automatic landing system, a HUD or an equivalent display, EVS, SVS or CVS or any combination of those systems into a hybrid system, should be approved when those systems are used "for the safe operation of a helicopter". When operational credits are granted by the State of the Operator as per the requirement in FOR (A), 2.2.8.1.1, the use of that system becomes essential for the safety of such operations and is subject to a specific approval. The use of these systems solely for enhanced situational awareness, reduced flight technical error and/or reduced workload is an important safety feature, but does not require a specific approval.

6.1.4 For commercial air transport operations, any operational credit that has been granted should be reflected in the operations specifications for the type or individual helicopter as applicable.

6.1.5 For general aviation operations, the Standard in Section III, 4.11, requires the State of Registry to establish criteria for the use of an automatic landing system, a HUD or an equivalent display, EVS, SVS or CVS or any combination of those systems into a hybrid system for the safe operation of the helicopter and specifies such criteria. When operational credits are granted by the State of Registry as per the Standard in 2.2.1.1, the use of that system becomes essential for the safety of those operations and approval of the use of such systems is part of the operational credit specific approval. The use of these systems solely for enhanced situational awareness, reduced flight technical error and/or reduced workload is an important safety feature, but does not require a specific approval.

6.1.6 For general aviation operations, any operational credit that has been granted should be reflected in the specific approval template and be carried on board the particular helicopter.

## 6.2 Specific approvals for operational credit

6.2.1 To obtain an approval for operational credit, the operator will need to specify the desired operational credit and submit a suitable application. The content of a suitable application should include:

a) *Applicant details.* For AOC holders, the company name, AOC number and email address. For other operators, the official name and any business or trading name(s), address, mailing address, email address and contact telephone/fax numbers of the applicant.

b) *Aircraft details.* Aircraft make(s), model(s) and registration mark(s).

c) *Operator's vision system compliance list.* The contents of the compliance list are included in the *Manual of All-Weather Operations* (Doc 9365). The compliance list should include the information that is relevant to the approval requested and the registration marks of the aircraft involved. If more than one type of aircraft/fleet is included in a single application, a completed compliance list should be included for each aircraft/fleet.

d) *Documents to be included with the application.* Copies of all documents to which the operator has made references should be included in the application. There should be no need to send complete manuals; only the relevant sections/pages should be required. Additional guidance material can be found in the *Manual of All-Weather Operations* (Doc 9365).

e) *Name, title and signature.*

6.2.2 The following items should be covered in a vision systems compliance list:

a) reference documents used in compiling the submission for approval;
b) flight manual;
c) feedback and reporting of significant problems;
d) requested operational credit and resulting aerodrome operating minima;
e) operations manual (or an equivalent document) entries including MEL (where applicable) and standard operating procedures;
f) safety risk assessment;
g) training programmes; and
h) continuing airworthiness.

Expanded guidance on these items is contained in the *Manual of All-Weather Operations* (Doc 9365).

# ATTACHMENT H

# SIGNALS FOR USE IN THE EVENT OF INTERCEPTION

*Reference to Appendix 1, Para 2.1.26*

**1. Signals initiated by intercepting aircraft and responses by intercepted aircraft**

| Series | INTERCEPTING Aircraft Signals | Meaning | INTERCEPTED Aircraft Responds | Meaning |
|---|---|---|---|---|
| 1. | DAY or NIGHT — Rocking aircraft and flashing navigational lights at irregular intervals (and landing lights in the case of a helicopter) from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft (or to the right if the intercepted aircraft is a helicopter) and, after acknowledgement, a slow level turn, normally to the left (or to the right in the case of a helicopter) on the desired heading.<br>*Note 1.— Meteorological conditions or terrain may require the intercepting aircraft to reverse the positions and direction of turn given above in Series 1.*<br>*Note 2.— If the intercepted aircraft is not able to keep pace with the intercepting aircraft, the latter is expected to fly a series of racetrack patterns and to rock the aircraft each time it* | You have been intercepted. Follow me. | DAY or NIGHT — Rocking aircraft, flashing navigational lights at irregular intervals and following. | Understood, will comply. |

| | | | | |
|---|---|---|---|---|
| 2. | *passes the intercepted aircraft.*<br>DAY or NIGHT — An abrupt breakaway manoeuvre from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft. | You may proceed. | DAY or NIGHT — Rocking aircraft, flashing navigational lights at irregular intervals and following. | Understood, will comply.<br>. |
| 3. | DAY or NIGHT — Lowering landing gear (if fitted), showing steady landing lights and overflying runway in use or, if the intercepted aircraft is a helicopter, overflying the helicopter landing area. In the case of helicopters, the intercepting helicopter makes a landing approach, coming to hover near to the landing area | Land at this aerodrome. | DAY or NIGHT — Rocking aircraft, flashing navigational lights at irregular intervals and following. | Understood, will comply |

**2. Signals initiated by intercepted aircraft and responses by intercepting aircraft**

| Series | INTERCEPTING Aircraft Signals | Meaning | INTERCEPTED Aircraft Responds | Meaning |
|---|---|---|---|---|
| 4. | DAY or NIGHT — Raising landing gear (if fitted) and flashing landing lights while passing over runway in use or helicopter landing area at a height exceeding 300 m (1 000 ft) but not exceeding 600 m (2 000 ft) (in the case of a helicopter, at a height exceeding 50 m (170 ft) but not exceeding 100 m (330 ft)) above the aerodrome level, and continuing to circle runway in use or helicopter landing area. If unable to flash landing lights, flash any other lights available. | Aerodrome you have designated is inadequate. | DAY or NIGHT — If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear (if fitted) and uses the Series 1 signals prescribed for intercepting aircraft.<br><br>If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft. | Understood, follow me.<br><br>Understood, you may proceed. |
| 5 | DAY or NIGHT — Regular switching on and off of all available lights but in such a manner as to be distinct from flashing lights. | Cannot comply | DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft | Understood |
| 6. | DAY or NIGHT — Irregular flashing of all available lights. | In distress | DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft. | Understood |

# ATTACHMENT I

## LIST OF FLIGHT OPERATIONS MANDATORY OCCURENCE REPORTS

*(Refer to Chapter 1.3 of this FOR and **CAA Nepal Guidance on Occurrence Reporting**. Occurrence Reporting form is available in NCAR chapter C9)*

**A. Non-emergencies**

(1) (a) Risk of collision with an aircraft, terrain or other object or an unsafe situation when avoidance action would have been appropriate.

(b) An avoidance manoeuvre required to avoid a collision with an aircraft, terrain or other object.

(c) An avoidance manoeuvre to avoid other unsafe situations.

(2) Take-off or landing incidents, including precautionary or forced landings. Incidents such as under-shooting, overrunning or running off the side of runways. Take-offs, rejected take-offs, landings or attempted landings on a closed, occupied or incorrect runway. Runway incursions.

(3) Inability to achieve predicted performance during take-off or initial climb.

(4) Critically low fuel quantity or inability to transfer fuel or use total quantity of usable fuel.

(5) Loss of control (including partial or temporary loss of control) from any cause.

(6) Occurrences close to or above takeoff speed, resulting from or producing a hazardous or potentially hazardous situation (e.g. rejected take-off, tail strike, engine power loss etc.).

(7) Go-around producing a hazardous or potentially hazardous situation.

(8) Unintentional significant deviation from airspeed, intended track or altitude. (more than 91 m (300 ft.)) from any cause.

(9) Descent below decision height/altitude or minimum descent height/altitude without the required visual reference.

(10) Loss of position awareness relative to actual position or to other aircraft.

(11) Breakdown in communication between flight crew (CRM) or between Flight crew and other parties (cabin crew, ATC, engineering).

(12) Heavy landing - a landing deemed to require a 'heavy landing check'.

(13) Exceedance of fuel imbalance limits.

(14) Incorrect setting of an SSR code or of an altimeter subscale.

(15) Incorrect programming of, or erroneous entries into, equipment used for navigation or performance calculations, or use of incorrect data.

(16) Incorrect receipt or interpretation of radiotelephony messages.

(17) Fuel system malfunctions or defects, which had an effect on fuel supply and/or distribution.

(18) Aircraft unintentionally departing a paved surface.

(19) Collision between an aircraft and any other aircraft, vehicle or other ground object.

(20) Inadvertent and/or incorrect operation of any controls.

(21) Inability to achieve the intended aircraft configuration for any flight phase (e.g. landing gear and doors, etc.).

(22) A hazard or potential hazard which arises as a consequence of any deliberate simulation of failure conditions for training, system checks or training purposes.

(23) Abnormal vibration.

(24) Operation of any primary warning system associated with manoeuvring of the aircraft e.g. configuration warning, over speed warning etc. unless:

(a) The crew conclusively established that the indication was false. Provided that the false warning did not result in difficulty or hazard arising from the crew response to the warning; or

(b) Operated for training or test purposes.

(25) GPWS/TAWS ‘warning’ when:

(a) the aircraft comes into closer proximity to the ground than had been planned or anticipated; or

(b) any difficulty or hazard arises or might have arisen as a result of crew response to the ‘warning’ e .g. possible reduced separation from other traffic. This could include warning of any Mode or Type i.e. genuine, nuisance or false.

(26) GPWS/TAWS ‘alert’ when any difficulty or hazard arises or might have arisen as a result of crew response to the ‘alert’.

(27) ACAS RAs.

(28) Jet or prop blast incidents resulting in significant damage or serious injury purposes.

**B. Emergencies**

(1) Fire, explosion, smoke or toxic or noxious fumes, even though fires were extinguished.

(2) The use of any non-standard procedure by the flight or cabin crew to deal with an emergency when:

(a) the procedure exists but is not used; or
(b) a procedure does not exist; or
(c) the procedure exists but is incomplete or inappropriate; or
(d) the procedure is incorrect; or
(e) the incorrect procedure is used.

(3) Inadequacy of any procedures designed to be used in an emergency, including when being used for maintenance, training or test purposes.

(4) An event leading to an emergency evacuation.

(5) The use of any emergency equipment or prescribed emergency procedures in order to deal with a situation.

(6) An event leading to the declaration of an emergency ('Mayday' or 'Pan').

(7) Failure of any emergency system or equipment, including all exit doors and lighting, to perform satisfactorily, including when being used for maintenance, training or test purposes.

(9) Events requiring any emergency use of oxygen by any crew member.

**C. Crew Incapacitation**

(1) Incapacitation of any member of the flight crew, including that which occurs prior to departure if it is considered that it could have resulted in incapacitation after takeoff.

(2) Incapacitation of any member of the cabin crew which renders them unable to perform essential emergency duties.

**D. Injury**

(1) Occurrences, which have or could have led to significant injury to passengers or crew but which are not considered reportable as an accident.

**E. Meteorology**

(1) A lightning strike which resulted in damage to the aircraft or loss or malfunction of any essential service.

(2) A hail strike which resulted in damage to the aircraft or loss or malfunction of any essential service.

(3) Severe turbulence encounter – an encounter resulting in injury to occupants or deemed to require a 'turbulence check' of the aircraft.

(4) A windshear encounter.

(5) Icing encounter resulting in handling difficulties, damage to the aircraft or loss or malfunction of any essential service.

**F. Security**

(1) Unlawful interference with the aircraft including a bomb threat or hijack.

(2) Difficulty in controlling intoxicated, violent or unruly passengers.

(3) Discovery of a stowaway.

**G. Other Occurrences**

(1) Repetitive instances of a specific type of occurrence which in isolation would not be considered 'reportable' but which due to the frequency at which they arise, form a potential hazard.

(2) A bird strike which resulted in damage to the aircraft or loss or malfunction of any essential service.

(3) Wake turbulence encounters.

(4) Any other occurrence of any type considered to have endangered or which might have endangered the aircraft or its occupants on board the aircraft or on the ground.

(5) Any passenger displaying unusual medical conditions including suspected communicable disease that is deemed to require the attention of medical personnel.

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# FLIGHT OPERATIONS MANDATORY OCCURRENCE REPORT FORM

*Occurrence Reporting Form is available in NCAR chapter C9*

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