

GOVERNMENT OF INDIA
OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION
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CIVIL AVIATION REQUIREMENTS
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SUBJECT: OPERATION OF COMMERCIAL AIR TRANSPORT - HELICOPTERS.

INTRODUCTION

This CAR is issued under the provision of Rule 133A of the Aircraft Rules 1937 and is in conformity with ICAO Annex 6 Pt III. It lays down the minimum operational, equipment and instrument requirements for helicopters registered in India and engaged in domestic and international air transport operations.

These requirements are applicable to scheduled as well as non-scheduled air transport operations.

This CAR is issued in supersession of CAR Section 2 Series 'O' Part IV Issue III dated 26th July 1999.

DEFINITIONS

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.

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 (Flight Crew Operating Manual-FCOM). A manual, acceptable to DGCA 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 Permit / Certificate. An operating permit/ certificate or an equivalent document issued by DGCA authorizing an operator to carry out specified commercial air transport operations.

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. Alternate heliports include the following:

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

En-route alternate. A heliport at which a helicopter would be able to land after experiencing an abnormal or emergency condition while en route.

Destination alternate. An alternate heliport to which a helicopter may proceed 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 operations using instrument approach procedures. Instrument approach and landing operations are classified as follows:

Non-precision approach and landing operation. An instrument approach and landing which utilizes lateral guidance but does not utilize vertical guidance.

Approach and landing operations with vertical guidance. An instrument approach and landing which utilizes lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations.

Precision approach and landing operations. An instrument approach and landing using precision lateral and vertical guidance with minima as determined by the category of operation.

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

- a) a ground-based navigation aid; or*
- b) computer generated navigation data.*

Categories of precision approach and landing operations:

Category I (CAT I) operation. A precision instrument approach and landing with 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.

Category II (CAT II) operation. A precision instrument approach and landing with 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**.

Category IIIA (CAT IIIA) operation. A precision instrument approach and landing with:

- a) a decision height lower than 30 m (100 ft) or no decision height; and
- b) a runway visual range not less than **175 m**.

Category IIIB (CAT IIIB) operation. A precision instrument approach and landing with:

- a) a decision height lower than 15 m (50 ft) or no decision height; and
- b) a runway visual range less than **175 m** but not less than 50 m.

Approach and landing phase - helicopters. That part of the flight from 500 ft (150m) above the elevation of the final approach and take-off area (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.

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.

Category A rotorcraft. Category A rotorcraft means multiengine rotorcraft designed with engine and system isolation features specified in FAR part 29 and utilizing scheduled take off and landing operations under a critical engine failure concept which assures adequate designated surface area and adequate performance capability for continued safe flight in the event of engine failure.

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.

Continuing airworthiness. The set of processes by which all aircraft comply with the applicable airworthiness requirements and remain in a condition for safe operation throughout their operating life.

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

Crew member. A person assigned by an operator to duty on an aircraft during 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 Aircraft (Carriage of Dangerous Goods) Rules, 2003

Decision altitude (DA) or decision height (DH). A specified altitude or height in the precision approach or approach with vertical guidance at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.

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 they may be written in the form "decision altitude/height" and abbreviated are used "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.

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.

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.

Final approach and take-off area (FATO). A defined area over which the final phase of the approach maneuver to hover or landing is completed and from which the take-off maneuver is commenced. Where the FATO is to be used by performance Class I helicopters, the defined area includes the rejected take-off area available.

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. 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 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 CAR Section 7 Series 'M' Part II, 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 prevention and investigation.

Flight safety documents system. A set of inter-related 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 operators' 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.

Helideck. A heliport located on a floating or fixed off-shore 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. - 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 precision approach and landing operations, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H) as appropriate to the category of the operation;
- c) landing in approach and landing operations with vertical guidance, expressed in terms of visibility and/or runway visual range and decision altitude/height (DA/H); and
- d) landing in non-precision approach and landing operations, expressed in terms of visibility and/or runway visual range, minimum descent altitude/height (MDA/H) and, if necessary, cloud conditions.

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

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

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

Note. - The specified minima for visual meteorological conditions as contained in CAR Section 9 Series 'C' Part I

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

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

Note.- LDP applies to performance Class I helicopters.

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

MOE. 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, either in accordance with the approved data and the procedures described in the maintenance organization's procedures manual or under an equivalent system.

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 non precision approach or circling approach 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 heliport elevation or to the threshold elevation if that is more than 2 m (7ft) below the heliport elevation. A minimum descent height for a circling approach is referenced to the heliport 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.

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, RNAV1.

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

Note 2.- The term RNP, previously defined as "a statement of navigation performance necessary for operation within a defined airspace", has been removed from this annex as the concept of RNP has been overtaken by the concept of PBN. The term RNP in this CAR is now solely used in the context of navigation and specification 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 prescribed by Aircraft Rules 1937.

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 person or property on the ground is acceptable.

Note.-Those parts of a congested area satisfying the above requirement are 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 (7ft) 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 power-unit 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 maneuver or late in the landing maneuver, in which cases a forced landing may be required.

Operations in performance Class 3. Operations with performance such. that, in the event of a 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 permit/ 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 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.

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.

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

Required communication performance (RCP). A statement of the performance requirements for operational communication in support of specific ATM functions.

Required communication performance type (RCP type). A label (e.g. RCP 240) that represents the values assigned to RCP parameters for communication transaction time, continuity, availability and integrity.

Required navigation performance (RNP). A statement of the navigation performance necessary for operation within a defined airspace.

Note.— Navigation performance and requirements are defined for a particular RNP type and/ or application.

Rest period. Any period of time on the ground during which a flight crew member is relieved of all duties by the operator.

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 centre line.

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

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.

Safety management system. A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures

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

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

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.

Take-off and initial climb phase. That part of the flight from the start of take-off to 500 ft (150 m) 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, a engine failure occurring at this point, either a rejected take-off may be made or a take-off safely continued.

Note.- TDP applies to performance Class I helicopters.

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

*Note. - The specified minima are contained in **CAR Section 9 Series 'C' Part I.***

VToss. The minimum speed at which climb shall be achieved with the critical power-unit 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.

1. GENERAL REQUIREMENTS

1.1 Compliance with Laws, Regulations and Procedures

- 1.1.1 The operator engaged in international operations shall ensure that all employees when abroad are fully aware and shall comply with the laws, regulations and procedures of those States in which operations are conducted.
- 1.1.2 The operator 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 heliport 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 laws, regulations and procedures as are pertinent to the performance of their respective duties in the operation of the helicopter.

- 1.1.3 Operators shall ensure that flight crew members demonstrate the ability to speak and understand the language used for radiotelephony communications as specified in para 6A (Language Proficiency) of Sec A schedule 2 of a/c rule 1937.
- 1.1.4 An operator or a designated representative shall have responsibility for operational control.
- 1.1.5 Responsibility for operational control shall be delegated only to the pilot-in-command and 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.
- 1.1.6 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.
- 1.1.7 If an emergency situation occurs within India, which endangers the safety of the helicopter or persons necessitates the taking of action which involves a violation of regulations or procedures, the pilot-in-command/operator shall notify the nearest Air Safety office of DGCA without delay. In the event such emergency situation occurs outside India, the pilot-in-command shall notify the appropriate local authority without delay and if required by the State in which the incident occurs, the pilot-in-command shall also submit a report of the occurrence on any such violation to the appropriate authority of such State. The pilot-in-command shall submit a copy of the occurrence to the DGCA marked attention of Director of Air Safety (Hqrs.) with a copy endorsed to the Regional Air Safety Office where the helicopter is normally based. Such reports shall be submitted within 48 hours.
- 1.1.8 Operators shall ensure that pilot-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.

- 1.1.9 An operator shall establish and maintain an accident prevention and flight safety programme as per the requirements given in CAR Section 5, Series 'F' Part I
- 1.1.10 An operator of a helicopter of a certificated take-off mass in excess of 7000 kg or having a passenger seating configuration of more than 9 and fitted with a

flight data recorder should establish and maintain a flight data analysis programme as part of its accident prevention and flight safety programme.

Note. An operator may contract the operation of a flight data analysis programme to another party while retaining overall responsibility for the maintenance of such a programme.

1.1.11 Any flight data analysis programme shall be non-punitive and contain adequate safeguards to protect the source(s) of the data.

1.2 Compliance by a foreign operator with DGCA rules and regulations

1.2.1 When DGCA identifies a case of non-compliance or suspected non-compliance by a foreign operator with laws, regulations and procedures applicable within India or a similar serious safety issue with that operator, then DGCA shall immediately notify the operator and, if the issue warrants it, the State of Registry.

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

1.3 Safety Management

1.3.1 The Operator shall follow the safety programme established by DGCA, from time to time, to achieve an acceptable level of safety in the operation of aircraft. the definition of acceptable levels of safety is contained in Appendix II.

1.3.2 The safety programme includes the legislative and regulatory provisions, which the operator is required to comply for the conduct of safe operations. It also includes provisions relating to activities such as incident reporting, safety investigations, safety audits and safety promotions as required in the various documents issued by DGCA.

1.3.3 An operator shall implement a safety management system acceptable to the DGCA, which as a minimum:

- a) identifies safety hazards;
- b) ensures that remedial action necessary to maintain an acceptable level of safety is implemented;
- c) provides for continuous monitoring and regular assessment of the safety level achieved; and
- d) aims to make continuous improvement to the overall level of safety.

- 1.3.4 The detailed requirements and guidance for establishing management system are given in CAR Section 1, Series C Part I.
- 1.3.5 An operator shall establish a flight safety documents system, for the use and guidance of operational personnel, as part of its safety management system. The requirements on flight safety documents system are given in CAR Section 5, Series 'F' Part I
- 1.4 **Dangerous goods.** The operator shall adhere to the provisions for carriage of dangerous goods as contained in Aircraft (Carriage of Dangerous Goods) Rules, 2003 and CAR Section 11.
- 1.5 **Use of psychoactive substances.** The operator shall adhere to the provisions concerning the use of psychoactive substances as contained in Rule 24 of the Aircraft Rules, 1937 and CAR Section 9 Series 'C' Part I.

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" as stated above, 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.
- 2.1.3 The Airports Authority of India shall ensure that subject to their published conditions of use, heliports and their facilities are kept continuously available for flight operations during their published hours of operations, irrespective of weather conditions.

2.2 Operational certification and supervision

2.2.1 Air operator permit

- 2.2.1.1 An operator shall not engage in commercial air transport operations unless in possession of a valid Air Operator Permit issued by DGCA.

2.2.1.2 The Air operator permit shall authorize the operator to conduct commercial air transport operations in accordance with specified authorizations, conditions and limitations as may be specified therein.

Note.—Provisions for the content of the air operator permit and its associated operations specifications are contained in 2.2.1.5 and 2.2.1.6.

2.2.1.3 The issue of an air operator permit by the DGCA 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.

2.2.1.4 The continued validity of an Air operator permit/ certificate shall depend upon the operator maintaining the requirements of 2.2.1.3 under the supervision of DGCA.

2.2.1.5 The air operator permit/certificate shall contain at least the information as given in CAR section 3 Series C part III.

2.2.1.6 The operations specifications associated with the air operator permit / certificate shall contain the information as given in CAR section 3 Series C part III.

2.2.1.7 DGCA shall carry out surveillance of the permit holders to ensure continued surveillance so that the required standards of operations established in 2.2 are maintained. The operator shall ensure that its capability to undertake air transport operations and maintenance of aircraft is not allowed to degrade and shall ensure compliance with CAR Section 2 Series 'A' Part IV and CAR Section 8 Series 'A' Part II in this regard.

2.2.2 Surveillance of operations by a foreign operator

2.2.2.1 An air operator certificate issued by another Contracting State, shall be recognized as valid, provided that the requirements under which the certificate was issued are at least equal to the applicable requirements specified in this CAR

2.2.2.2 DGCA shall conduct surveillance of operators while operating through India as per the established programme and take appropriate action when necessary to preserve safety. The notification and procedure to conduct such surveillance is given in AIC 5 of 2009.

2.2.2.3 An operator shall meet and maintain the requirements established by DGCA while operating through India.

Note.—Guidance on the surveillance of operations by foreign operators may be found in the Manual of Procedures for Operations Inspection, Certification and Continued Surveillance (Doc 8335).

2.2.3 Operations manual

2.2.3.1 The operator shall provide an operations manual for the use and guidance of the personnel engaged in the operation of the aircraft. The contents of the manual shall meet the requirements of the CAR Section 2 Series 'O' Part X. The operations manual shall be amended or revised as necessary to ensure that the information contained therein is kept up to date. All such amendments or revisions shall be issued to all personnel that are required to use this manual.

2.2.4 Operating instructions - General

2.2.4.1 The 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 The operator should issue operating instructions and provide information on helicopter climb performance with all engines operating to enable the pilot-in-command to determine the climb gradient that can be achieved during the take-off and initial climb phase for the existing take-off conditions and intended take-off technique. This information should be based on the helicopter manufacturers or other data, acceptable to the DGCA, and should be included in the operations manual.

2.2.5 In-flight simulation of emergency situations:

The 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 and the flight manual or other documents associated with the Certificate of Airworthiness and otherwise in the operations manual. The design and utilization of check lists shall observe human factors principle.

Note.- Guidance material on the application of human factor principles can be found in Human Factors Training Manual (ICAO-DOC 9683)

2.2.7 Minimum flight altitudes (operations under IFR)

2.2.7.1 The operator may establish minimum flight altitudes for those routes flown for which minimum flight altitudes have been established DGCA/AAI.

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 DGCA 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 **CAR Section 9 Series 'C' Part I**.

2.2.7.3 The method for establishing the minimum flight altitudes should be approved by the DGCA.

2.2.7.4 DGCA may approve such method only after considering the probable effects of the following factors on the safety of the operation in question.

- (a) the accuracy and reliability with which the position of the helicopter can be determined;
- (b) the inaccuracies in the indications of the altimeters used;
- (c) the characteristics the terrain (sudden change in the elevation);
- (d) the probability of encountering unfavorable meteorological conditions (e.g. severe turbulence and descending air currents);
- (e) possible inaccuracies in aeronautical charts; and
- (f) airspace restrictions.

2.2.8 Helicopter operating minima (operations under IFR)

2.2.8.1 The operator shall establish helicopter operating minima for each heliport to be used in operations and the method of determination of such minima shall be approved by DGCA. Such minima shall not be lower than any that may be established for such heliports by DGCA for helicopter operation.

Note – Guidance for operating minima are given in Operations Circular 5 of 1999 and 4 of 2000.

2.2.8.2 While establishing the helicopter operating minima which will apply to any particular operation, the operator shall take full account of:

- i) the type, performance and handling characteristics of the helicopter;
- ii) the composition of the flight crew, their competence and experience;

- iii) the declared distances;
- iv) the adequacy and performance of the available visual and non-visual ground aids;
- v) the equipment available on the helicopter for the purpose of navigation and/or control of the flight path during the approach to landing and the missed approach;
- vi) the obstacles in the approach and missed approach areas and the obstacle clearance altitude/height for the instrument approach procedures;
- vii) the means used to determine and report meteorological conditions; and viii) the obstacles in the climb-out areas and necessary clearance margins.

2.2.8.3 Category II and Category III instrument approach and landing operation shall not be authorized unless RVR information is provided.

2.2.8.4 For instrument approach and landing operations, heliport operating minima below 800 m visibility shall not be authorized unless RVR information or an accurate measurement or observation of visibility is provided.

Note. - Guidance on the operationally desirable and currently attainable accuracy of measurement or observation is given in ICAO Annex3 - Meteorological Service for International Air Navigation, Attachment B.

2.2.9 Fuel and Oil Records

2.2.9.1 The operator shall maintain fuel and oil records to enable DGCA to ascertain that for each flight, the requirements of para 2.3.6 of this CAR have been complied with.

2.2.9.2 Fuel and oil records shall be retained by the operator for a period of **six** 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 requirements to limit flight time and flight duty periods and for the provision of adequate rest periods for all its crew members. These requirements shall be in accordance with the CAR Sec-7 Series J Part II and included in the operations manual.

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

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;
 - 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 inform the passengers of the location and general manner of use of the principal emergency equipment carried for collective use.
- 2.2.11.3 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, by reason of turbulence or any emergency occurring during flight, precaution is considered necessary, all passengers on board a helicopter shall be secured in their seat by means of seat belts or harnesses provided.

2.2.12 Over water flights

All helicopters on flights over water 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 the pilot has issued pilot's acceptance report either on tech-log or any other appropriate document, certifying that the pilot-in-command is satisfied that:
- a) The helicopter is airworthy and has valid maintenance release.
 - b) The instruments and equipment as prescribed by the manufacturer/ DGCA are installed and are sufficient for the flight/ type of operation to be undertaken;
 - c) All emergency equipment required for the intended flight are serviceable and are on board;
 - d) The mass of the helicopter and center of gravity location are such that flight can be conducted safely, taking into account the flight conditions expected;
 - e) Any load carried is properly distributed and safely secured;
 - f) It carries sufficient fuel and oil for the intended flight in accordance with this part of the CAR;

- g) The engines are operating with normal parameters at rated power;
- h) The various documents required for the flight are valid and are on board;
- i) There is no physical damage apparent during his walk around inspection;
- j) The flight controls of the helicopter are working freely and in correct senses.
- k) View of the pilot is not interfered with/by any part of the helicopter structure.
- l) A check has been completed to ensure that the aircraft can be operated within approved operating limitations contained in the Certificate of Airworthiness/ Flight Manual or other appropriate and relevant documents;
- m) That the operational flight plan has been completed for the intended flight.

Note.1- As regard to item 2.3.1(g), the pilot shall ensure before take-off that engine(s) is/are developing correct power.

*Note 2.-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 pilot acceptance report (flight preparation form) shall be kept by the operator for a period of three months.

2.3.3 Operational Flight Planning

2.3.3.1 An operator/pilot shall complete the operational flight plan and file with the AAI for every intended flight or series of flights in a method acceptable to ATC.

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

2.3.3.3 All documents relating to operational flight plan shall be retained by the operator for a period of six months.

2.3.4 Alternate Heliports

2.3.4.1 Destination alternate heliport

2.3.4.1.1 For a flight to be conducted in accordance with the instrument flight rules, at least one suitable alternate heliport shall be specified in the operational flight plan, unless:

- a) the duration of the flight and 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 can be made under visual meteorological conditions as prescribed by the DGCA; or

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

2.3.4.1.2 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.

2.3.4.1.3 For a flight departing to a destination which is forecast to be below the heliport operating minima, two destination alternates should be selected. The first destination alternate should be at or above the heliport operating minima for destination and the second at or above the heliport operating minima for alternate.

2.3.4.2 Suitable off-shore alternates may be specified subject to the following:

- a) the off-shore alternates shall be used only after a point of no return (PNR). Prior to PNR on-shore 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 alternates;
- c) one engine inoperative performance capability shall be attainable prior to arrival at the alternate;
- d) 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.

2.3.4.3 Off-shore alternates should not be used when it is possible to carry enough fuel to have an on-shore alternate. Such circumstances should be exceptional and should not include payload enhancement in adverse weather conditions. Offshore alternates should not be used in a hostile environment.

2.3.5 Weather conditions

2.3.5.1 A flight to be conducted in accordance with the visual flight rules 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 under the visual flight rules will, at the appropriate time, be such as to render compliance with these rules possible.

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 instrument flight rules shall not be commenced unless information is available which indicates that conditions at the heliport of intended landing or, when an alternate is required, at least one alternate heliport will, at the time of arrival, be at or above the heliport operating minima.
- 2.3.5.3 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.
- 2.3.5.4 A flight to be planned or expected in suspected or known icing conditions shall not be commenced unless the helicopter has been inspected for icing and, if necessary, has been given appropriate de/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 (ICAO Doc 9640).

2.3.6 Fuel and oil supply

- 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 Visual Flight Rules (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:
- a) to fly to the heliport to which the flight is planned;
 - b) to fly thereafter for a period of 20 minutes at best-range speed plus 10 % of the planned flight time; and
 - c) to have an additional amount of fuel, sufficient to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the DGCA.
- 2.3.6.3 Instrument flight rules (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 sufficient to allow the helicopter:

2.3.6.3.1 When an alternate is not required, in terms of 2.3.4.1 (a), to fly to the heliport to which the flight is planned, and thereafter:

- a) to fly 30 minutes at holding speed at 1500 feet (450m) above the destination heliport under standard temperature conditions and approach and land; and
- b) to have an additional amount of fuel, sufficient to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the DGCA.

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

- a) to fly to the alternate specified in the flight plan; and then
- b) to fly for 30 minutes at holding speed at 1500 ft (450 m) above the alternate under standard temperature conditions, and approach and land; and
- c) to have an additional amount of fuel, sufficient to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the DGCA.

2.1.1.1 When no suitable alternate is available, in terms of 2.3.4.1.1 (b), 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 or for a period of two hours at holding speed whichever is more.

2.3.6.3.3 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 loss of pressurization, where applicable, or 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 para 2.3.6 precludes amendment of a flight plan in flight in order to re-plan the flight to another heliport, provided that the requirements of para 2.3.6 can be complied with from the point where the flight has been re-planned.

2.3.7 Refueling with passengers on board or rotor turning

A helicopter should not be refueled with passengers embarking, on board, disembarking or when the rotor is turning unless the operator is granted specific authorization by DGCA setting forth the conditions under which such fuelling may be carried out. The operator shall also adhere to all precautions laid down in Rule 25A of the Aircraft Rules, 1937 regarding fuelling of aircraft.

Note.- 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

2.3.8.1 A flight to be operated at flight altitude at which the atmospheric pressure in personnel compartments will be less than 700hpa shall not be commenced unless sufficient stored breathing oxygen is carried to supply:

- a) all crew members and 10% of the passengers for any period in excess of 30 minutes that the pressure in the compartment occupied by them will be between 700 hpa and 620 hpa; and
- b) the crew and passengers for any period that the atmospheric pressure in compartments occupied by them will be less than 620 hpa.

2.3.8.2 A flight to be operated with a pressurized helicopter shall not be commenced unless sufficient quantity of stored breathing oxygen is carried to supply all the crew members and passengers as is appropriate to the circumstances of the flight being undertaken, in the event of loss of pressurization, for any period that the atmospheric pressure in any compartment occupied by them would be less than 700 hpa. In addition, when a helicopter is operated at flight altitudes at which the atmospheric pressure is more than 376 hpa, and cannot descend safely to a flight altitude at which the atmospheric pressure is equal to 620 hpa, within four minutes, there shall be no less than a 10 minute supply for the occupants of the passenger compartment.

Note. Approximate altitude in the standard atmosphere corresponding to the value of absolute pressure used in the text are as follows:

Absolute pressure	Meters	Feet
<i>700 hPa</i>	3000	10000
<i>620 hPa</i>	4000	13000
<i>376 hPa</i>	7600	25000

2.4 In-flight procedures

2.4.1 Helicopter 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, in compliance with the operating minima established in accordance with 2.2.8.1
- 2.4.1.2 An instrument approach shall not be continued beyond the outer marker fix in case of precision approach, or below 1000 ft (300 m) above the heliport in case of non precision approach, unless the reported visibility or controlling RVR is above the specified minimum.
- 2.4.1.3 If, after passing the outer marker fix in case of precision approach, or after descending below 500 ft (150 m) above the heliport in case of non-precision approach, 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 observation

The procedures for making meteorological observations on board aircraft in flight and for recording and reporting them contained as in ICAO Annex 3, the PANS-ATM (Doc-4444) the appropriate Regional Supplementary Procedures (Doc 7030) and AIP shall be followed.

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 Enroute - 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 belts 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 may be unfastened but the seat belt must remain fastened.

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

2.4.5 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 para 2.3.8.1 or 2.3.8.2.

2.4.6 Safeguarding of cabin crew and passengers in pressurized helicopter in the event of loss of pressurization:

Cabin crew shall be safeguarded so as to ensure reasonable probability of their retaining consciousness during any emergency descent which may be necessary in the event of loss of pressurization and, in addition, they should have such means of protection as will enable them to administer first aid to passengers during stabilised flight following the emergency. Passengers should be safeguarded by such devices or operational procedures as will ensure reasonable probability of their surviving the effects of hypoxia in the event of loss of pressurization.

Note.- It is not envisaged that cabin crew will always be able to provide assistance to passengers during emergency descent procedures which may be required in the event of loss of pressurization.

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 DGCA or by the State which is responsible for the heliport when located outside the territory of India.

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

2.4.8 Helicopter operating procedures for noise abatement

An operator should ensure that take-off and landing procedures take into account the need to minimize the effect of helicopter noise.

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 DGCA and other applicable agencies, by the quickest 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 as specified in CAR Section 5, Series C Part I.
- 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

2.6 Duties of Flight Dispatcher/Operations Officer

- 2.6.1 A flight operations officer/ flight dispatcher in conjunction with a method of control and supervision of flight operations in accordance with 4.2.1.4 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 the flight, particularly in the context of emergency situations.

2.7 Carry on baggage

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

3. HELICOPTER PERFORMANCE OPERATING LIMITATIONS

3.1 General

- 3.1.1 Helicopters shall be operated in accordance with the provisions of the Flight Manual and in compliance with para 3 of this CAR.
- 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 a manner that gives appropriate consideration for achieving a safe forced landing.
- 3.1.3 Operations to and from elevated heliports and congested hostile environment shall be carried out only with performance class 1 helicopters.
- 3.1.4 Operations from elevated heliports or helidecks are not permitted with performance Class 3 helicopters.

3.2 Operating limitations

- 3.2.1 Helicopter shall meet design standards laid down by FAA of USA or EASA of Europe or CAA of UK or of any other authority acceptable to DGCA and performance standards contained in 3.2.2 to 3.2.7.
- 3.2.2 The level of performance shall be as specified in the Flight Manual duly approved by the State of design and shall be at least substantially equivalent to the overall level embodied in the provisions of this section.
- 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 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 provision of this CAR.

- 3.2.5 A flight shall not be commenced unless the performance information provided in the flight manual indicates that the provisions of 3.2.6 and 3.2.7 can be complied with, for the flight to be undertaken.
- 3.2.6 In applying the provisions 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 comprehensive and detailed 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.
- 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.
- 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 ICAO Annex 16 Volume 1, unless otherwise authorized, by the DGCA, in exceptional circumstances for a certain operating site where there is no noise disturbance problem.
- 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 3.2 shall apply.

3.2.7.2 En-route phase

3.2.7.2.1 *Operations in performance Class 1 and Class 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 3.2.7.4.1 for operation in performance Class 1, conditions of 3.2.7.4.2 for operations in Class 2 can be met, without flying below the appropriate minimum flight altitude at any point.

3.2.7.2.2 Operations in performance Class 3. The helicopter shall be able, with all power units 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 3.2.7.2.1. 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 3.2.7.2.2. After the DPBL, failure of an engine

may cause the helicopter to force land; therefore the condition 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

3.3.1 The operator shall have a system to obtain details of all obstacle data along the flight path and calculate the take-off, en-route and landing performance taking into account such obstacle data. For Indian airports the operator may obtain obstacle data for calculating the performance of the aircraft from the Airports Authority of India.

3.3.2 The operator shall take account of charting accuracy when considering such obstacle data.

3.4 Placards, listings, instrument markings or combinations thereof, containing those operating limitations prescribed by the DGCA / manufacturer for visual presentation, shall be displayed in the helicopter cockpit.

4. HELICOPTER INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

4.1 General

4.1.1 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 helicopter 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 DGCA.

4.1.2 A helicopter shall carry a certified true copy of the air operator Permit/ certificate specified in 2.2.1, operations specifications relevant to the helicopter type, issued in conjunction with the certificate.

4.1.3 The operator shall include in the operations manual a minimum equipment list (MEL), approved by DGCA 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 system become inoperative. When the helicopter is not registered in India, the operator shall ensure that the MEL does not affect the helicopter's compliance with the airworthiness requirements applicable in the State of Registry.

Note- MEL requirements are contented in CAR Section 2, Series 'B' Part I.

4.1.4 The operator shall provide operations staff and flight crew with 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 (ICAO-Doc 9683).

4.2 All helicopters on all flights

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

4.2.2 Helicopters shall be equipped with

- a) One or more first-aid kits as appropriate to the number of passengers the helicopter is authorized to carry in accordance with CAR Section 2, Series 'X' Part III;
- 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) 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 an age of two years;
 - 2) a seat belt for each seat and restraining belts for each berth;
 - 3) a safety harness for each flight crew seat. The safety harness for each pilot seat must incorporate a device which will automatically restrain the occupant's torso in the event of rapid deceleration.
 - 4) when dual controls are fitted, the safety harness for each pilot seat shall incorporate a device to prevent the upper body of an incapacitated occupant from interfering with the flight controls.

Note 1. Depending on the design, the lock on an inertia reel device may suffice for this purpose.

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

- 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;

Note.- Smoking is prohibited in domestic flights.

- 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;
- 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 2016 shall:

- a) meet the applicable minimum performance requirements; and
- b) not be of a type listed in Annex A, Group II of the *Montreal Protocol on Substances That Deplete the Ozone Layer*, 8th Edition, 2009

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 para 3 and any other information necessary for the operation of the helicopter within the

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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 emergency are marked on a helicopter, such areas shall be marked as prescribed in Appendix. 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 2m apart, intermediate lines 9cm x 3cm shall be inserted so that there is no more than 2 m between adjacent markings.

Note - Para 4.2.4 does not require all helicopters to have Break in areas.

4.3 Flight recorders

4.3.1 All helicopters shall be equipped with an approved FDR and CVR in accordance with CAR Section 2 Series 'I' Part V and Series 'I' Part VI.

4.4 Instruments and equipment for flights operated under VFR and IFR by day and night.

4.4.1 All helicopters when operated in accordance with VFR shall be equipped with:

- a) a magnetic compass;
- b) an accurate time piece indicating the time in hours, minutes and seconds;
- c) a sensitive pressure altimeter;
- d) an airspeed indicator; and
- e) main rotor rpm indicator;
- f) free air temperature indicator fitted with engines having provisions for carburetor heat control in case carburetor air temperature gauge is not installed;
- g) oil pressure indicator for each engine;
- h) oil quantity indicator for each tank. A dip stick or a sight gauge is acceptable;
- i) CHT indicator for each engine having rated BHP above 250 or an EGT gauge for each jet engine;
- j) oil temperature gauge for each turbine engine/piston engine having rated BHP above 250;
- k) fuel quantity indicator for each tank;
- l) an approved Emergency Locator Transmitter (ELT);
- m) Torque Indicator/RPM indicator, where applicable;

- n) Such additional equipment or instruments as may be prescribed by DGCA.
- 4.4.2 All helicopters which are operated as controlled flights shall be equipped in accordance with para 4.4.3.
- 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 in the flight crew compartment 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 instrument or equipment as may be prescribed by DGCA; and
 - m) if operated at night, the following lights shall be carried:
 - (i) the lights required by CAR, Section 9 Series C Part-I for aircraft in flight or operating on the movement area of a heliport;
 - (ii) two landing lights;
 - (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 One of the landing lights shall be trainable, at least in the vertical plane for all the helicopters.
- 4.4.3.2 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 All helicopters when operated at night shall be equipped with:

- a) all equipment specified in 4.4.2;
- b) position lights;
- c) anti-collision lights;
- d) two landing lights each fitted with single filament lamps or the light having dual filament lamp with separately energized filaments;
- e) illumination for all instruments and equipment that are essential for the
- f) safe operation of the helicopter that are used by the flight crew;
- g) an electric torch for each crew member station;
- h) lights in all passenger compartments and cockpit; and
- i) adequate source of electrical energy.

4.4.4.1 One of the landing lights should be trainable, at least in the vertical plane.

4.4.5 A helicopter inducted into the fleet after 31 December 2012 when operating in accordance with IFR and which has a maximum certificated take-off mass in excess of 3175 kg or a maximum passenger seating configuration of more than 9 shall be equipped with a ground proximity warning system which has a forward-looking terrain avoidance function. For helicopters already operating in the country, this requirement shall be applicable with effect from 1st January 2014.

4.5 All helicopters on flights over water

4.5.1 Means of floatation

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

- a) engaged in offshore operations, or other over water operations as prescribed by the DGCA; 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 DGCA when operating in performance Class 1; or

- 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 floatation 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 life jacket;
- b) life saving rafts in sufficient numbers/ capacity 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; and
- c) equipment for making the pyrotechnical distress signals;
- d) one set of survival radio equipment per raft, but not more than a total of two sets stowed as to facilitate their ready use in an emergency, which operate on VHF. The equipment should be portable, water resistant, self buoyant, not dependant for operations upon the helicopter power supply and capable of being operated away from the helicopter by unskilled persons.

4.5.2.2 Helicopters operating in performance Class 3 when operating beyond auto-rotational distance from land shall be equipped with 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.

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.

4.5.2.3 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.

4.5.2.4 Helicopters operating in Performance Class 3 when operating beyond distance specified in 4.5.2.2 shall be equipped as in 4.5.2.1.

- 4.5.2.5 In the case of helicopters operating in performance Class 2 or 3, when taking off or landing at a heliport where, 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.
- 4.5.2.6 Each life jacket 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.
- 4.5.2.7 Rafts which are not deployable by remote control and which have a mass of more than 40 kg should be equipped with some means of mechanically assisted deployment.

4.5.3 All helicopters on flights over designated sea areas

- 4.5.3.1 Helicopters, when operating over sea areas which have been designated by the as areas in 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 over flown.
- 4.5.3.2 For offshore operations, a survival suit shall be worn by all occupants when the sea temperature is less than 10°C or when the estimated rescue time exceeds the calculated survival time. When the elevation and strength of the sun results in a high temperature hazard on the flight deck, consideration should be given to alleviating the flight crew from this recommendation.

Note. - When establishing rescue time, the sea state and the ambient light conditions should be taken into consideration.

4.6 All helicopters on flights over designated land areas

Helicopters, when operated across land areas, which may be designated by AAI as areas in which search and rescue would be especially difficult, shall be equipped with at least one survival radio equipment stowed so as to facilitate its ready use in an emergency which operates on VHF. The equipment shall be portable, not dependent for operation upon the helicopter power supply and capable of being operated away from the helicopter by unskilled persons. Helicopter shall also be equipped with such signaling devices and life-saving equipment (including means of sustaining life), as may be appropriate to the area overblown.

4.7 Emergency Locator Transmitter (ELT)

- 4.7.1 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 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 4.7.7 and 4.7.8 shall operate in accordance with the relevant provisions of Annex 10, Volume III.

Note.— 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. 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

- 4.8.1 A helicopter intended to be operated at altitudes at which the atmospheric pressure is less than 700 hpa in personnel compartments, shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the oxygen supplies required in 2.3.8.1.
- 4.8.2 A helicopter intended to be operated at flight altitudes at which the atmospheric pressure is less than 700 atmospheric pressure is less than 700 hPa but which is provided with means of maintaining pressure greater than 700 hPa in personnel compartments shall be provided with oxygen storage and dispensing apparatus capable of storing and dispensing the oxygen supplies required in 2.3.8.2.
- 4.8.3 A helicopter intended to be operated at flight altitudes at which the atmospheric pressure is more than 376 hPa, which cannot descend safely within four minutes to a flight altitude at which the atmospheric pressure is equal to 620 hPa, shall be provided with automatically deployable oxygen equipment to satisfy the requirements of 2.3.8.2. The total number of oxygen dispensing units shall exceed the number of passenger and cabin crew seats by at least 10 per cent.
- 4.8.4 A helicopter intended to be operated at flight altitudes at which the atmospheric pressure is more than 376 hPa which cannot descend safely within four minutes to a flight altitude at which the atmospheric pressure is equal to 620 hPa, and for which the individual certificate of airworthiness was issued before 9 November 1998, should be provided with automatically deployable oxygen equipment to satisfy the requirements of 2.3.8.2. The total number of oxygen dispensing units should exceed the number of passenger and cabin crew seats by at least 10 per cent.

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

Helicopters when carrying passengers shall be equipped with operative weather radar or other significant weather detection equipment whenever such helicopters are being operated in areas where thunderstorms or other potentially hazardous weather conditions regarded as detectable may be expected to exist along the route either at night or under Instrument Meteorological Conditions.

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 noise certificate as required in CAR Section 2, Series F Part-III.

4.12 Helicopters carrying passengers - cabin crew seats.

4.12.1 All helicopters requiring carriage of cabin crew as per para 10.1 shall be equipped with a forward or rearward facing (within fifteen degrees of the longitudinal axis of the helicopter) seat, fitted with a safety harness for the use of each cabin crew member for carrying out 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 for emergency evacuation.

4.14 Helicopters required to be equipped with Pressure Altitude Reporting Transponder

Helicopters shall be fitted with Pressure Altitude Reporting Transponder in accordance with CAR Section 2 Series 'R' Part 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 system.

4.15 Microphones

All flight crew members required to be on flight deck duty shall communicate through boom or throat microphones below the transition level/ altitude.

4.16 Vibration health monitoring system

A helicopter with a maximum certificated take-off mass in excess of 3175 kg or a maximum passenger seating configuration of more than 9 and inducted into the fleet after 31st December 2012 shall be equipped with a vibration health monitoring system. For helicopters already operating in the country, this requirement shall be applicable with effect from 1st January 2014.

5. HELICOPTER COMMUNICATION AND NAVIGATION EQUIPMENT

5.1 Communication Equipment

5.1.1 All helicopters shall be fitted with radio communication equipment capable of;

- a) conducting two way communication for heliport control purposes;
- b) receiving meteorological information at any time during flight,
- c) conducting two way communication at any time during flight with at least one 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 flights in defined portions of airspace or on routes where an RCP type has been prescribed, 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 type(s); and
- b) be authorized by the State of the Operator for operations in such airspace

Note.—Information on RCP and associated procedures, and guidance concerning the approval process, are contained in the Manual on Required Communications Performance (RCP) (Doc 9869). This document also contains references to other documents produced by States and international bodies concerning communication systems and RCP.

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 navigation for flights under visual flight rules is accomplished by visual reference to landmarks.

5.2.2 For operations where a navigation specification performance-based navigation 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) be authorized by the DGCA for such operations

Note.—Information on performance-based navigation, and guidance concerning the implementation and operational approval process, are contained in the Performance-based Navigation Manual (RNP) (ICAO-Doc 9613). This document also contains a comprehensive list of references to other documents produced by States and international bodies concerning navigation systems.

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

5.2.4 On flights in which it is intended to land in Instrument Meteorological Condition (IMC) an helicopter shall be provided with a radio equipment capable of receiving signals providing guidance to a point from which a visual landing can be effected. This equipment should 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 Installation.

The equipment installation shall be such that the failure of any single unit required for either communication or navigation purposes or both will not result in the failure of another unit required for communication or navigation purpose.

6. HELICOPTER MAINTENANCE

Maintenance requirements are *contained in CAR-145 and CAR-M.*

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 crew 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.

The flight crew shall hold valid license issued or rendered valid by DGCA, authorizing operation of the type of radio transmitting equipment to be used.

7.2 Flight Crew member emergency duties

An operator shall, for each type of helicopter, assign to all flight crew members the necessary functions they are to perform in an emergency including 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 lifesaving equipment required to be carried, and drills in the emergency evacuation of the helicopter.

7.3 Flight crew member training programmes

7.3.1 An operator shall establish and maintain a ground and flight training programme approved by the DGCA 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 DGCA;

- 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 power plant, transmission, rotor, airframe or systems malfunctions, fire or other abnormalities;
- d) include training in knowledge and skills related to visual and instrument flight procedures for the intended area of operation, human performance and threat and error management and in the transport of dangerous goods and, where applicable, procedures specific to the environment in which the helicopter is to be operated;
- 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) shall include 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 DGCA 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 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 DGCA, be given in flight simulation training devices approved by DGCA 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. Provisions for training in the transport of dangerous goods are contained in Aircraft (Carriage of Dangerous Goods) Rules, 2003.

Note 5. Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the Human Factors Training Manual (ICAO-Doc 9683).

Note 6. 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, Volume II. Obstacle clearance criteria and procedures used in certain States may differ from PANS-OPS (Doc 8168) and knowledge of these differences is important for safety reasons.

Note 7. Guidance material to design flight crew training programmes can be found in the Preparation of an Operations Manual (Doc 9376).

Note 8. 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) document.

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 DGCA, flight simulation training devices approved by the DGCA for that purpose; or
- b) the completion within the appropriate period of the proficiency check required by 7.4.4 in that type of helicopter.

7.4 Qualifications

7.4.1 Recent experience - pilot-in-command and co-pilot

7.4.1.1 An 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.

7.4.1.2 A pilot-in-command or a co-pilot flying several variants of the same type of helicopter with similar characteristics in terms of operating procedures, systems and handling shall follow the requirements laid down in CAR Section 2, Series B part-I.

7.4.2 Pilot-in-command operational qualification

7.4.2.1 An 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 instructor/examiner, 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;
 - 5) the navigational facilities and procedure, associated with the route along 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, in the preceding 12 months, a landing at a representative heliport, accompanied by a qualified Pilot.
- 7.4.2.4 The operator shall maintain a record, up to the satisfaction of DGCA, of the qualification of the pilot and of the manner in which such qualification has been achieved.
- 7.4.2.5 An operator shall not continue to utilize a pilot as a pilot-in-command on an operation 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 or an examiner pilot, or as an observer on the flight deck. 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 route, that pilot must re-qualify in accordance with 7.4.2.2 and 7.4.2.3.

7.4.3 Pilot proficiency checks

- 7.4.3.1 An 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 a variant of type of helicopter. In addition where the operation may be conducted under instrument flight rules, an operator shall ensure that the pilot's competence to comply with such rules is demonstrated to either a DGCA approved instructor or examiner or to a DGCA Flight Inspector. Such checks shall be performed twice within any period of one year. Any two

such checks which are similar and which occur within a period of four consecutive months shall not alone satisfy this requirement.

Note.- Flight simulation training devices approved by DGCA may be used for those parts of the checks for which they are specifically approved.

7.4.3.2 When an operator schedules flight crew on several variants of the same type of helicopter or different types of helicopter with similar characteristics in terms of operating procedures, systems and handling, DGCA 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 licence 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

The flight time, flight duty periods and rest periods shall be followed as stipulated in CAR Section 7 Series 'J' Part II.

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 be approved that flight operations officer/flight dispatcher shall be approved in accordance with the provisions of CAR Section 7, Series 'M' Part II.

8.2 A flight operations officer/flight dispatcher shall not be assigned to duty unless that person has:

- a) satisfactorily completed an 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;
- 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 heliports 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;
 - 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.

8.3 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.

8.4 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.

9. Manuals, Logs and Records

9.1 Flight Manual - Each aircraft shall have a Flight Manual or equivalent approved document on board, which shall be kept up to date.

9.2 Operator's Continuing Airworthiness Management Exposition(CAME)

Requirements for CAME are given in CAR-M

9.3 Maintenance programme

Requirements for Continuing Airworthiness Management Organization (CAMO) are given in CAR-M.

9.4 Journey log book

9.4.1 The helicopter journey log book should contain the following minimum 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 nonscheduled).
- 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.

Note.- The details of contents of journey log book are given in CAR Section 2, Series 'X' Part VI.

9.5 Records of emergency and survival equipment

Operators shall at all times have available for immediate communication to rescue co-ordination centers, lists containing information on the emergency and

survival equipment carried on board their helicopters. 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

An 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 by DGCA.

10. Cabin Crew

10.1 Assignment of emergency duties

An operator shall provide adequate number of Cabin crew in accordance with rule 38(B) of the Aircraft Rules 1937 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 do not preclude the pilot in command from directing the fastening of the seat belt only, at time other than during takeoff and landing.

10.3 Training

An operator shall establish and maintain a training programme, approved by the DGCA for cabin crew in accordance with CAR Section 7 Series 'M' part 'I', to be completed by all persons before being assigned as a cabin crew member.

10.4 Flight time, flight duty period and rest period

The operator shall comply with the flight time, flight duty period and rest period requirements as given in CAR Section 7 Series 'J' Part I.

11. Security

11.1 Helicopter search procedures checklist

An 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.

11.2 Training programme

11.2.1 Operator shall establish and maintain a training programme which enables crew members to act in the most appropriate manner to minimize the consequences of acts of unlawful interference.

11.2.2 An 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.

12. Reporting acts of unlawful interference

Following an act of unlawful interference, the pilot-in-command shall submit without delay, a report following an act to BCAS and DGCA, New Delhi.

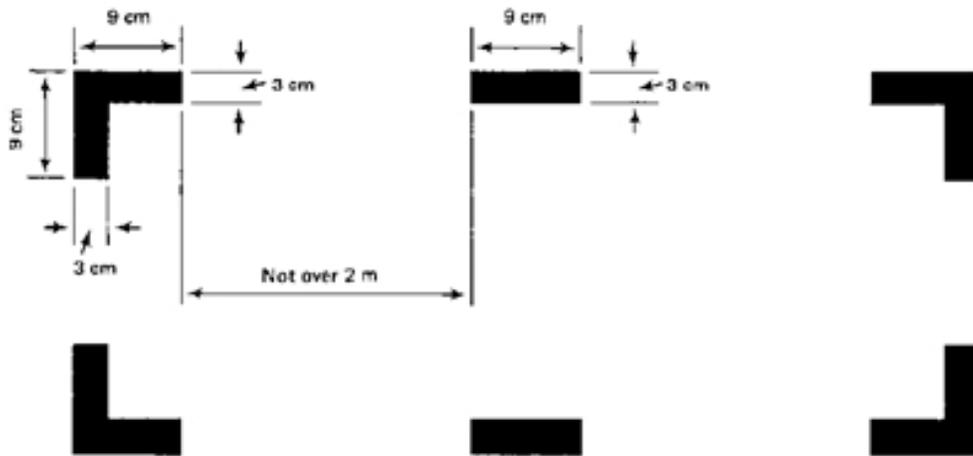
13. Compliance with the CAR

The operator shall ensure that all concerned personnel required to implement the provisions of this CAR are given adequate briefing about the content of this CAR and the method of compliance. The policies and procedures laid down by the operator shall also contain this aspect.

**(E K Bharat Bhushan)
Director General of Civil Aviation**

APPENDIX- I

MARKING OF BREAK-IN POINTS



APPENDIX II

ACCEPTABLE LEVEL OF SAFETY

1. Introduction

- 1.1 The introduction of the concept of acceptable level of safety responds to the need to complement the prevailing approach to the management of safety based upon regulatory compliance, with a performance based approach that aims for continuous improvement to the overall level of safety.
- 1.2 Acceptable level of safety expresses the safety goals of an oversight authority, an operator, or a services provider. From the perspective of the relationship between oversight authorities and operators/services providers, it provides the minimum safety objective(s) acceptable to the oversight authority to be achieved by the operators/services providers while conducting their core business functions. It is a reference against which the oversight authority can measure safety performance.
- 1.3 Establishing acceptable level(s) of safety for the safety programme does not replace legal, regulatory, or other established requirements, nor does it relieve States from their obligations regarding the Convention on International Civil Aviation and its related provisions.
- 1.4 Establishing acceptable level(s) of safety for the safety management system does not relieve operators/services providers from their obligations under relevant national regulations and the Convention on International Civil Aviation.

2. Scope

- 2.1 Within each State, different acceptable levels of safety may be established between the oversight authority and individual operators/services providers.
- 2.2 Each agreed established level of safety should be commensurate with the complexity of individual operator/service providers operational contexts, and the level to which safety deficiencies can be tolerated and realistically addressed.

3. Implementation

- 3.1 The concept of acceptable level of safety is expressed in terms of safety performance indicators and safety performance targets, and implemented through safety requirements.
- 3.2 The relationship between acceptable level of safety, safety performance indicators, safety performance targets and safety requirements is as follows:

acceptable level of safety is the overarching concept; safety performance indicators are the measures or metrics to determine if the acceptable level of safety has been achieved, safety performance targets are the quantified objectives pertinent to the acceptable level of safety, and safety requirements are the tools or means required to achieve the safety performance targets.

- 3.3 The safety performance indicators of an acceptable level of safety should be uncomplicated and linked to major components of a State safety programme, or an operator/services provider safety management system (SMS). They are generally expressed in numerical terms.
- 3.4 The safety performance targets of an acceptable level of safety should be determined after weighing what is desirable and what is realistic for individual operator/services providers. Safety performance targets should be measurable, acceptable to the parties involved, and consistent with the acceptable level of safety.
- 3.5 The safety requirements to achieve the safety performance targets of an acceptable level of safety should be expressed in terms of operational procedures, technology and systems, programmes, contingency arrangements and so forth, to which measures of reliability, availability and/or accuracy may be added.
- 3.6 An acceptable level of safety should be expressed by several safety performance indicators and translated into several safety performance targets, rather than by single ones.

MINIMUM PERFORMANCE REQUIREMENTS FOR FIRE EXTINGUISHERS

(a) Hand fire extinguishers. For hand fire extinguishers the following apply:

(1) Each hand fire extinguisher must be approved.

(2) The kinds and quantities of each extinguishing agent used must be appropriate to the kinds of fires likely to occur where that agent is used.

(3) Each extinguisher for use in a personnel compartment must be designed to minimize the hazard of toxic gas concentrations.

(b) Built-in fire extinguishers. If a built-in fire extinguishing system is required—

(1) The capacity of each system, in relation to the volume of the compartment where used and the ventilation rate, must be adequate for any fire likely to occur in that compartment.

(2) Each system must be installed so that—

(i) No extinguishing agent likely to enter personnel compartments will be present in a quantity that is hazardous to the occupants; and

(ii) No discharge of the extinguisher can cause structural damage.