



GOVERNMENT OF INDIA  
OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION  
TECHNICAL CENTRE, OPP SAFDURJUNG AIRPORT, NEW DELHI

CIVIL AVIATION REQUIREMENTS  
SECTION 2 – AIRWORTHINESS  
SERIES 'O', PART V  
ISSUE II, 27<sup>TH</sup> JULY 1999

EFFECTIVE: FORTHWITH

Subject: OPERATION OF GENERAL AVIATION - HELICOPTERS

## INTRODUCTION

This part of the CAR lays down the minimum operational, instruments and equipment requirements for Indian registered helicopters engaged in general aviation operations.

This CAR is issued under the provision of Rule 29C of the Aircraft Rules 1937 and is in conformity with ICAO Annex 6 Part III.

These requirements are applicable for helicopter operation other than a commercial air transport operation or an aerial work operation.

## 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.

**Alternate heliport.** A heliport specified in the flight plan to which a flight may proceed when it becomes inadvisable to land at the heliport of intended landing.

*Note.- An alternate heliport may be the heliport of departure.*

**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 350 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 200 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 200 m but not less than 50 m.

Category IIIC (CAT IIIC) operation. A precision instrument approach and landing with no decision height and no runway visual range limitations.

*Note - Where decision height (DH) and runway visual range (RVR) fall into different categories of operation, the instrument approach and landing operation would be conducted in accordance with the requirements of the most demanding category (e.g. an operation with a DH in the range of CAT IIIA but with an RVR in the range of CAT IIIB would be considered a CAT IIIB operation or an operation with a DH in the range of CAT II but with an RVR in the range of CAT I would be considered a CAT II operation).*

**Approach and landing phase - helicopters.** That part of the flight from 1000 ft (300m) 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.

**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.

**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.*

**Defined point after take-off.** 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.

**Defined point before landing.** 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 performance class 2 helicopters 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.

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

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

**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.

**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.

**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.

**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 4 Series 'E' Part I are acceptable.*

**Landing decision point (LDP).** The point used in determining landing performance from which, a power-unit 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.

**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 organisation's procedures manual (Maintenance system manual/ Maintenance Organisation Exposition).** A document 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 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.*

**Minimum equipment list (MEL).** A list approved by DGCA 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.

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

*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.*

**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.- 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 heliport elevation or the threshold elevation if that is more than 2 m (7 ft) below the heliport elevation. An obstacle clearance height for a circling approach is referenced to the heliport elevation.*

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

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

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

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

**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 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.

**RNP type.** A containment value expressed as a distance in nautical miles from the intended position within which flights would be for at least 95 per cent of the total flying time.

Example.— RNP 4 represents a navigation accuracy of plus or minus 7.4 km (4 NM) on a 95 per cent containment basis.

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

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

**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.

**Synthetic flight trainer.** 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.

**Take-off and initial climb phase.** That part of the flight from the start of take-off to 1000 ft (300 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 power-unit 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 4 Series 'E' Part I.*

**VToss.** The minimum speed at which climb shall be achieved with the critical power-unit inoperative, the remaining power-units 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 Pilot-in-command shall comply with the laws, regulations and procedures of States in which operations are conducted.

- 1.1.2 The pilot-in-command shall be responsible for the operation and safety of helicopter and for the safety of all persons on board, during flight time.
- 1.1.3 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 Airworthiness/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.
- 1.1.4 The pilot-in-command shall be responsible for notifying the nearest appropriate authority 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.
- 1.1.5 The pilot-in-command should have available on board the helicopter essential information concerning the search and rescue services in the areas over which it is intended the helicopter will be flown.
- 1.2 **Dangerous goods.** The pilot-in-command shall adhere to the provisions for carriage of dangerous goods as contained in Aircraft (Carriage of Dangerous Goods) Rules, 2003 and CAR Section 3 Series 'L' Part II.
- 1.3 **Use of psychoactive substances** The pilot-in-command shall adhere to the provisions concerning the use of psychoactive substances as contained in Rule 24 of the Aircraft Rules, 1937 and CAR Section 4 Series 'E' Part 1.

## **2. FLIGHT OPERATIONS**

### **2.1 Adequacy of Operating facilities**

The pilot-in-command shall not commence a flight unless it has been ascertained by every reasonable means available that the ground and/or water areas and facilities available and directly required for such flight and for the safe operation of the helicopter are adequate including communication facilities and navigation aids.

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

## **2.2 Heliport operating minima**

The pilot-in-command shall not operate to or from a heliport using operating minima lower than those which may be established for that heliport by DGCA.

## **2.3 Briefing**

2.3.1 The pilot-in-command shall ensure that crew members and passengers are made familiar, by means of an oral briefing or by other means, with the location and the use of:

- a) seat belts;
- b) emergency exits;
- c) life jackets;
- d) oxygen dispensing equipment; and
- e) other emergency equipment provided for individual use, including passenger emergency briefing cards.

2.3.2 The pilot-in-command shall ensure that all persons on board are aware of the location and general manner of use of the principal emergency equipment carried for collective use.

## **2.4 Helicopter airworthiness and safety precautions**

A flight shall not be commenced until the pilot-in-command is satisfied that:

- a) the helicopter is airworthy, duly registered and that appropriate certificates with respect thereto are aboard the helicopter;
- b) the instruments and equipment including the emergency equipment installed in the helicopter are appropriate and serviceable, taking into account the expected flight conditions;
- c) any necessary maintenance has been performed in accordance with para 6;
- d) the mass of the helicopter and center of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;
- e) any load carried is properly distributed and safely secured;
- f) it carries sufficient fuel and oil for the intended flight in accordance with this part of the CAR;
- g) the engines is developing the rated power;
- h) the various documents required for the flight are valid and are on board;
- i) the helicopter has current and valid Certificate of Flight Release;
- j) there is no physical damage apparent during his walk around inspection; and
- k) the helicopter operating limitations, contained in the flight manual, or its equivalent, will not be exceeded.

*Note.- As regard to item 2.4 (g), the pilot shall ensure before take-off that engine(s) is/are developing correct power.*

As a token of the compliance of the above, the pilot-in-command should sign these certificates either on tech-log or another appropriate document.

## **2.5 Weather reports and forecast**

Before commencing a flight the pilot-in-command shall be familiar with all available meteorological information appropriate to the intended flight. Preparation for a flight away from the vicinity of the place of departure, and for every flight under the instrument flight rules, shall include:

- 1) a study of, available current weather reports and forecasts; and
- 2) the planning of an alternative course of action to provide for the eventuality that the flight cannot be completed as planned, because of weather conditions.

## **2.6 Limitations imposed by weather conditions**

### **2.6.1 Flight in accordance with the visual flight rules**

A flight, except one of purely local character in visual meteorological conditions, to be conducted in accordance with the visual flight rules shall not be commenced unless available 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.

### **2.6.2 Flight in accordance with the instrument flight rules**

2.6.2.1 When an alternate is required. A flight to be conducted in accordance with the instrument flight rules shall not be commenced unless the available information indicates that conditions, at the heliport of intended landing and at least one alternate heliport will, at the estimated time of arrival, be at or above the heliport operating minima.

2.6.2.2 When no alternate is required. A flight to be conducted in accordance with the instrument flight rules to a heliport when no alternate heliport is required shall not be commenced unless available current meteorological information indicates that the following meteorological conditions will exist from two hours before to two hours after the estimated time of arrival: or from the actual time of departure to two hours after the estimated time of arrival, whichever is the shorter period:

- a) a cloud base of at least 400 ft (120 m) above the minimum associated with the instrument approach procedure; and
- b) visibility of at least 1.5 km more than the minimum associated with the procedure.

*Note - These should be considered as minimum values where a reliable and continuous meteorological watch is maintained. When only an "area" type forecast is available these values should be increased accordingly.*

### **2.6.3 Helicopter operating minima**

2.6.3.1 A flight shall not be continued towards the heliport of intended landing unless the latest available meteorological information indicates that conditions at that heliport, or at least one alternate heliport, will, at the estimated time of arrival, be at or above the specified heliport operating minima.

2.6.3.2 An instrument approach shall not be continued beyond the outer marker fix in case of precision approach, or below 300 m (1 000 ft) above the heliport in case of non precision approach, unless the reported visibility or controlling RVR is above the specified minimum.

2.6.3.3 If, after passing the outer marker fix in case of precision approach, or after descending below 300 m (1 000 ft) 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 beyond a point at which the limits of the heliport operating minima would be infringed.

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

## **2.7 Alternate heliports**

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

- a) the weather conditions in 2.6.2.2 prevail, or
- b) 1. the heliport of intended landing is isolated and no suitable alternate is available; and  
2. an instrument approach procedure is prescribed for the isolated heliport of intended landing; and  
3. point of no return (PNR) is determined in case of an off-shore destination.

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

- a) the off-shore alternates shall be used only after passing 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 alternate;

- 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.*

2.7.3 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 exceptions and should not include payload enhancement in adverse weather conditions.

## 2.8 Fuel and oil supply

2.8.1 *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.

2.8.2 *Visual flight rules (VFR) operations.* The fuel and oil carried in order to comply with 2.8.1 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 percent 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 potential contingencies.

2.8.3 *Instrument flight rules (IFR) operations.* The fuel and oil carried in order to comply with 2.8.1 shall, in the case of IFR operations, be at least the amount sufficient to allow the helicopter:

2.8.3.1 When no alternate is required, in terms of 2.6.2.2, to fly to the heliport to which the flight is planned, and thereafter:

- a) to fly 30 minutes at holding speed at 1500 ft (450 m) 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 potential contingencies.

2.8.3.2 When an alternate is required, in terms of 2.6.2.1, 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 potential contingencies.

2.8.3.3 When no suitable alternate is available, in terms of 2.7.1 b), to fly to the heliport to which the flight is planned and thereafter for a period of two hours at holding speed.

2.8.4 In computing the fuel and oil required in 2.8.1, 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 for loss of pressurization, where applicable, or failure of one power-unit 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 2.8 precludes amendment of a flight plan in flight in order to replan the flight to another heliport, provided that the requirements of para 2.8 can be complied with from the point where the flight has been replanned.*

## **2.9 Oxygen supply**

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

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

2.9.2 A flight to be operated with a pressurized helicopter shall not be commenced unless a sufficient quantity of stored breathing oxygen is carried to supply all the crew members and a proportion of the 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.

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

Absolute pressure	Meters	Feet
700 hPa	3 000	10 000
620 hPa	4 000	13 000

### **2.10 Use of oxygen**

All flight crew members, when engaged in performing duties essential to the safe operation of a helicopter in flight, shall use breathing oxygen continuously whenever the circumstances prevail for which its supply has been required in 2.9.1 or 2.9.2.

### **2.11 In-flight emergency instruction**

In an emergency during flight, the pilot-in-command shall ensure that all persons on board are instructed in such emergency action as may be appropriate to the circumstances.

### **2.12 Weather reporting by pilots**

When weather conditions likely to affect the safety of other aircraft are encountered, they should be reported as soon as possible.

### **2.13 Hazardous flight conditions**

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

### **2.14 Fitness of flight crew members**

The pilot-in-command shall be responsible for ensuring that a flight:

- a) will not be commenced if any flight crew member is incapacitated from performing duties by any cause such as injury, sickness, fatigue, the effects of alcohol or drugs; and
- b) will not be continued beyond the nearest suitable heliport when flight crew members' capacity to perform functions is significantly reduced by impairment of faculties from causes such as fatigue, sickness, lack of oxygen.

## **2.15 Flight crew members at duty stations**

### **2.15.1 Take-off and landing**

All flight crew members required to be on flight deck duty shall be at their stations.

### **2.15.2 En route**

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

### **2.15.3 Seat belts**

All flight crew members shall keep their seat belt fastened when at their stations.

### **2.15.4 Safety harness**

When safety harnesses are provided, any flight crew member occupying a pilot's seat should keep the safety harness fastened during the take-off and landing phases. All other flight crew members should keep their safety harness fastened during the take-off and landing phases unless 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 strap(s) and a seat belt which may be used independently.*

## **2.16 Instrument flight procedures**

2.16.1 DGCA promulgates instrument approach procedures designed in accordance with the classification of instrument approach and landing operations to serve each instrument runway or heliport utilized for instrument flight operations.

2.16.2 All helicopters operated in accordance with instrument flight rules shall comply with the instrument flight procedures approved by the state in which the aerodrome is located.

## **2.17 Instruction - General**

The rotor of a helicopter shall not be turned under power without a qualified pilot at the controls.

## **2.18 Refueling with passengers on board or rotors turning**

2.18.1 A helicopter should not be refueled when passengers are embarking, on board or disembarking or when the rotor is turning unless it is attended by the pilot-in-command or other qualified personnel ready to initiate and direct an

evacuation of the helicopter by the most practical and expeditious means available.

2.18.2 When refueling with passengers embarking, on board or disembarking, two-way communications should be maintained by helicopter intercommunications system or other suitable means between the ground crew, supervising the refueling and the pilot-in-command or other qualified personnel required by 2.18.1.

## **2.19 Over-water flights**

All helicopters on flights over water in accordance with 4.3.1 shall be certificated for ditching. Sea state shall be an integral part of ditching information.

## **3. HELICOPTER PERFORMANCE OPERATING LIMITATIONS**

3.1 A helicopter shall be operated:

- a) in compliance with the terms of its airworthiness certificate or equivalent approved document,
- b) within the operating limitations prescribed by the DGCA/manufacturer; and
- c) within the mass limitations imposed by compliance with the applicable noise certification Standards in ICAO Annex 16, Volume 1, unless otherwise authorized, in exceptional circumstances for a certain heliport where there is no noise disturbance problem, by the competent authority of the State in which the heliport is situated.

3.2 Placards, listing, instrument markings, or combinations thereof, containing those operating limitations prescribed by the manufacturer for visual presentation, shall be displayed in the helicopter.

3.3 Only performance Class I helicopters shall be permitted to operate from elevated heliports in congested areas.

3.4 Performance Class 3 helicopters shall not be permitted to operate from elevated heliports or helidecks.

## **4. Helicopters Instruments, Equipment and Flight Documents**

### **4.1 All helicopters on all flights**

#### **4.1.1 General**

In addition to the minimum equipment necessary for the issuance of a certificate of airworthiness, the instruments, equipment and flight documents prescribed in the following paragraphs shall be installed or carried, as appropriate, in helicopters according to the helicopter used and to the circumstances under which the flight is to be conducted.

#### 4.1.2 Instruments

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 maneuver, and observe the operating limitations of the helicopter in the expected operating conditions.

#### 4.1.3 Equipment

4.1.3.1 All helicopters on all flights shall be equipped with:

- a) an accessible first-aid kit,
- b) portable fire extinguishers of a type which, when discharged, will not cause dangerous contamination of the air within the helicopter. At least one shall be located in:
  - 1) the pilot's compartment; and
  - 2) each passenger compartment that is separate from the pilot's compartment and not readily accessible to the pilot or co-pilot;
- c)
  - 1) a seat or berth for each person over an age of two years; and
  - 2) a seat belt for each seat and restraining belts for each berth;
- d) the following manuals, charts and information:
  - 1) the flight manual or other documents or information concerning any operating limitations prescribed for the helicopter by the DGCA/Manufacturer, required for the application of para 3;
  - 2) current and suitable charts for the route of the proposed flight and all routes along which it is reasonable to expect that the flight may be diverted;
  - 3) procedures, as prescribed in CAR Section 4 Series 'E' Part I, for pilot-in-command of intercepted aircraft; and
  - 4) a list of visual signals for use by intercepting and intercepted aircraft, as contained in CAR Section 4 Series 'E' Part I, and
- e) spare electrical fuses of appropriate ratings for replacement of those accessible in flight.

4.1.3.2 All helicopters on all flights should be equipped with the ground-air signal codes for search and rescue purposes.

4.1.3.3 All helicopters on all flights should be equipped with a safety harness for each flight crew member seat.

*Note.- Safety harness includes shoulder strap(s) and a seat belt which may be used independently.*

#### 4.1.4 Marking of break-in points

4.1.4.1 If areas of the fuselage suitable for break-in by rescue crews in an emergency are marked on a helicopter, such areas shall be marked as shown in Appendix 1. The color of the markings shall be red or yellow, and if necessary they shall be outlined in white to contrast with the background.

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

*Note - para 4.1.4 does not require all helicopters to have break in areas.*

## **4.2 All helicopters operated as VFR flights**

4.2.1 All helicopters when operated as VFR flights shall be equipped with:

- a) a magnetic compass;
- b) an accurate timepiece indicating the time in hours, minutes and seconds;
- c) a sensitive pressure altimeter;
- d) an airspeed indicator;
- 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;
- j) Oil temperature gauge for each engine having rated BHP above 250;
- k) fuel quantity indicator for each tank;
- l) Torque indicator, where applicable; and
- m) such additional instruments or equipment as may be prescribed by DGCA.

4.2.2 VFR flights which are operated as controlled flights shall be equipped in accordance with 4.6.

## **4.3 All helicopters on flights over water**

4.3.1 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) flying over water at a distance from land corresponding to more than 10 minutes at normal cruise speed in the case of performance Class 1 or 2 helicopters; or
- b) flying over water beyond autorotational or safe forced landing distance from land in the case of performance Class 3 helicopters.

### **4.3.2 Emergency equipment**

4.3.2.1 Performance Class 1 and 2 helicopters operating in accordance with the provisions of 4.3.1, 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;
- b) life-saving rafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency, provided with such life-saving equipment including means of sustaining life as is appropriate to the flight to be undertaken; and
- c) equipment for making the pyrotechnical distress signals.

4.3.2.2 Intentionally left blank.

4.3.2.3 Performance Class 3 helicopters when operating over water beyond autorotational distance from land shall be equipped as in 4.3.2.1.

4.3.2.4 In the case of performance Class 2 and Class 3 helicopters, 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, atleast the equipment required in 4.3.2.1 a) shall be carried.

4.3.2.5 Each life jacket and equivalent individual floatation device, when carried in accordance with this 4.3, shall be equipped with a means of electric illumination for the purpose of facilitating the location of persons.

4.3.2.6 Intentionally left blank.

4.3.2.7 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.

4.3.2.8 Intentionally left blank.

#### **4.4 All helicopters on flights over designated land areas**

Helicopters, when operated across land areas which have been designated by Airports Authority of India as areas in which search and rescue would be especially difficult, shall be equipped with such signaling devices and life-saving equipment (including means of sustaining life) as may be appropriate to the area over flown.

#### **4.5 All helicopters on high altitude flights**

##### **4.5.1 Unpressurized helicopters**

Unpressurized helicopters intended to be operated at high altitudes shall carry equipment for storing and dispensing the oxygen supplies required in 2.9.1.

**4.5.2** Pressurised helicopters intended to be operated at high altitudes should carry emergency oxygen storage and dispensing equipment capable of storing and dispensing the oxygen supplies required in 2.9.2.

#### 4.6 All helicopters operated in accordance with the instrument flight rules

All helicopters, when operated in accordance with the instrument flight rules 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) a sensitive pressure altimeter;

*Note.- Due to the long history of misreading, the use of drum-pointer altimeters is not allowed.*

- d) an airspeed indicating system with a means of preventing malfunctioning due to either condensation or icing;
- e) a slip indicator;
- f) two attitude indicators (artificial horizon), one of which may be replaced by a turn indicator;
- g) a heading indicator (directional gyroscope):

*Note.- The requirements of e), f) and g) above, may be met by combinations of instruments or by integrated flight director systems provided that the safeguards against total failure, inherent in the separate instruments, are retained.*

- h) means of indicating whether the supply of power to the gyroscopic instruments is adequate;
- i) a means of indicating in the flight crew compartment the outside air temperature;
- j) a rate-of-climb and descent indicator; and
- k) such additional instruments or equipment as may be prescribed by DGCA.

#### 4.7 All helicopters when operated at night

4.7.1 All helicopters, when operated at night, shall be equipped with:

- a) all the equipment specified in 4.6;
- b) position light;
- c) anti-collision light;
- d) a landing light;
- e) illumination for all flight instruments and equipment that are essential for the safe operation of the helicopter;
- f) lights in all passenger compartments; and
- g) an electric torch for each crew member station.

4.7.2 The landing light should be trainable, at least in the vertical plane.

4.8 All helicopters shall carry a document in English language attesting noise certification.

#### **4.9 Flight recorders**

All helicopter shall be fitted with flight data recorder and a cockpit voice recorder in accordance with CAR Section 2, Series 'I' Part V and VI, respectively.

#### **4.10 Emergency locator transmitter (ELT)**

4.10.1 Except as provided for in 4.10.2, until 1 January 2005 all Performance Class 1 and 2 helicopters operating on flights over water as described in 4.3.1 a) and Performance Class 3 helicopters operating as described in 4.3.1 b) shall be equipped with at least one ELT(S) per raft carried but not more than a total of two ELTs are required.

4.10.2 Performance Class 1 and 2 helicopters for which the individual certificate of airworthiness is first issued after 1 January 2002, operating on flights over water as described in 4.3.1 a) and Performance Class 3 helicopters for which the individual certificate of airworthiness is first issued after 1 January 2002, operating as described in 4.3.1 b) shall be equipped with at least one automatic ELT and one ELT(S) in a raft.

4.10.3 From 1 January 2005, all Performance Class 1 and 2 helicopters operating on flights over water as described in 4.3.1 a) and Performance Class 3 helicopters operating as described in 4.3.1 b) shall be equipped with at least one automatic ELT and one ELT(S) in a raft.

4.10.4 Except as provided for in 4.10.5, until 1 January 2005 helicopters on flights over designated land areas as described in 4.4. shall be equipped with at least one ELT.

4.10.5 Helicopters for which the individual certificate of airworthiness is first issued after 1 January 2002, on flights over designated land areas as described in 4.4 shall be equipped with at least one automatic ELT.

4.10.6 From 1 January 2005, helicopters on flights over designated land areas as described in 4.4 shall be equipped with at least one automatic ELT.

4.10.7 All helicopters should carry an automatic ELT.

4.10.8 ELT equipment carried to satisfy the requirements of 4.10.1, 4.10.2, 4.10.3, 4.10.4, 4.10.5, 4.10.6 and 4.10.7 shall operate in accordance with the relevant provisions of Annex 10, Volume III.

**4.11 Helicopter required to be equipped with pressure altitude reporting transponder.**

4.11.1 All helicopters shall be equipped with a pressure altitude reporting transponder in accordance with CAR Section 2 Series 'R' Part IV.

**4.12 Microphones**

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

**5. HELICOPTER COMMUNICATION AND NAVIGATION EQUIPMENT**

**5.1 Communication equipment**

Radio equipment shall be installed and operated with a licence issued under the Indian Telegraph Act of 1885 and the rules made there under as amended from time to time and in a manner approved by DGCA.

5.1.1 A helicopter to be operated in accordance with the instrument flight rules or at night shall be provided with radio communication equipment. Such equipment shall be capable of conducting two-way communication with those aeronautical stations and on those frequencies prescribed by the appropriate authority.

5.1.2 When compliance with 5.1.1 requires that more than one communication equipment unit be provided, each shall be independent of the other or others to the extent that a failure in any one will not result in failure of any other.

5.1.3 A helicopter to be operated in accordance with the visual flight rules, but as a controlled night, shall, unless exempted by DGCA, be provided with radio communication equipment capable of conducting two-way communication at any time during flight with such aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

5.1.4 A helicopter to be operated on a flight to which the provisions of 4.3 or 4.4 apply shall, unless exempted by DGCA, be provided with radio communication equipment capable of conducting two-way communication at any time during flight with such aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

5.1.5 The radio communication equipment required in accordance with 5.1.1 to 5.1.4 should provide for communication on the aeronautical emergency frequency 121.5 MHz.

5.1.6 All helicopters fitted with HF communication equipment shall be capable of operating on SSB Mode.

## **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 flight plan;
- b) in accordance with prescribed RNP types; and
- c) in accordance with the requirements of air traffic services;

except when, if not so precluded by the appropriate authority, navigation for flights under the visual flight rules is accomplished by visual reference to landmarks. For international general aviation, landmarks shall be located at least every 60 NM (110 km).

5.2.2 For flights in defined portions of airspace or on routes where an RNP type 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 RNP type(s); and
- b) be authorized by the DGCA for operations in such airspace.

*Note - Information on RNP and associated procedures, and guidance concerning the approval process, are contained in the Manual on Required Navigation Performance (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 and RNP.*

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

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

## **6. HELICOPTER MAINTENANCE**

### **6.1 Responsibilities**

- 6.1.1 The owner of a helicopter, or in the case where it is leased, the lessee shall ensure that:
- a) the helicopter is maintained in an airworthy condition;
  - b) the operational and emergency equipment necessary for the intended flight is serviceable;
  - c) the Certificate of Airworthiness of the helicopter remains valid; and
  - d) the maintenance of the helicopter is performed in accordance with a maintenance programme acceptable to DGCA.
- 6.1.2 The helicopter shall not be operated unless it is maintained and released to service as per CAR, Section 2, Series 'E' or CAR-145.
- 6.1.3 Intentionally left blank.

### **6.2 Maintenance records**

- 6.2.1 The owner shall ensure that the following records are kept for the periods mentioned in 6.2.2:
- a) the total time in service hours, calendar time and cycles, as appropriate of the helicopter and all life-limited components;
  - b) the current status of compliance with all mandatory continuing airworthiness information;
  - c) appropriate details of modifications and repairs to the helicopter;
  - d) the time in service (hours, calendar time and cycles, as appropriate) since last overhaul of the helicopter or its components subject to a mandatory overhaul life;
  - e) the current status of the helicopter's compliance with the maintenance programme; and
  - f) the detailed maintenance records to show that all requirements for signing of a flight release have been met.
- 6.2.2 The records in 6.2.1 a) to e) shall be kept for a minimum period of 90 days after the unit to which they refer has been permanently withdrawn from service, and the records in 6.2.1 f) for a minimum period of one year after the signing of the maintenance release.
- 6.2.3 The lessee of a helicopter shall comply with the requirements of 6.2.1 and 6.2.2, as applicable, while the helicopter is leased.

### **6.3 Continuing airworthiness information**

6.3.1 The operator shall monitor and assess maintenance and operational experience with respect to airworthiness and shall ensure that there exists a system whereby information on faults, malfunctions, defects and other occurrences that cause or might cause adverse effects on the continuing airworthiness of the aircraft is transmitted to the organization responsible for the type design of that aircraft in accordance with CAR Section 2, Series 'C' Part I.

### **6.4 Modifications and repairs**

All modifications and repairs shall comply with airworthiness requirements acceptable to the State of Registry. Procedures shall be established to ensure that the substantiating data supporting compliance with the airworthiness requirements are retained.

### **6.5 Maintenance release**

6.5.1 A maintenance release shall be completed and signed to certify that the maintenance work has been completed satisfactorily and in accordance with approved data and the procedures described in the maintenance organisation procedures.

6.5.2 A Maintenance release shall contain a certification including:

- a) basic details of the maintenance carried out including detailed reference of the approved data used;
- b) date such maintenance was completed;
- c) when applicable, the identity of the approved maintenance organization; and
- d) the identity of the person or persons signing the release.

## **7. HELICOPTER FLIGHT CREW**

### **7.1 Qualifications**

The pilot-in-command shall ensure that the licences of each flight crew member have been issued or rendered valid by DGCA, and are properly rated and of current validity, and shall be satisfied that flight crew members have maintained competence.

### **7.2 Composition of the flight crew**

The number and composition of the flight crew shall not be less than that specified in the flight manual or other documents associated with the certificate of airworthiness.

8. The owner / lessee in case of leased helicopter, shall prepare a manual detailing the procedure for complying with the requirements laid down in this

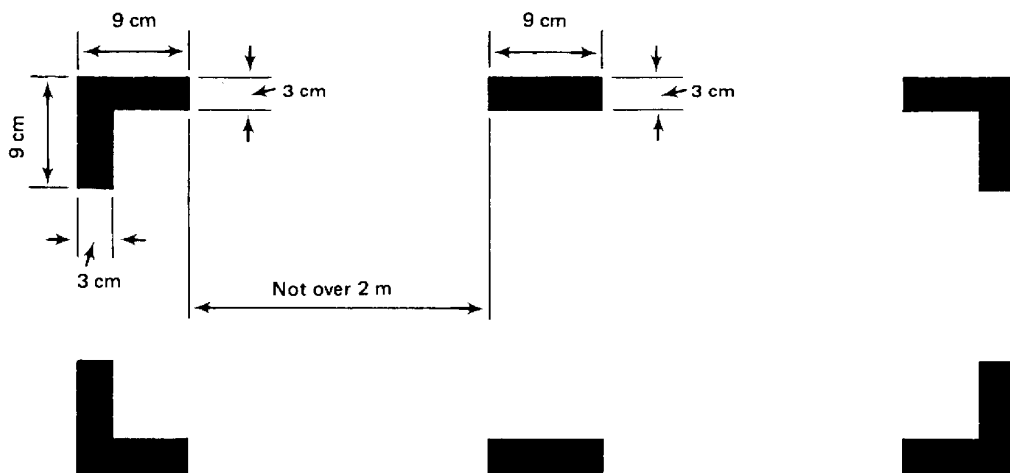
CAR. The owner /lessee in case of leased helicopter shall ensure that all concerned personnel are given adequate briefing about the content of this manual and the method of compliance.



( P. K. Chattopadhyay )  
Joint Director General

APPENDIX-I

MARKING OF BREAK-IN POINTS



MARKING OF BREAK-IN POINTS