



GOVERNMENT OF INDIA

**OFFICE OF DIRECTOR GENERAL OF CIVIL AVIATION**  
TECHNICAL CENTRE, OPP SAFDARJANG AIRPORT, NEW DELHI

**CIVIL AVIATION REQUIREMENTS**  
**SECTION 4 - AERODROME STANDARDS**  
**& AIR TRAFFIC SERVICES**

**SERIES 'B', PART II**

**21<sup>st</sup> December, 2005**

**EFFECTIVE: FORTHWITH**

**Subject: Minimum Safety Requirements for temporary Helicopter Landing Areas.**

**1. INTRODUCTION**

- 1.1 Rule 78 of the Aircraft Rules, 1937 requires licensing of such aerodromes that are used as regular place of landing and departure by a scheduled air transport service or for a series of landings and departures by any aircraft carrying passengers or cargo for hire or reward. Further, sub rule (4) of the said rule stipulates that no person shall operate or cause to be operated any flight from a temporary aerodrome or an aerodrome which has not been licensed or approved, as the case may be, under these rules unless it meets the minimum safety requirements laid down by the Director-General.
- 1.2 Helicopters are, by design, able to use non-conventional operating sites. Helicopters offer significant advantage over the use of aeroplanes for passenger transport by being able to operate away from conventional aerodromes into and from ad hoc sites or specially designed heliports.
- 1.3 Heliport or helicopter sites are not required to be licensed unless they are to be used by a schedule transport service and/ or for public transportation involving series of landing and/ or hire and reward.
- 1.4 In pursuance to sub rule (4) of Rule 78 this part of the Civil Aviation Requirements lays down the minimum safety requirements for helicopters operating to/from temporary helicopter landing areas within the Indian Territory outside an aerodrome.
- 1.5 This CAR is issued under the provisions of Rule 133A of the Aircraft Rules, 1937.

## **2. Applicability**

- 2.1 This CAR provides the minimum safety requirement considered necessary for helicopter landing areas located outside an aerodrome, for temporary use by helicopters engaged on chartered/ private flight operation.
- 2.2 The term temporary used here means a place not used by the same helicopter operator for landing and take off for more than 7 days within a consecutive period of 30 days.
- 2.3 These requirements do not apply to elevated heliports, e.g. on top of buildings, constructions, etc.

## **3. General Safety Requirements**

- 3.1 This CAR does not absolve the helicopter operator from compliance of any other requirement that are laid down in relevant CARs for the operation and maintenance of the helicopter.
- 3.2 The site to be used for temporary helicopter operations should be a level piece of well-drained ground, either good grass or solid surface free from loose stones, debris. The Final Approach and Take off Area should be obstruction free.
- 3.3 Before undertaking any such flight, the helicopter operator and/ or his pilot must satisfy himself by his physical inspection on ground/ air and/ or obtaining required information from District authorities that surroundings are free from obstacles and the site suitable for operations of type of helicopter being operated and there is sufficient open space to force land, if necessary.
- 3.4 If the temporary helicopter landing area is situated within aerodrome traffic zone or aerodrome control zone of a public aerodrome, the flight shall be coordinated with the air traffic control at the aerodrome concerned. Pilots operating to these sites must comply with the aerodrome procedures when operating within the Aerodrome Control Zone. The details of the site like name of site, and grid reference shall be given to the air traffic services of that aerodrome.
- 3.5 Helicopter operator through their Accountable Manager shall be responsible for the safety of helicopter operations, passengers and people on ground.
- 3.6 Permission of owner of the site shall be obtained, before it is used for helicopter operation and the district authorities notified in advance. It is the responsibility of the owner or the person having control of such place to ensure that the land is used as per the applicable local regulations.
- 3.7 When such place is used by helicopters carrying MP all instructions issued from time to time in this regard shall be complied with by the operator through his Accountable Manager/ Pilot

- 3.8 At least one 12 kg powder (DCP) fire extinguisher shall be available at the landing/ take-off area, clearly marked and situated so that it can be used quickly in case of fire. A first aid box shall be placed within easy reach and clearly marked. The box shall be maintained in accordance with the instructions and its contents shall be supplemented whenever used.
- 3.9 While manoeuvring the helicopter in a low hover, helicopter should be manoeuvred in such a manner that its centreline is not closer to any objects/building than  $1.5 \times$  Rotor Diameter or 30 metres, whichever is the greater.
- 3.10 Approach and departure shall be performed within sectors which as far as possible shall be in direct continuation of the take-off and landing directions, respectively. The sectors shall be without obstacles in the entire width and in a vertical distance of at least 35 ft from the approach and departure surfaces.
- 3.11 Approach and departure shall be performed in a way that forced landing can be carried out on a suitable emergency landing area at any time, unless a helicopter with one engine out of operation is capable of clearing any obstacle in the sector with a clearance of at least 35 ft.
- 3.12 Prior Operational authorization would be required from the DGCA, in case Air Taxi and/ or sightseeing flights are undertaken from such a place.

#### **4. Site Requirements**

##### **4.1 Touch down and Lift off area (TLOF)**

The minimum dimensions of the TLOF shall be  $2 B \times 2 B$ , where B equals the wheel base or the side base of the helicopter whichever is more, of the helicopter used (Ref Annexure – I). A TLOF shall be capable of supporting the weight of the helicopter intended to be used.

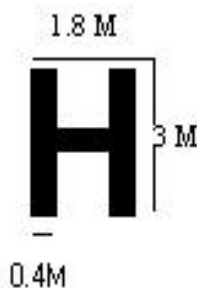
##### **4.2 Final Approach and Take-off area (FATO)**

TLOF shall be encompassed by a FATO. The minimum dimensions of the FATO shall be  $1.5 A \times 1.5 A$ , where A equals the maximum overall length of the helicopter used (Ref Annexure – I). This area shall be without obstructions. The surface shall be suitable for forced landings and free from loose objects, which may endanger the safe performance of the flight.

##### **4.3 Marking**

A helicopter identification marking shall be provided within the TLOF area and shall consist of letter "H" white in colour. The legs of the 'H' should be 3 metres in length and 0.4 metres wide. The crossbar should be of the same width and separate the legs so that the overall width of the 'H' is 1.8 metres. The marking used shall be of such a nature and fixed in a way that it does not

constitute a risk to the flight or to any third party. The marking shall be as shown in the figure given below:



Helicopter Landing Area identification marking

#### 4.4 Wind Direction Indicator

A wind direction indicator may be a wind sleeve, flag or continuous smoke source. It should be so situated so as to be visible from a helicopter in flight, in a hover or on the movement area and should indicate the wind conditions over the FATO in such a way as to be free from the effects of airflow disturbances caused by nearby objects or rotor downwash.

#### 4.5 Safety area

The take-off and landing area should be surrounded by a safety area, the width of which should not be less than 10 m. Within the safety area no obstacle must be higher than 1 m. The surface shall be suitable for any forced landings, if required.

*Note : A sketch of the TLOF, FATO and Safety area is at Appendix 'I'. A list of dimensions A & B of the most common Indian registered helicopter is at Appendix 'II'.*

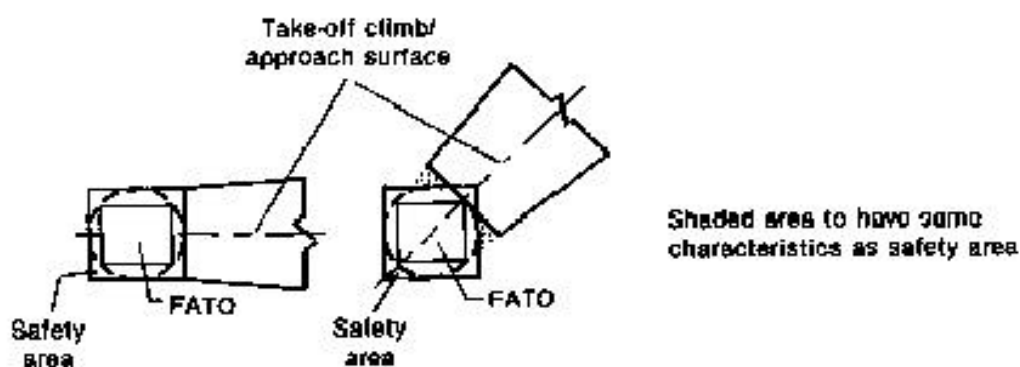
#### 4.6 Approach and Take off climb surface

An Approach and Take-off climb surface in an inclined plane sloping upwards (8%) from the end of the safety area and centered on a line passing through the centre of the FATO, should be available for a distance of at least 245 meters.

The Approach and take-off climb surface should comprise:

- a) an inner edge horizontal and equal in length to the minimum specified width of the FATO plus the safety area, perpendicular to the centre line of the take-off climb surface and located at the outer edge of the safety area; and
- b) two side edges originating at the ends of the inner edge and diverging uniformly at a specified rate of 10% from the vertical plane containing the centre line of the FATO.

*Note.- For landing area used by performance class 2 and 3 helicopters, it is advised that departure paths be selected so as to permit safe forced landings or one-engine-inoperative landings such that, as a minimum requirement, injury to persons on the ground or damage to property are minimized. Provisions for forced landing areas are expected to minimize risk of injury to the occupants of the helicopter. Such area can be determined on the basis of performance characteristics of the helicopter.*



Final Approach & Take off Surface

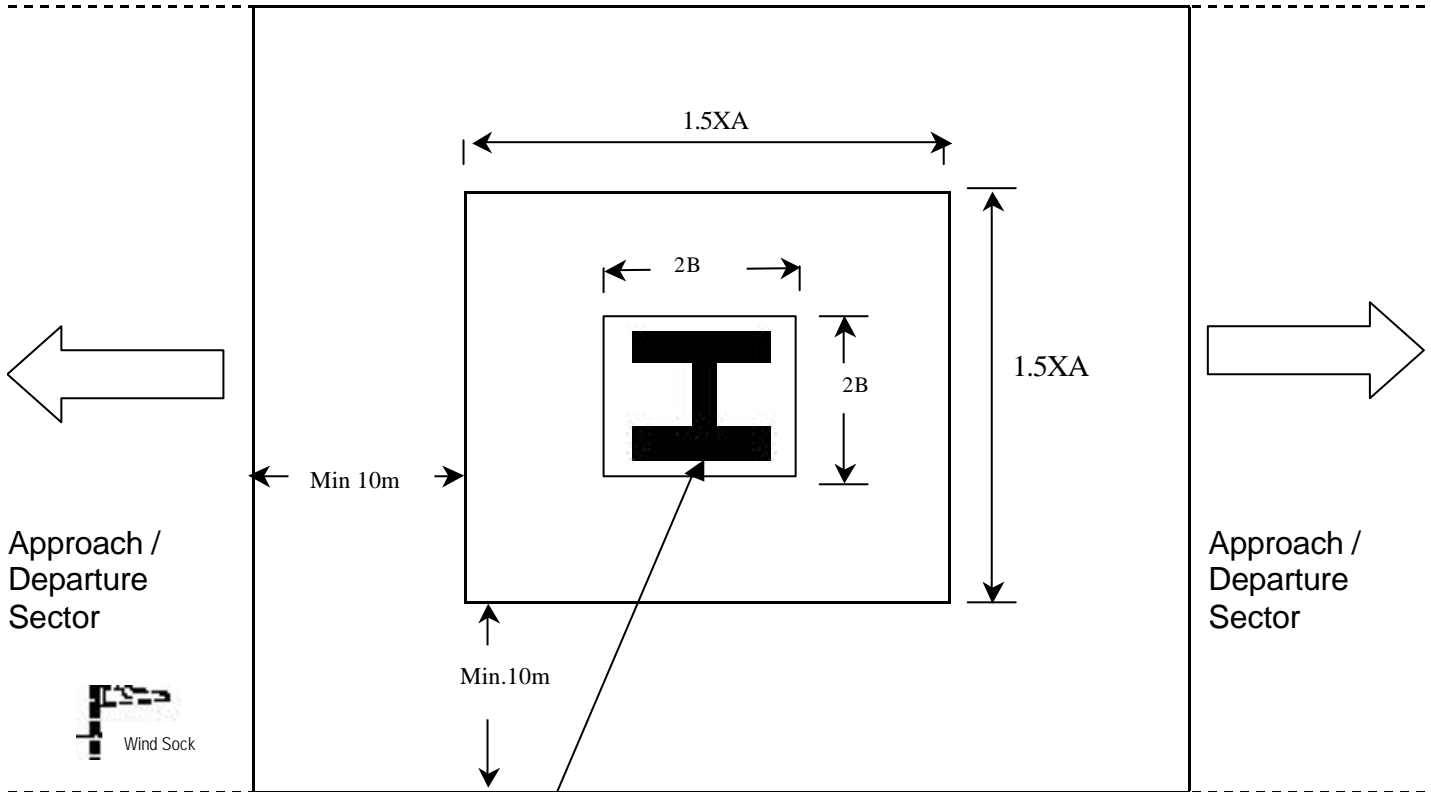
## 5 Protection of site

- 5.1 Before an area is used as take-off and landing area, operator shall take necessary measures to protect the site by cordoning, fencing with fragile material, etc. to ensure that no unauthorised persons, vehicles or stray animals enter into the perimeter of the safety area.
- 5.2 When sightseeing flights are carried out as part of a joint public event, e.g. a sporting event, a town festival, or the like, the event organizer is responsible to ensure that adequate safety measures are in place which should address the aspect of crowd control, security and separation of crowd from flying operations.

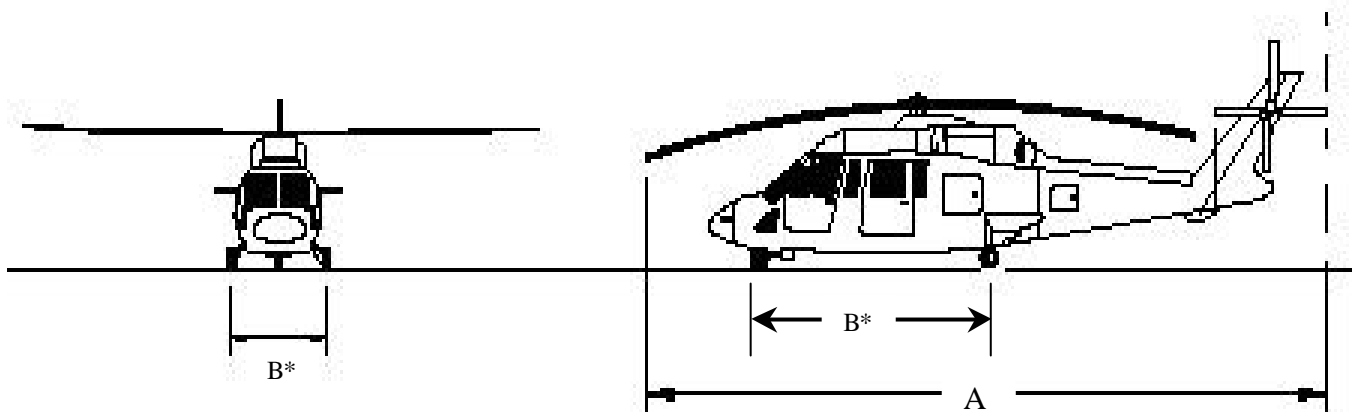
(K. Gohain)  
Joint Director General of Civil Aviation

Appendix I

SKETCH OF LANDING/ TAKE-OFF AREA REQUIRED



Touch down and Lift off (TLOF) area sufficiently strong to support the weight of helicopter



\*Whichever is more shall be taken as 'B' for the purpose of TLOF dimension.

Appendix II

**DIMENSIONS OF SOME COMMON INDIAN  
REGISTERED HELICOPTERS**

Type	Over all		Under carriage 'B'		
	Length 'A' (m)	Height (m)	Type	Length (m)	Width (m)
AS 355	12.99	3.15	skid	2.91	2.10
Bell 206 B3	11.91	3.16	skid	2.52	2.07
Bell 206 L3 & L4	12.95	3.13	skid	3.01	2.34
Bell 212	17.47	3.84	skid	3.68	2.68
BELL 230 HELICOPTER	15.30	3.65	Wheel/ skid	3.71	2.37
Bell 407	12.74	3.32	skid	3.01	2.28
Bell 412 EP	17.37	4.57	skid	2.40	2.53
BELL 430	15.30	4.02	Wheel/ skid	3.81	2.53
BELL 47	13.41	3.04	Skid	3.01	2.28
CHEETAH SA315	12.94	3.35	skid	3.29	2.37
ALLOUETTE III SA316B	10.17	2.96	wheel	3.50	2.59
DAUPIN AS 365N3	13.73	4.06	Wheel	3.64	1.89
EC135 T1	12.19	3.50	skid	3.2	2.01
ECUREUIL AS350	12.93	3.34	skid	1.43	2.28
EUROCOPTER EC 130	12.64	3.60	skid	3.2	2.40
SIKORSKY S76C	16	4.41	Wheel	5	2.44