



GOVERNMENT OF INDIA

**OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION**  
TECHNICAL CENTER, OPPOSITE SAFDARJUNG AIRPORT, NEW DELHI

**CIVIL AVIATION REQUIREMENT**  
**SECTION 7- FLIGHT CREW STANDARDS**  
**TRAINING AND LICENSING**

**SERIES 'B' PART XII**

**8<sup>th</sup> July, 2005**

**EFFECTIVE : 1<sup>st</sup> AUGUST 2005**

**Subject : Requirements for pilots for Hill Flying operations**

**1. INTRODUCTION**

Helicopter flying in the hilly terrain requires knowledge of the typical characteristics of hilly terrain, the effects of wind and rapidly changing weather conditions etc. that can restrict the operations. Height of the helipads may adversely affects the performance of helicopter especially during take off and landing phases, which also varies from helicopter to helicopter. There are inherent hazards in the hill flying, which require considerable preparation and planning, a thorough knowledge of topography. Several accidents have taken place due to intentional or inadvertent flying in the clouds.

This CAR lays down training requirements for the pilots for various types of hill operations.

**2. GENERAL REQUIREMENTS**

- 2.1 Hill flying shall be restricted to VFR operations only.
- 2.2 The operator shall ensure that the pilot engaged in hill operations has a thorough knowledge of topography, general weather pattern, presence of the mountain waves and planning of entry and exit procedures.
- 2.3 A pilot having at least 250 hrs. of hill flying experience on helicopters will be considered experienced in hilly operations.

**3. TRAINING /EXPERIENCE REQUIREMENTS**

- 3.1 Pilots engaged in regular / irregular operations in the hilly area shall undergo training as given below:
- a) Pilot having no previous experience of hill flying shall be imparted special training specific to hill operations prior to operate from copilot seat for such operations.
  - b) Pilots having hill flying experience but no experience in the area of intended operations may fly from co pilot seat for area familiarization.
  - c) Pilot shall be checked by an examiner before he is cleared to operate as PIC.
  - d) The special training specific to hill operations to be conducted at DGCA approved training school is given in Appendix A.
  - e) Flying training requirements for regular operations in hilly areas for all categories of pilots having flying experience below 1000 hrs., between 1000 to 2500 hrs. and more than 2500 hrs are given in appendix B.
  - f) Similarly flying training requirement for irregular operations in hilly areas for all categories of pilots as defined in para (e) above are given in Appendix C.
- 3.2 Pilots required to carry out one time/occasional operations in hilly area shall meet the following requirements:
- a) Pilots having no experience of flying in hilly terrain is permitted to fly from the copilot seat.
  - b) Pilots having previous experience in hill flying and with more than 250 hrs. on type shall operate in the hilly area after a check flight with an examiner or alternatively carry out trial run/landing before operating a flight with passengers on board.
- 3.3 A pilot engaged in regular and irregular hill operations shall undergo periodical recurrent training once in a year as given in CAR Section 7, Series B part XIII. Proficiency check of a pilot shall be carried out for the capacity in which he is regularly flying.

Sd/-  
(S.S. NAT)  
Deputy Director General of Civil Aviation  
For Director General of Civil Aviation

**APPENDIX 'A'**

**Ground Training Syllabus - Hill Flying**

- a) Density altitude and performance considerations
- b) Effects of decreased air density on engine and airframe
- c) Type performance- Manufacturer's Flight Manual
- d) Physiological Effects-lack of oxygen and external horizon
- e) Mountain winds-convection and air mass stability, wind pattern across prominent features of rounded shape and sharp contours, standing waves, rotor streaming turbulence, ridges, conical hills and valleys.
- f) Transit flying-Pre-flight planning, blade stall, engine failure, wind assessment en route, action when caught in a down draught, ridge crossing and valley flying
- g) Wind finding
- h) Reconnaissance, approach, landing and take off techniques
- i) Winter operations
- j) Meteorological peculiarities of the area of operations and its effect on helicopter operations.
- k) Helicopter icing

APPENDIX 'B'

Flying Training Requirement For Operations In Hilly Areas-

REGULAR OPERATIONS\*

	<b>Pilots with &lt;1000 hrs on helicopters</b>	<b>Pilots with &gt; 1000 hrs but &lt; 2500 hrs on helicopters</b>		<b>Pilots with &gt;2500 hrs on helicopters</b>	
<b>Category</b>	Inexperienced pilots	Without previous experience	With previous experience	Without previous experience	With previous experience
<b>Dual</b>	15 hrs. AND	5 hrs. AND	5 hrs. OR	5 hrs. AND	5 hrs. OR.
<b>Co-pilot</b>	At least 1000 hrs	At least 500 hrs	250 hrs	At least 250 hrs	50 hrs

**Flying Training Requirement For Operations In Hilly Areas-**

**IRREGULAR OPERATIONS\*\***

	<b>Pilots with &lt;1000 hrs on helicopters</b>	<b>Pilots with &gt;1000 hrs but &lt; 2500 hrs on helicopters</b>		<b>Pilots with &gt;2500 hrs on helicopters</b>	
<b>Category</b>	Inexperienced pilots	Without previous experience	With previous experience	Without previous experience	With previous experience
<b>Dual</b>	15 hrs. AND	5 hrs. AND	5 hrs. OR	5 hrs. AND	5 hrs. OR
<b>Co pilot</b>	1000 hrs	250 hrs	100 hrs	100 hrs	25 hrs

\* Regular operations means that flights are carried out on regular basis.

\*\* Irregular operations means that the flights are carried out for a limited period such as heli skiing.