



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 STANDARD TRAINING  
AND LICENSING,  
SERIES 'B' PART X**

**EFFECTIVE :** \_\_\_\_\_

**File No.** DGCA – 22018 / 11 / 2024 - FSD

**Subject: GROUND AND FLYING TRAINING SYLLABUS FOR ISSUE OF PILOT  
LICENCE FOR GYROPLANES**

**INTRODUCTION**

1. Section IB of Schedule II of the Aircraft Rules, 1937 stipulates, amongst other requirements, that for issuance of Pilot's License (PL), for Gyroplanes, the applicant shall have to pass a written examination and shall have completed flying training as per the syllabus prescribed by the DGCA.
2. This CAR lays down the syllabus for ground training in Air Regulations, Air Navigation, Aviation Meteorology and Aircraft and Engine and examination for issuance of the Pilot's License for Gyroplanes (PL(G)), as required under Para 1 (d) of Section I B of Schedule II. It also specifies the flying training syllabus in accordance with Para 1 (f) of the above Section of Schedule II. The provisions of this CAR must be read in conjunction with Schedule II of the Aircraft Rules 1937. The syllabus is in conformity with the knowledge requirements prescribed in ICAO Annex 1.
3. This CAR is issued under the provisions of Schedule II and Rule 133 A of the Aircraft Rules, 1937.

**SYLLABUS FOR GROUNDTRAINING / EXAMINATION OF GYROPLANE PILOT LICENCE**

4. Ground training syllabus for issue of Pilot's License for Gyroplanes i.e. PL(G) is given in Appendix A.

**SYLLABUS FOR FLYING TRAINING / EXAMINATION OF GYROPLANE PILOT LICENCE**

5. Flying training syllabus for issue of Pilot's License for Gyroplanes i.e. PL(G) is given in Appendix B. The proforma for conduct of Skill Test for issue of the Pilot's License for Gyroplanes i.e. PL(G) is given in Appendix C.

(Faiz Ahmed Kidwai)  
Director General of Civil Aviation

**SYLLABUS FOR PILOT LICENCE EXAMINATION : GYROPLANES**

**1 Air Regulation**

**1.1 Legislation**

- The Convention of International Civil Aviation
- The International Civil Aviation Organization
- Documents to be carried in aircraft
- Use of aircraft radio equipment
- Certificate of airworthiness
- Licences of personnel
- Recognition of certificates and licences
- Journey log books
- Cargo restrictions
- Restrictions on use of photographic equipment
- Endorsement of certificates of licences
- Validity of endorsed certificates and licences Annexes to the Convention ('ICAO Annexes') Annex 7 Aircraft Nationality and Registration Marks
- Definitions

**1.2 National Law**

- Indian Aircraft Act 1934 - section 1,2,8,10,11A,11B, 17&18(3/9)
- Aircraft Rule 1937- Rule No. 1-19, 21-29A, 30, 33, 37A, 38-48, 50, 52, 53, 55, 65, 67, 67A, 67B, 68-70, 76, 79-89,133A,134,140, 140(AB&C), 150 & 161.
- Schedule I, II, VI, & XI
- Indian Aircraft Rules 1920-Rule No 53-64
- Aircraft Rules 1954 (Public Health Rules)
- Aircraft Rules 2003 (Carriage of Dangerous Goods)

**1.3 Aircraft Rules and Civil Aviation Requirements**

- Validity of licences and ratings
- Medical fitness
- Decrease in medical fitness
- Crediting of flight time
- State of licence issue
- Requirements
- Minimum age
- Privilege and conditions
- Ratings for special purposes
- Experience and crediting
- Training course
- Theoretical knowledge examination
- Skill test

- Circumstances in which an instrument rating is required
- Type and class ratings
- Division of class ratings
- Circumstances in which type or class ratings are required
- Validity, revalidation and renewal
- Instructor ratings
- Instruction – general

#### **1.4 Contravention of Aviation Regulations**

- Offences
- Penalties

#### **1.5 Rules of the Air Annex**

##### **2 Rules of the Air**

- Definitions
- Applicability
- General rules
- Visual flight rules
- Signals (Appendix 1)
- Interception of civil aircraft (Appendix 2)

#### **1.6 Air Traffic regulations and Air Traffic Services**

##### **1.6.1 Air Traffic Regulations and Air Traffic Services**

- Definitions
- Objectives of air traffic services
- Classification of airspace
- Flight information regions, control areas and control zones
- Air traffic control services
- Alerting service
- Visual meteorological conditions
- Instrument meteorological conditions
- In-flight contingencies
- Pilots, responsibility to maintain separation in VMC
- Emergency and communications failure procedures by the pilot
- Interception of civil aircraft

##### **1.6.2 Aerodrome Data**

- Definitions
- Conditions of the movement area and related facilities
- Visual aids for navigation
- Indicators and signaling devices
- Markings
- Lights
- Signs
- Markers
- Signal area

- Visual aids for denoting obstacles
- Marking of objects
- Lighting of objects
- Visual aids for denoting restricted use of areas
- Emergency and other services : fire and rescue service
- Aerodrome ground lights and surface marking colours
- Colours for aeronautical ground lights
- Colours for surface markings

#### **1.7 Airworthiness Requirements**

- Certificate to be in force
- Compliance with requirements
- Periodic maintenance inspections
- Compliance with flight manual (or equivalent), instructions, limitations, placards
- Flight manual supplements
- Provision and maintenance of documents
- Gyroplane, engine and propeller log books
- Recording of defects
- Permitted maintenance by pilots

### **2. Air Navigation**

#### **2.1 Form of the Earth**

- Axis, Poles
- Meridians of Longitude
- Parallels of Latitude
- Great circle, Small circle, Rhumb line
- Hemispheres, North/South, East/West

#### **2.2 Mapping**

##### **2.2.1 General**

- Aeronautical maps and charts (topographical)
- Projections and their properties
- Conformality
- Equivalence
- Scale
- Great circles and Rhumb lines

##### **2.2.2 Conformal orthomorphic projection (ICAO 1:500,000 chart)**

- Main properties
- Construction
- Convergence of meridians
- Presentation of meridians, parallels, great circles and rhumb lines
- Scale, Standard parallels
- Depiction of height

##### **2.2.3 Direction**

- True North
- Earth's magnetic field, Variation – annual change
- Magnetic North
- Vertical and horizontal components
- Isogonals, Agonic lines

#### 2.2.4 Aircraft magnetism

- Magnetic influences within the aircraft
- Compass deviation
- Avoiding magnetic interference with the compass

#### 2.2.5 Distances

- Units
- Measurement of distance in relation to map projection

#### 2.2.6 Charts in practical navigation

- Plotting positions
- Latitude and longitude
- Bearing and distance
- Use of navigation protractor
- Measurement of tracks and distances

#### 2.2.7 Chart reference material/ map reading

- Map analysis
- Topography
- Relief
- Cultural features
- Permanent features (e.g. line features, spot features, unique or special features)
- Features subject to change (e.g. water)
- Preparation
- Folding the map for use
- Methods of map reading
- Map orientation
- Checkpoint features
- Anticipation of checkpoints
  - With continuous visual contact
  - Without continuous visual contact
  - When uncertain of position
- Aeronautical symbols
- Aeronautical information
- Conversion of units

#### 2.3 Principles of navigation

- IAS, CAS and TAS
- Track, true and magnetic
- Wind velocity, heading and groundspeed
- Triangle of velocities
- Calculation of heading and ground speed

- Drift, wind correction angle
- ETA
- Dead reckoning, position, fix

#### 2.4 Time

- Relationship between universal co-ordinated (UTC) time and local mean time (LMT)
- Definition of sunrise and sunset times

#### 2.5 Flight planning

- Selection of charts
- Route and aerodrome weather forecasts and reports
- Assessing the weather situation
- Plotting the route
- Considerations of controlled/ regulated airspace, airspace restrictions, danger areas, etc.
- Use of AIP and NOTAMS
- ATC liaison procedures in controlled/ regulated airspace
- Fuel considerations
- Alternate aerodromes
- Communications and radio/navaid frequencies
- Compilation of flight log
- Compilation of ATC flight plan
- Selection of check points, time and distance marks
- Weight and balance calculations
- Weight and performance calculations

#### 2.6 Practical navigation

- Compass headings, use of deviation card
- Organization of in-flight workload
- Maintenance of altitude and heading
- Use of visual observations
- Establishing position, checkpoints
- Revisions to heading and ETA
- Arrival procedures, ATC liaison
- Completion of flight log and Gyroplane log entries.

#### 2.7 Basic Principles, Use and Limitations of Global Navigation Satellite Systems

### **3. Flight Performance and Planning**

#### 3.1 Weight and Balance

- Terms (e.g. datum, arm, moment)
- Locating Centre of Gravity (C of G)
- C of G Limits – Longitudinal
- C of G Limits – Lateral
- Weight (e.g. empty, gross)
- Load adjustment
- Cargo tie down/ passenger loading/ external loading

**3.2 Performance**

- Effects of critical surface contamination
- Ground effect
- Weathercock effect
- Ground resonance
- Overpitching/ rotor droop
- Blade sailing
- Power available and required
- Range and endurance
- Autorotation speeds
- Best rate of climb ( $V_y$ )
- Mast bumping
- Vibrations
- Blade stall
- Bank/speed vs rate/radius of turn
- Effect of change of weight or centre of gravity (C of G) on performance

**3.3 Use of Performance Charts**

- Rate of climb
- Critical wind azimuth
- Performance (V) speed –  $V_y$ ,  $V_{ne}$

**3.4 Wake Turbulence**

- Causes
- Effects
- Avoidance

**4 Aviation Meteorology**

**4.1 The Atmosphere**

- Composition and structure
- Vertical divisions
- Pressure, density and temperature
- Barometric pressure, isobars
- Changes of pressure, density and temperature with altitude
- Altimetry terminology
- Diurnal variation of temperature
- Adiabatic process
- Temperature lapse rate
- Stability and instability

**4.2 Humidity and precipitation**

- Water vapour in the atmosphere
- Vapour pressure
- Dew point and relative humidity
- Condensation and vaporization
- Precipitation



**4.3 Pressure and wind**

- High and low pressure areas
- Motion of the atmosphere, pressure gradient
- Vertical and horizontal motion, convergence, divergence
- Surface and geostrophic wind
- Effect of wind gradient and wind shear on take-off and landing
- Relationship between isobars and wind, Buys Ballot's law
- Turbulence and gustiness
- Local winds, fohn, land and sea breeze

**4.4 Clouds formation**

- Cooling by advection, radiation and adiabatic expansion
- Cloud types
- Convection clouds
- Orographic clouds
- Stratiform and cumulus clouds
- Flying conditions in each cloud type

**4.5 Fog, mist, haze**

- Radiation, advection, frontal, freezing fog
- Formation and dispersal
- Reduction of visibility due to mist, snow, smoke, dust and sand
- Assessment of probability of reduced visibility
- Hazards in flight due to low visibility, horizontal and vertical

**4.6 Air masses**

- Description of and factors affecting the properties of air masses
- Classification of air masses, region of origin
- Modification of air masses during their movement
- Development of low and high pressure system
- Weather associated with pressure systems

**4.7 Ice accretion**

- Conditions conducive to ice formation
- Effects of hoar frost, rime ice, clear ice
- Effects of icing on Gyroplane performance
- Precautions and avoidance of icing conditions
- Power plant icing

**4.8 Thunderstorms**

- Formation – air mass, frontal, orographic
- Conditions required
- Development process recognition of favorable conditions for formation
- Hazards for Gyroplanes
- Effects of lightning and severe turbulence
- Avoidance of flight in the vicinity of thunderstorms

**4.9 Flight over hilly or mountainous areas**

- Hazards
- Influence of terrain on atmospheric processes
- Mountain waves, wind shear, turbulence, vertical movement, rotor effects, valley winds

#### **4.10 Indian Climatology**

- General seasonal circulation in the troposphere
- Local seasonal weather and winds
- Tropopause influence on aircraft performance
- Effect of ozone, radioactivity
- Development and effect of valley inversions
- Reduction of visibility caused by low drifting and blowing snow

#### **4.11 Altimetry**

- Operational aspects of pressure settings,
- Pressure altitude, density altitude
- Height, altitude, flight level
- ICAO standard atmosphere
- QNH, QFE, standard setting
- Transition altitude, layer and level

#### **4.12 The meteorological organization**

- Aerodrome meteorological offices
- Aeronautical meteorological stations
- Forecasting service
- Meteorological services at aerodromes
- Availability of periodic weather forecasts

#### **4.13 Weather analysis and forecasting**

- Weather charts, symbols, signs
- Significant weather charts
- Prognostic charts for general aviation

#### **4.14 Weather information for flight planning**

- Reports and forecasts for departure, en-route, destination and alternate(s)
- Interpretation of coded information METAR, TAF
- Availability of ground reports for surface wind, windshear, visibility

#### **4.15 Meteorological broadcasts for aviation**

- VOLMET, ATIS, SIGMET

### **5. Communications**

#### **5.1 Radio Telephony and Communications**

- Use of AIP and frequency selection
- Microphone technique
- Phonetic alphabet
- Station/Gyroplane callsigns/abbreviation
- Transmission technique

- Use of standard words and phrases
- Listening out
- Required 'readback' instructions

**5.2 Departure procedures**

- Radio checks
- Taxi instructions
- Holding on ground
- Departure clearance

**5.3 En-route procedures**

- Frequency changing
- Position, altitude/flight level reporting
- Flight information service
- Weather information
- Weather reporting
- Procedures to obtain bearings, headings, position
- Procedural phraseology
- Height/range coverage

**5.4 Arrival and traffic pattern procedures**

- Arrival clearance
- Calls and ATC instructions during the:
  - Circuit
- Approach and landing
- Vacating runway

**5.5 Communication failure**

- Action to be taken
- Alternate frequency
- Serviceability check, including microphone and headphones
- In-flight procedures according to type of airspace

**5.6 Distress and urgency procedures**

- Distress (Mayday), definition and when to use
- Frequencies to use
- Contents of Mayday message
- Urgency (Pan), definition and when to use
- Frequencies to use
- Relay of messages
- Maintenance of silence when distress/urgency call heard
- Cancellation of distress/urgency

**6. General Flight Safety**

- Seat adjustment and security
- Harnesses and seat belts
- Emergency equipment and its use

- Fire extinguisher
- Engine/cabin fires
- De-icing systems
- Survival equipment, life jackets, life rafts
- Carbon monoxide poisoning
- Re-fuelling precautions
- Flammable goods/pressurized container

## **7. Flight Instruments**

### **7.1 Pitot / Static System**

- Pitot tube, function
- Pitot tube, static source
- Alternate static source
- Position error
- System drains
- Errors caused by blockage or leakage

### **7.2 Airspeed indicator**

- Principles of operation
- Relationship between pitot and static pressure
- Definitions of indicated, calibrated and true airspeed
- Instrument errors,
- Airspeed indications, colour coding
- Pilot's serviceability checks

### **7.3 Altimeter**

- Principles of operation and construction
- Function of the sub-scale
- Effects of atmospheric density
- Pressure altitude
- True altitude
- International standard atmosphere
- Flight level
- Presentation (three needle)
- Instrument errors
- Pilot's service ability checks

### **7.4 Vertical Speed Indicator (VSI)**

- Principles of operation and construction
- Function
- Inherent lag
- Instantaneous VSI
- Presentation
- Pilot's serviceability checks

### **7.5 Gyroscopes**

- Principles

- Rigidity
- Precession

**7.6 Turn indicator**

- Rate gyro
- Purpose and function
- Effect of speed
- Presentation
- Turn coordinator
- Limited rate of turn indications
- Power source
- Balance indicator
- Principle
- Presentation
- Pilot's serviceability checks

**7.7 Altitude indicator**

- Earth gyro
- Purpose and function
- Presentations
- Interpretation
- Operating limitations
- Power source
- Pilot's serviceability checks

**7.8 Heading indicator**

- Directional gyro
- Purpose and function
- Presentation
- Use with Magnetic compass
- Setting mechanism
- Apparent drift
- Operating limitation
- Power source
- Pilot's serviceability checks

**7.9 Magnetic Compass**

- Construction and function
- Earth's magnetic field
- Variation and deviation
- Turning, acceleration errors
- Precautions when carrying magnetic items
- Pilot's service ability checks

**7.10 Engine Instruments**

- Principles, presentation and operational use of:
- Oil temperature gauge
- Oil pressure gauge

- Cylinder head temperature gauge
- Exhaust gas meter
- Manifold pressure gauge
- Fuel pressure gauge
- Fuel flow gauge
- Fuel quantity gauge (s)
- Tachometer

#### 7.11 Other Instruments

- Principles, presentation and operational use of:
  - Voltmeter and ammeter
  - Warning indicators
  - Others relevant to Gyroplane type

### **8 Human Performance & Limitations**

#### 8.1 Basic Physiology

Basic concepts of:

- Composition of the atmosphere
- Respiration and blood circulation
- Effects of partial pressure
- Hearing
- Motion sickness
- Flying and health
- Toxic hazards
- Dangerous goods
- Carbon monoxide from heaters

#### 8.2 Basic psychology

- The information process and its concepts Stress
- Judgment and decision making

### **10. Aircraft General Knowledge**

#### 10.1 Airframe Structure

- Components
- Fuselage, wings, tailplane, fin
- Primary flying controls
- Trim and flap/slat systems
- Landing gear
- Nose wheel, including steering
- Tyres, condition
- Braking systems and precautions in use
- Retraction system
- Airframe loads
- Static strength
- Safety factor
- Control lock and use

- Ground/flight precaution

#### 10.2 Powerplant

- Engines - General
- Principles of the four stroke internal combustion engine
- Basic construction
- Causes of pre-ignition and detonation
- Power output as a function of RPM

#### 10.3 Engine cooling

- Air cooling
- Cowling design and cylinder baffles
- Design and use of cowl flaps
- Cylinder head temperature gauge

#### 10.4 Engine lubrication

- Function and methods of lubrication
- Lubrication systems
- Methods of oil circulation
- Oil pump and filter requirements
- Qualities and grades of oil
- Oil temperature and pressure control
- Oil cooling methods
- Recognition of oil system malfunctions

#### 10.5 Ignition systems

- Principles of magneto ignition
- Construction and function
- Purpose and principle of impulse coupling
- Serviceability checks, recognition of malfunctions
- Operational procedures to avoid spark plug fouling

#### 10.6 Carburation

- Principles of float type carburetor
- Construction and function methods to maintain correct mixture ratio
- Operation of metering jets and accelerator pump
- Effect of altitude
- Manual mixture control
- Maintenance of correct mixture ratio
- Limitation on use at high power
- Avoidance of detonation
- Idle cut-off valve
- Operation and use of primary engine controls
- Air induction system
- Carburetor icing, use of hot air
- Injection systems, principles and operation

#### 10.7 Aero Engine Fuel

- Classifications of fuels
- Grades and identification by colour
- Quality requirements
- Inspection for contamination
- Use of fuel strainers and drains

#### **10.8 Fuel Systems**

- Fuel tanks and supply lines
- Venting system
- Mechanical and electrical pumps
- Gravity feed tank selection
- System management

#### **10.9 Engine Handling**

- Starting procedures and precautions
- Recognition of malfunctions
- Warming up, power and system checks
- Oil temperature and pressure limitations
- Cylinder head temperature limitations
- Ignition and other system checks
- Power limitations
- Avoidance of rapid power changes
- Use of mixture control

### **11. Principles of Flight**

#### **11.1 The Atmosphere**

- Composition and structure
- ICAO standard atmosphere
- Atmospheric pressure

#### **11.2 Airflow around a body, sub-sonic**

- Air resistance and air density
- Boundary layer
- Friction forces
- Laminar and turbulent flow
- Bernoulli's principle – venturi effect

#### **11.3 Airflow about a two dimensional aerofoil**

- Airflow around a flat plate
- Airflow around a curved plate (aerofoil)
- Description of aerofoil cross section
- Lift and drag
- CL and CD and their relationship to angle of attack

#### **11.4 Three dimensional flow about an aerofoil**

- Aerofoil shapes and wing planforms
- Induced drag



- Downwash angle, vortex drag, ground effect
- Aspect ratio
- Parasite (profile) drag
- Form, skin friction and interference drag
- Lift/drag ratio

#### 11.5 Distribution of the four forces

- Balance and couples
- Lift and weight
- Thrust and drag
- Methods of achieving balance

### **12. Principle of Gyrocopter Flying**

#### 12.1 Fundamentals of a Gyrocopter

- The 3 axes of rotation.
- The names of the main body parts.
- The name of the rotor head components.
- How the stick is connected to the rotor head
- The principles of pitch trim
- The principles of a pre-rotator
- The function of the tail section
- How the pedals are connected to the nose wheel and the rudder

#### 12.2 The Forces on a Gyrocopter

- The forces acting on a Gyro
- Changes in Yaw with power changes.
- Changes in Roll with power changes
- The couple between the rotor thrust and engine thrust
- The centre of gravity
- Stability.

#### 12.3 The Performance of a Gyrocopter

- The power curve
- What is the effect of weight on performance.
- What is the effect of air density on performance
- The height/Velocity diagram
- Airflow over a rotor disc

#### 12.4 The Basics of a Rotor System

- Terminology of the rotor blade
- Terminology of the rotor disc
- The coning angle
- Blade Tracking
- Rotor Balancing
- Underslung Rotors
- The aerofoil
- Lift

- The simplicity of the Gyroplane wing
- Rotational Airflow
- Oncoming Airflow
- Dissymmetry of lift
- The Magic of the Teeter Bolt
- Teetering to Equality.
- Retreating blade stall.
- The speed of the rotor
- Why does the rotor keeps spinning.
- The air flow along the span of a rotor.

DRAFT

**Appendix B**

**FLYING TRAINING SYLLABUS FOR ISSUE OF PL(G)**

| Exercise       | Exercise description                                                   | No of sorties                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           | Duration    |              |           |                 |              |
|----------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------|--------------|-----------|-----------------|--------------|
|                |                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | Dual        | Total Dual   | Solo/ PIC | Total Solo /PIC | Grand Total  |
|                |                                                                        | Dual                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Solo/ PIC |             |              |           |                 |              |
| <b>Stage 1</b> | <b>BASIC FLYING</b>                                                    | <b>3</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>-</b>  | <b>3:00</b> | <b>3:00</b>  | <b>-</b>  | <b>-</b>        | <b>3:00</b>  |
| Ex 1           | Introductory Flight                                                    | <p>The objective is that by the end of this stage, the student is able to have a basic understanding of how to control a gyroplane both on the ground and in the air. The student should be relatively relaxed in the air and be able to control the gyroplane at roughly a level altitude and at a roughly steady speed, in balance and in trim. The student should be able to lookout for other aircraft and be able to assimilate what is happening to the aircraft and the terrain that is being flown over. The student should be able to interpret the instruments and be aware of where they should be looking. They should be able to communicate with the instructor.</p> |           |             |              |           |                 |              |
| Ex 2           | Lookout, Speed, Direction, Trim, Height, Balance                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |             |              |           |                 |              |
| Ex 3           | Start Up, Taxi, Shut Down                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |             |              |           |                 |              |
| <b>Stage 2</b> | <b>GENERAL HANDLING</b>                                                | <b>6</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>-</b>  | <b>6:00</b> | <b>9:00</b>  | <b>-</b>  | <b>-</b>        | <b>9:00</b>  |
| Ex 4           | Understanding Power Changes, Coordinated Turns                         | <p>The objective is that by the end of this stage, the student is able to have a good control of the aircraft for a range of speeds within the flight envelope. The student should be able to hold a reasonably accurate height and speed and be able to change height, speed and direction whilst maintaining balance and trim. The student should be able to do basic navigation by features and headings. The student should be able to do proper preflight planning for flights in the local area. The student should have a good understanding of airmanship.</p>                                                                                                             |           |             |              |           |                 |              |
| Ex 5           | Correcting for Wind, Accurate Height and Speed                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |             |              |           |                 |              |
| Ex 6           | Performance Climbing and Descending, Climbing and Descending Turns     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |             |              |           |                 |              |
| Ex 7           | Significant Speed Changes, Fast Flight                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |             |              |           |                 |              |
| Ex 8 & 9       | Flying the Circuit Pattern                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |             |              |           |                 |              |
| <b>Stage 3</b> | <b>TAKE OFFS AND LANDINGS</b>                                          | <b>4</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>-</b>  | <b>6:00</b> | <b>15:00</b> | <b>-</b>  | <b>-</b>        | <b>15:00</b> |
| Ex 10          | Active Rotor Management                                                | <p>The objective is that by the end of this stage, the student is able to have a good ability to take off and land in a variety of wind conditions and power settings. The student should be able to land the gyroplane in a designated area with reasonable accuracy.</p>                                                                                                                                                                                                                                                                                                                                                                                                         |           |             |              |           |                 |              |
| Ex 11          | Take Offs, Wind on the Runway Heading, Take Offs, Different Conditions |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |             |              |           |                 |              |
| Ex 12          | Landing, Wind on the Runway Heading, Landing, Different                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |             |              |           |                 |              |

**CIVIL AVIATION REQUIREMENTS  
SERIES 'B' PART X**

**SECTION 7  
OCT 2025**

|                |                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |             |              |              |              |              |
|----------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------|--------------|--------------|--------------|--------------|
|                | Conditions                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |             |              |              |              |              |
| Ex 13          | Precision Landings, Precision Landings, Idle Power                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |             |              |              |              |              |
| <b>Stage 4</b> | <b>ADVANCED</b>                                                           | <b>4</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>-</b>  | <b>4:00</b> | <b>19:00</b> | <b>-</b>     | <b>-</b>     | <b>19:00</b> |
| Ex 14          | Departing and Arriving at Airfields                                       | The objective is that by the end of this stage, the student is able to fly the gyroplane in all the standard manoeuvres within the normal flight envelope. It is likely that some of these lessons are started in parallel with the earlier exercises.                                                                                                                                                                                                                                              |           |             |              |              |              |              |
| Ex 15          | Slow Flight (Helicopter Mode), Slow Flight on Idle Power (Parachute Mode) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |             |              |              |              |              |
| Ex 16          | Ground Reference Turns, Unusual Attitudes                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |             |              |              |              |              |
| Ex 17          | Low Flying, Consolidation, En Route Airmanship                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |             |              |              |              |              |
| <b>Stage 5</b> | <b>EMERGENCIES</b>                                                        | <b>4</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>-</b>  | <b>3:00</b> | <b>22:00</b> | <b>-</b>     | <b>-</b>     | <b>22:00</b> |
| Ex 18          | Inflight Emergencies                                                      | The objective is that by the end of this stage, the student is able to have a good understanding of the possible emergencies that could be expected when flying, and be able to deal with them. This includes the ability to make precautionary landings and emergency landings should the engine fail. This includes landing away from the airfield and, additionally, around the airfield circuit pattern. On completion of this section, the student should be in a position to safely fly solo. |           |             |              |              |              |              |
| Ex 19          | Precautionary Landing                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |             |              |              |              |              |
| Ex 20          | Forced Landing                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |             |              |              |              |              |
| Ex 21          | Forced Landing around the Airfield                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |             |              |              |              |              |
| <b>Stage 6</b> | <b>SOLO</b>                                                               | <b>1</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>10</b> | <b>1:00</b> | <b>23:00</b> | <b>10:00</b> | <b>10:00</b> | <b>33:00</b> |
| Ex 22          | Pre-Solo Check Flight                                                     | The objective is that by the end of this stage, the student is able to demonstrate good competence and confidence when flying solo.                                                                                                                                                                                                                                                                                                                                                                 |           |             |              |              |              |              |
| Ex 23          | First Solo                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |             |              |              |              |              |
| Ex 24 to 32    | Solo Consolidation                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |             |              |              |              |              |
|                | <b>NAVIGATION</b>                                                         | <b>1</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>5</b>  | <b>1:00</b> | <b>24:00</b> | <b>5:00</b>  | <b>15:00</b> | <b>39:00</b> |
| Ex 38          | En Route Navigation, Landing Out                                          | The objective is that by the end of this stage, the student is able to plan and successfully fly routes with multiple turning points and land at airfields different from the one used for take-off.                                                                                                                                                                                                                                                                                                |           |             |              |              |              |              |
| Ex 39 to 41    | Solo Navigation                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |             |              |              |              |              |
| Ex 42 to 43    | Qualifying Cross Country                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |             |              |              |              |              |
| Ex 44          | <b>SKILL TEST</b>                                                         | <b>-</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>1</b>  | <b>-</b>    | <b>24:00</b> | <b>1:00</b>  | <b>16:00</b> | <b>40:00</b> |

Appendix C

SCHEDULE OF SKILL TEST FOR ISSUE OF PL(G)

|                                                                                                              |                                                                    |                       |                                            |
|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------|--------------------------------------------|
| <b>Name :</b>                                                                                                |                                                                    | <b>Operator :</b>     |                                            |
| <b>Experience :</b><br><b>Dual:      Solo:</b>                                                               | <b>Type of Issue :</b><br><b>Initial/ Renewal/<br/>Endorsement</b> | <b>RegnNo:</b>        | <b>Date of check:</b><br><b>Duration :</b> |
| <b>Exercise Description</b>                                                                                  |                                                                    | <b>S</b>              | <b>US</b>                                  |
| Knowledge of DGCA Rules/CARs/Circulars/AICs                                                                  |                                                                    |                       |                                            |
| Type Specific Knowledge                                                                                      |                                                                    |                       |                                            |
| Safety Briefing                                                                                              |                                                                    |                       |                                            |
| Starting Procedure                                                                                           |                                                                    |                       |                                            |
| Taxying                                                                                                      |                                                                    |                       |                                            |
| Take Off and Landing Into Wind                                                                               |                                                                    |                       |                                            |
| Take Off and Landing Cross Wind (Within type limitations)                                                    |                                                                    |                       |                                            |
| Straight and Level Fying at various airspeeds including at maximumand lowest possible speed for level flight |                                                                    |                       |                                            |
| Level Turns at various banks (Within type limitations)                                                       |                                                                    |                       |                                            |
| Climbing and Descending Turns                                                                                |                                                                    |                       |                                            |
| Recovery from drop in speed below lowest safe speed ( at safe altitude)by application of power               |                                                                    |                       |                                            |
| Recovery from drop in speed below lowest safe speed ( at safe altitude)without application of power          |                                                                    |                       |                                            |
| Go around from baulked approach                                                                              |                                                                    |                       |                                            |
| Take Off and Landing from Restricted Area to achieve lowest possiblespeed consistent with safety             |                                                                    |                       |                                            |
| Zero Speed Descent (at safe altitude)                                                                        |                                                                    |                       |                                            |
| Recovery from Unusual Attitudes                                                                              |                                                                    |                       |                                            |
| Power off approach and landing                                                                               |                                                                    |                       |                                            |
| Emergencies (specific to type including engine emergencies)                                                  |                                                                    |                       |                                            |
| Landing on unprepared surface (Within type limitations)                                                      |                                                                    |                       |                                            |
| Shutdown procedure                                                                                           |                                                                    |                       |                                            |
| <b>Remarks:</b>                                                                                              |                                                                    |                       |                                            |
| Signature of Trainee                                                                                         |                                                                    | Signature of Examiner |                                            |