



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

CIVIL AVIATION REQUIREMENTS
SECTION 7 - FLIGHT CREW STANDARDS
TRAINING & LICENSING
SERIES I PART X
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Subject: Authorisation of Glider Instructors and Examiners on Glider/Motor Glider

1. INTRODUCTION

In order to standardize the glider training activities, this Civil Aviation Requirement lays down the minimum requirements for issue of authorization for Gliding Instructors and Examiners on Gliders/Motor gliders

This CAR is issued under Rule 133A, 133B, 41A and Sub Rule 2(a) of Rule 38A and clause (e) of Para 2 of Section A of Schedule II of the Aircraft Rules 1937.

2. APPLICABILITY

This CAR is applicable to all glider pilots and organizations involved in operation of gliders and or conduct of glider training.

3. GLIDER INSTRUCTOR AUTHORISATION

Glider Instructor Authorization may be granted to a person who holds a valid 'Pilot Licence (Glider)' issued by DGCA, for the purpose of giving instructions in piloting the glider.

3.1 Requirements – The applicant shall satisfy the following requirements:

(a) Age— he shall be not less than eighteen years of age on the date of application.

(b) Knowledge— He shall pass an oral examination relevant to the glider pilot, in Air Regulations, Human Performance, Operational Procedures, Air Navigation, Aviation Meteorology, Aircraft and Instruments, Flight Performance, Planning and Loading, Principles of Flight, in accordance with the syllabus prescribed by the DGCA for PL(G), with not less than 70% marks.

(c) Experience— He shall produce evidence of having satisfactorily completed as a pilot of a glider—

- (i) not less than fifty hours of flight time as Pilot-in-Command including not less than two hundred fifty take-offs and landings, provided that a person who has satisfactorily completed not less than two hundred hours of flight time as Pilot-in-Command on an aeroplane shall be required to complete on a glider not less than twenty hours of flight time as Pilot-in-Command including not less than one hundred take-offs and landings.
- (ii) not less than two solo flights in a glider of not less than two hours duration each.
- (iii) one solo cross-country flight of not less than thirty nautical miles distance in a glider, if required to impart instruction on cross country soaring in a glider.
- (iv) Satisfactorily completed a Glider Instructor's Course approved by DGCA (Appendix I).

Note: The requirement laid down in para 3.1(c) (ii) and para 3.1(c) (iii) may also be completed in a Motor Glider with the engine shut down. In such cases FAI approved GNSS flight recorder with Engine Noise Level (ENL) detection, shall be carried on board, to prove that the appropriate portion of flight (two hours duration or a continuous distance of 30 nm as the case may be), was conducted without the use of engine, and the digital file preserved and certified by an official observer/Glider Instructor/Glider Extension of Rating Instructor/Flight Examiner(Gliders).

(d) Skill— He shall demonstrate to the satisfaction of a Flight Examiner (Gliders) his competency as glider pilot instructor to perform the procedures and maneuvers prescribed in the syllabus within a period of six months immediately preceding the date of application. (Appendix III)

3.2. Validity— The period of validity shall commence from the date of successful completion of competency check laid down in para 3.1(d). The authorisation shall be valid for a period not exceeding 5 years.

3.3. Renewal— The Glider Instructor Authorisation may be renewed on receipt of

(i) evidence of the applicant having satisfactorily completed on a glider not less than ten hours of flight time as an Instructor within a period of 12 months immediately preceding the date of application for renewal

Or

(ii) in lieu thereof having completed the Competency Check to the satisfaction of a Flight Examiner (Gliders) as laid down in para 3.1(d) within a period of six months immediately preceding the date of application and having successfully completed a Flight Instructor Refresher Course (Appendix II) with a Flight Examiner (Gliders) within a period of 24 months immediately preceding the date of application.

*Note: A holder of Flight Instructors Rating (Gliders) (valid/expired), will be granted Glider Instructor Authorisation, after the applicant has satisfactorily completed the requirements as per para 3.3.

3.4. Glider Instructor Authorization may also be granted to a person who holds a valid Pilot's Licence (Gliders) issued by DGCA, based on qualifications/licence/certificate/experience gained in an ICAO contracting state provided the applicant meets the experience laid down in para 3.1(c)(i), 3.1(c)(ii) and 3.1(c)(iii) above and undergoes a skill test laid down in para 3.1(d) above. Gliding experience gained in any ICAO contracting state shall also be

considered for the issue of all gliding authorisations including Glider Instructor/Examiner Authorisations.

3.5. Privileges— Subject to the validity of endorsements and ratings in the Pilot's Licence (Gliders), the privileges of the holder of a Glider Instructor Authorisation shall be: —

- (a) to impart flying instructions on all gliders entered in the aircraft rating of his Pilot's Licence (Gliders),
- (b) to impart instructions for carrying out aero-tow provided he holds an Aero-tow rating.
- (c) to impart instructions on motor gliders provided he holds a motor-glider rating.
- (d) to supervise and authorise solo flights by Student Glider Pilots.
- (e) to conduct skill tests for issues and renewal of PL(G) and extension of aircraft rating on PL(G) provided he has more than 50 hours of instructional experience on gliders and not less than 10 hours of flight time as PIC on gliders within preceding 12 months.

4. AUTHORISATION OF FLIGHT EXAMINER (GLIDERS)

4.1. Requirements: — An applicant for a Flight Examiner (Gliders) Authorisation shall have a Glider Instructor Authorization and shall satisfy the following requirements: —

(a) Experience— He shall produce evidence of having satisfactorily completed, not less than 300 hours as Pilot-in-Command on a glider of which, not less than 200 hours should be instructional.

4.2. Validity— The period of validity shall commence from the date of issue of Flight Instructor (Gliders) authorisation. The authorisation shall be valid for a period not exceeding five years.

4.3. Renewal— The Flight Examiner (Gliders) authorisation may be renewed on receipt of evidence of the applicant having satisfactorily completed on a glider not less than 10 hours of flight time as an instructor/examiner within preceding 12 months, or

in lieu thereof, pass the Competency Check laid down in para 3.1(d). (Appendix III)

4.4. Privileges— Subject to the validity of endorsements and ratings in the Pilot's Licence (Gliders) of the holder, the privileges of a Flight Examiner (Gliders) shall be: —

- (a) All privileges of Glider Instructor
- (b) Conduct glider instructor courses for issue of Glider Instructor Authorisation
- (c) Conduct refresher courses for Gliding Instructors
- (d) Carry out Competency Check for issue/renewal of Glider Instructor Authorisation and Flight Examiner (Gliders) Authorisation
- (e) To conduct oral examination for issue/renewal of Glider Instructor authorisations

5. WITHDRAWAL OF INSTRUCTOR/EXAMINER PRIVILEGES

The DGCA may withdraw Glider Instructor/Flight Examiner (Gliders) authorisation if evidence shows that an Instructor/Examiner :

- At any time, acts in a manner which is in contravention of the guidelines contained in this CAR;

- Failed to follow the applicable instructions to maintain the required standards, or to follow proper procedures;
- Fraudulently misused Instructor/Examiner authority, or acted in any other way that would discredit the DGCA;
- Breached the DGCA Civil Aviation Rules and Regulations; or
- During the course of a Skill Test, Competency Check, or Standardization Check failed to meet the required DGCA Standards.

Except where there is an immediate threat to safety, the DGCA, prior to making a final decision in the matter of withdrawal of an Instructor/Examiner's authority, shall ensure the matter has been investigated thoroughly; and the Instructor/Examiner and, where applicable, the concerned Operator, have been given a formal opportunity to respond to the allegations, either verbally or in writing.

(B.S.Bhullar)
Director General of Civil Aviation

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Glider Instructor's Course

The glider instructor course shall comprise of Classroom and flight training. The following components shall be

Structured Class-room Training: (40 hours)

1. Human Behaviour
 - a. Needs and motivation
 - b. Human factors that inhibit learning
 - c. Student emotional reactions – Anxiety, normal and non-normal reactions to stress
 - d. Teaching the adult student
2. Learning Process
 - a. Learning theory – Behaviourism, Cognitive theory, constructivism
 - b. Perceptions and insight
 - c. Laws of learning – readiness, effect, exercise, primacy, intensity & recency
 - d. Domains of learning – cognitive, affective and psychomotor
 - e. Characteristics of learning and learning styles
 - f. Stages of skill acquisition – Cognitive, associative and automatic response
 - g. Types of practice – deliberate, blocked and random practice
 - h. Multitasking – distractions & interruptions, fixation & inattention
 - i. Scenario based training
 - j. Kinds of errors – Slip and mistake
 - k. Reducing errors, error recovery and learning from errors
 - l. Motivation and maintaining motivation
 - m. Memory - retention of learning and transfer of learning
3. Teaching Process
 - a. Instructor code of conduct
 - b. Preparation and presentation of a lesson
 - c. Training delivery methods – lecture, guided discussion, problem based learning, e-learning, co-operative group learning, and drill & practice
 - d. Instructional aids and teaching technologies
4. Assessment
 - a. Characteristics of effective assessment
 - b. Traditional assessment – written and oral
 - c. authentic assessment – collaborative, maneuver/procedure grades, Single Pilot Resource Management (SRM)
5. Instructor responsibilities and professionalism
6. Techniques of flight instruction
 - a. Demonstration-performance training delivery method
 - b. Integrated flight instruction
 - c. Assessment of piloting ability
 - d. Aeronautical decision making
7. Risk management
 - a. Risk management process
 - b. Assessment and mitigation of risk
 - c. Threat and Error Management

Practical Training Exercises:

1. Ground Briefings (16 hours ground)
 - a. Method and techniques of flight and ground Instruction
 - b. Ground briefing
 - c. How to read a logbook
 - d. Checklists
 - e. Lookout
 - f. Airmanship
 - g. First solo
 - h. Solo supervision
 - i. Type conversion and single seater gliders
 - j. Teaching thermalling techniques and centring
 - k. Meteorology and instructing
 - l. Conduct of joy-rides
 - m. Rigging, de-rigging and daily inspection
2. Teaching Techniques (8 hrs ground + 1 hr flt time/10 launches)
 - a. Effects of control
 - b. Use of trimmer
 - c. The straight glide
 - d. Turning
 - e. Airbrakes and spoilers
 - f. Approach control
 - g. Landing
 - h. Circuit planning
 - i. Winch/aerotow/self-launch (as applicable)
 - j. Stalls and recovery
 - k. Spins, spiral dives and recovery
3. Patter exercises for (3 hrs flight time/30 launches)
 - a. Look-out
 - b. Effect of controls
 - c. Adverse yaw
 - d. Airspeed monitoring
 - e. Trimming
 - f. Straight glide
 - g. Turning and look-out
 - h. Stalling and recovery
 - i. Spins and recovery
4. Fault finding and remedial training techniques (1 hr flight time/10 launches)
5. Aerobatics (as applicable) (as needed)

Notes:

1. The times mentioned for Practical Training Exercises are indicative and if required the candidates should be given more ground/air time to become proficient.
2. Patter, though very important, is only a small part of repertoire of skills and techniques available to an instructor. It should be seen as an important supplement to the techniques covered under serial no. 2.

Appendix II

Glider Instructor's Refresher Course

The glider instructor refresher course shall comprise of the following components:

Structured Class-room Training: (16 hours)

1. Instructor responsibilities and professionalism
2. New advances in gliders, techniques and instrumentation
3. Revisions/changes to DGCA rules relevant to gliding and gliding training
4. FAI Sporting Code and certification of flight records
5. Techniques of flight instruction
 - a. Demonstration-performance training delivery method
 - b. Integrated flight instruction
 - c. Assessment of piloting ability
 - d. Aeronautical decision making
6. Assessment
 - a. Characteristics of effective assessment
 - b. Traditional assessment – written and oral
 - c. authentic assessment – collaborative, manoeuvre/procedure grades, Single Pilot Resource Management (SRM)
7. Risk management
 - a. Risk management process
 - b. Assessment and mitigation of risk
8. Feedback on new insights and felt need for change in gliding instruction

Appendix III

Glider Instructor/ Flight Examiner (Gliders) Competency Check (Consolidated)

Name of the Organisation: _____

Date of check: _____ Time: from _____ to _____ No. of Landings: _____

Glider Registration: VT- _____ Glider Type: _____

Name of pilot under check:	Name of the Examiner:
Licence No:	Licence No:
Medical Validity:	Authorisation No:

S.No.	Instructor/Examiner Capability on the following exercises	Assessment	Remarks
1	PREPARATION FOR FLIGHT:		
1.1	Weather suitability (B)		
1.2	Glider documents check (B)		
1.3	Weight, balance and performance calculations (B)		
1.4	Pre-flight inspection (B)		
1.5	Pre-flight briefing (B)		
2	STARTING, TAXYING & POWER CHECKS:		
2.1	Pre & post start checks (MG)		
2.2	Taxying technique (MG)		
2.3	Power checks (MG)		
3	TAKE-OFF: (Self Launch/Winch/Aerotow as applicable)		
3.1	Pre-takeoff checks (B)		
3.2	Assessment of cross wind component (B)		
3.3	Checks during and after takeoff (B)		
3.4	Normal take-off (B)		
3.5	Cross-wind take-off (B)		
4	GENERAL FLYING:		
4.1	Climbing (MG)		
4.2	Straight & Level (MG)/Straight Glide (G)		
4.3	Descending with power (MG)		
4.4	Level turns (MG)/ Normal Turns (G)		
4.5	Climbing turns (MG)		
4.6	Descending turns (B)		
4.7	Steep turns (B)		
4.8	Soaring (B)		
5	STALLING/UNUSUAL ATTITUDES:		
5.1	Knowledge of aircraft manoeuvre limitations & Speed limitations (B)		
5.2	Checks before stalling (B)		
5.3	Flight at 1g clean stall speed +5 kts and flight at 1g Airbrake deployed stall speed +5kts – level, climbing, descending and turning (B)		

5.4	Recognition of and recovery from stall:		
5.4.1	Stall in straight flight (B)		
5.4.2	Stall in Turning flight (B)		
5.4.3	Stall in approach configuration (B)		
5.4.4	Stall in gliding flight (B)		
5.4.5	Stall with climb power (MG)		
5.5	Recognition of and recovery from Incipient Spin		
5.6.1	During Gliding flight (B)		
5.6.2	At climb power (MG)		
5.6.3	In approach configuration at safe height (B)		
6	FORCED LANDINGS WITHOUT POWER:		
6.1	Checks (B)		
6.2	Procedures (B)		
6.3	Judgment (B)		
7	NAVIGATION AND ORIENTATION:		
7.1	Recognition of features (MG)		
7.2	Assessment of heading (MG)		
8	AIRFIELD APPROACH PROCEDURES:		
8.1	CIRCUIT PROCEDURE: (B)		
8.1.1	Powered circuit (MG)		
8.1.2	Gliding Circuit (B)		
8.1.3	Bad weather circuit (B)		
9	APPROACH & LANDING:		
9.1	Pre-landing checks (B)		
9.2	Powered approach (MG)		
9.3	Glide approach (B)		
9.4	Flapless approach (where applicable)		
9.5	Short-field landing (B)		
9.6	Crosswind landing (B)		
9.7	Assessment of crosswind component (B)		
9.8	Missed approach procedure (MG)		
9.9	Checks after landing (B)		
10	STARTING/STOPPING ENGINE IN FLIGHT (MG)		
11	SIMULATED EMERGENCIES		
11.1	Engine fire in the air/on the ground (MG)		
11.2	Cabin fire in the air/ground (MG)		
11.3	Engine failure after take-off (MG)		
11.4	Engine & Systems Handling (MG)		
11.5	Simulated launch failures (Winch/Aerotow) (G)		
11.6	Other emergencies (Winch/Aerotow) (G)		
12	AIRMANSHIP		
12.1	Look-out (B)		
12.2	Positioning – airspace, hazards, weather (B)		

12.3	Aerodrome discipline (B)		
13	ACTION AFTER FLIGHT		
13.1	Engine shut down (MG)		
13.2	Parking & securing aircraft (B)		
14	ASSESSMENT		
14.1	Assessment as Flight Examiner (Gliders)		
14.2	Assessment as Glider Instructor		
14.2.1	Ability to impart instructions		
14.2.2	Ability to brief and debrief pilot trainees		
Note: G – Glider; MG – Motor Glider; B – Both S – Satisfactory NS – Not satisfactory The skill test may be carried out on either a Motor Glider or Glider			
Final assessment and recommendation:			
(Large empty box for final assessment and recommendation)			
Signature of Candidate:		Signature of Flight Examiner (Gliders)	