



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 & LICENCING
SERIES ‘I’ PART VII,
ISSUE III, DATED 30th Aug 2019

EFFECTIVE: 30th Nov 2019

File No. AV 22024/12/2016

Subject: **Criteria for approval of Ground Instructors/Subject Matter Experts (SMEs)**

1. **Introduction**

ICAO Annex 1 and Annex 6 require demonstration of aviation subjects' knowledge, for issue of type ratings in case of pilots, for approval as flight dispatchers, and recurrent training of pilots and flight dispatchers. Ground instructors carry out ground training in technical and performance subjects as part of an Approved Training Organization (ATO)/Ground Training Organization (GTO) or an operator's approved training programme/type rating programme. This part of the Civil Aviation Requirement is issued under Rule 29C and 133A of the Aircraft Rules 1937 establishing criteria for approval of ground instructors/ SMEs.

2. **Applicability**

This CAR prescribes the requirements for the issuance of Ground Instructor/ SME approval for the personnel of Scheduled/Non-scheduled/Scheduled Commuter/ATOs/GTOs, and the conditions under which these approvals are necessary along with their limitations.

3. **Definitions**

Air Traffic Controller (ATCO) - Air Traffic Controller means a person who is authorized for performing duties in an air traffic services unit and entrusted with the task of giving instructions, clearance or advice to aircraft by approved means of communication, in the interest of safety of aircraft operations.

CCQ- Cross-Crew Qualification is a shortened training program, which only addresses the differences between the base aircrafts and its close compatriot aircraft (i.e. derivative aircraft).

Flight Dispatcher – A person duly approved, who is involved in the operational control of flight operations in accordance with the operator's approved method of control and supervision, of such operations.

Flight Engineer– A person duly authorized as a flight crew member, responsible for monitoring and operation of the aircraft's engines and other complex systems.

Flight Navigator – A person duly authorized as a flight crew member to navigate the aircraft, and for any other duties assigned for safe and efficient conduct of a flight. The term also includes Navigator/Naval Observer from military/ para-military forces.

Ground Instructor (GI) – A person duly approved to provide ground training in aeronautical knowledge areas related to technical aspects and/or aircraft performance.

Qualified Pilot – A person duly licensed (minimum CPL/CHPL) or a pilot from the military/ para-military, who holds or has held the authority to handle controls of an aircraft.

SME (Subject Matter Expert) - A person who provides the knowledge and expertise in a specific subject, by virtue of his/ her experience/ qualifications.

4. **Functions of Ground Instructor/ SME**

- a) To provide initial ground training, in aeronautical knowledge areas required for the issuance of a type rating/ flight dispatcher approval and/ or special operations approval.
- b) To provide recurrent ground training in aeronautical knowledge areas, as required for recurrent training of pilots, flight dispatchers and Ground Instructors.
- c) To provide ground training for LTC/ Check Pilot/SFI/TRI/TRE/ DE.
- d) To train ground instructors/SMEs.

5. **Eligibility / Qualifications**

5.1 To be eligible for issuance of the Ground Instructor's Approval, a person:-

- a) Shall be at least 21 years of age;

And

b) Shall be able to read, write, speak, and understand the English language;

And

C)

i. Shall be an engineering graduate or hold a graduate degree, with Physics and/or Mathematics from a recognized Board/ University;

Or

ii. Should have been a qualified pilot/flight navigator/flight engineer/flight dispatcher/ATCO, with minimum two (2) years of work experience in aviation;

Or

iii. Should have been an Aircraft Maintenance Engineer with a minimum of three (03) years of work experience as an AME.

5.2 For approval as a Subject Matter Expert (SME) a person must have a minimum experience of two (02) years in a specialized fields such as flying (Qualified pilot/ Flight navigator/ Flight Engineer), flight dispatch, ATC, meteorology or, have held prior approval as a Technical or Performance ground instructor.

Note: Training by SMEs shall meet the standards to be maintained under the quality assurance system of the operator.

6. Training Requirements for Approval as Ground Instructor/ SME

On fulfilling the eligibility requirements specified in Para 5 above, the trainee ground instructor shall undergo following training:-

6.1. Initial training.

Initial training would be modular, which shall be carried out by an approved Ground Instructor, of the Operator/ ATO/ GTO, or an approved ATO/ GTO of ICAO contracting state, or the OEM.

6.1.1 For approval as Ground Instructor (technical/ performance), the training shall be completed in the following modules:

Module 1, Consisting of General Aviation subjects, i.e. navigation, instruments, radio aids, Air-regulations, Basic knowledge of Aerodynamics, aircraft technical systems and basic aircraft performance. The syllabus would be divided into the following modules:

a) **Module 1A** - For a person with previous aviation background i.e. qualifications as per Para 5.1.C (ii), (iii)

The duration shall be a minimum of **24 Hours**.

b) **Module 1B**: For a person without prior aviation background i.e. qualifications as per Para 5.1c. (i).

The duration shall be a minimum of **120 hours**.

Contents of Module 1A/1B are defined at Appendix A.

MODULE 2

Technical	Performance
Specific aircraft technical systems to cover the aircraft systems description, limitations, normal and non-normal (abnormal / emergency) procedures. The minimum duration shall be as below:	Specific aircraft performance to include performance engineering aspects. The minimum duration shall be as below:
i) For Aircraft MTOW less than 5700 kg – 24 hrs ii) For Aircraft MTOW more than 5700 kg and less than 45360 Kg – 40 hrs. iii) For Aircraft MTOW more than 45360 kg – 72 hrs	i) For Aircraft MTOW less than 5700 kg – 18 Hrs ii) For Aircraft MTOW more than 5700 kg and less than 45360 Kg – 30 Hrs iii) For Aircraft MTOW more than 45360 kg – 48 Hrs
<p><u>NOTE: 1. GI training conducted by the OEM, will be as recommended by the OEM.</u></p> <p><u>2. CCQ credit, as given by the OEM, would be applicable to this module.</u></p> <p><u>3. For helicopter GIs, the minimum syllabus would be as recommended for the pilots, by the OEM,</u></p>	

6.1.1.1 At the end of each module, a written test shall be conducted to assess the trainee's knowledge, in order to progress to the next stage of training.

6.1.1.2 For previously approved and current GIs or SFI/TRI/Examiner, the following training would apply:

a) For approval on another type of aircraft, there shall be no requirement to undergo **Module 1 & 3.**

b) For addition of a variant of the same type of aircraft, the duration of the differences training shall be as per the operator's OM-D.

c) For a current Technical GI to become a Performance GI on the same aircraft type, and vice versa, **Module 1A** (comprising of basic aircraft technical systems for a Performance GI, and basic aircraft performance for a Technical GI, as applicable), and **Module 2** shall apply.

6.1.1.3 DEs/ TREs/ TRIs/ LTCs/ Check Pilots, or qualified pilots/ flight navigators from the military who have previously held the instructor/ Check pilot qualification, will not require to undergo **Module 3.**

6.1.1.4 A type-rated pilot who has exercised the privileges of his type-rating in the preceding five years, for approval as a Technical/ Performance GI, will only require to undergo only **Module 3**.

6.2 Ground Instructors, with or without previous approval, when joining a new operator/ ATO/ GTO, shall undergo a 2-day Operator familiarization Course, consisting of the Operations Manual/ Training and Procedures Manual, SOPs and Training Policies.

6.3 Module 3 (Trainers' course)

This is a one-time course of teaching and learning instructions for all GIs/ SMEs, comprising of minimum 40 hours training, to cover;

- (i) Learning process
- (ii) Teaching process
- (iii) Training philosophies
- (iv) Techniques of applied instruction
- (v) Student evaluation and testing
- (vi) Training programme development
- (vii) Training administration;
- (viii) Human performance and limitations

6.4 Module IV (as applicable)

Operational Training. Operational training, as applicable, shall be conducted by SMEs approved for the same, having undergone appropriate modular training of not less than the duration as mentioned below against each:

- (i) EDTO - **16** hrs
- (ii) PBN - **16** hrs
- (iii) Data link - **6** hrs
- (iv) ADS B – **2** hrs
- (v) EFB – **8** hrs
- (vi) NAT HLA – **16** hrs
- (vii) RVSM - **4** hrs
- (viii) HUD/ EVS – **12** hrs
- (ix) AWO- including Cold Weather ops (De-icing/Anti-icing), monsoon operations, LVO – **24** hrs
- (x) UPRT- **16** hrs
- (xi) *Special VFR- **12** hrs
- (xii) HUET- As per OPITO syllabus
- (xiii) Hill Ops- **12** hrs
- (xiv) Off Shore- **12** hrs
- (xv) ELO- **8** hrs
- (xvi) HHO- **8** hrs

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- (xvii) HEMS- Operations' specific
- (xviii) Specific Ground training- 12 hrs
- *TRE/TRI/FIR/ AFIR and IR rated pilots are not required to undergo Special VFR training, for qualifying as SME.

The training content of the SME's course would consist of latest regulations, and concepts extracted from relevant ICAO documents, which would form a part of the operator/ organization's OM-D/ Training and Procedures Manual.

Note:

1. For personnel holding a current approval as an SME on an aircraft, the training requirement would be reduced to 25% of that listed above, when extending the approval for another aircraft type, and/or on change of operator/ ATO/ GTO.
2. For any newly introduced operational topics which may be required to be covered by SMEs in the future, the Post Holder Training will seek permission from DGCA to grant the required authorization for the first SME.

6.5. Practical Training –

6.5.1 For Technical and/or Performance GI, as applicable, an observe and conduct of one full type rating course or one recurrent training course, under supervision of an approved ground instructor, depending upon whether technical or performance GI approval is sought.

NOTE: 1. In case of a new aircraft induction, only an experienced GI with at least 1 year of previous industry experience shall be considered. In cases where the same aircraft is not being operated by any other operator in the country, the observe session shall be conducted by the OEM/ ATO/ GTO.

2. In case full type rating course/Recurrent training is not being conducted by an operator/ ATO/GTO, the Post Holder Training may authorize equivalent simulated training.

6.5.2 For SME, one observe and conduct session under supervision of an approved SME for the relevant operational topic.

NOTE: For an operator which does not have existing infrastructure to meet the "observe-and-conduct" requirement, the same shall be accomplished through another operator/ ATO/ GTO.

6.5.3 For persons who qualify under para 5.1 c) (i), on completion of the observe and conduct, the following familiarization training shall be required:

- a) For Technical Instructor
 - i) Minimum 2 hours of training in a Training Device or aircraft for cockpit familiarization, and, one aircraft visit for exterior inspection of aircraft; and,
 - ii) Minimum 2 hours of training on a Simulator (FFS/FBS) or a

two sector flight on the type of aircraft on which the approval is sought, as an observer on the flight deck.

b) For Performance Instructor

i) Minimum one day training at Flight Dispatch under a Flight Dispatch Trainer for dispatch procedures/ contingency procedures/ crew communication; and,

ii) Minimum 2 hours on Full Flight Simulator or a two sector flight on the same type of aircraft, as an observer on the flight deck.

6.5.2 On satisfactory completion of the applicable training mentioned above, the applicant Ground Instructor will undergo an oral examination, as specified in para 7.

7. Oral Examination

The applicant Ground Instructor/SME shall be subjected to an oral examination by a board constituted by the Post Holder Training of the operator/organization. Oral examinations will be conducted separately for technical, performance, and SME. The Board shall include Post Holder Training or his nominee, CGI or his nominee and/or a relevant GI/SME, as applicable.

NOTE: In case of induction of a new aircraft, the oral exam for the first GI shall not be required.

8. Issue, Renewal, Withdrawal of Ground Instructor Approval

8.1 On successful completion of requirements as laid down in this CAR, the Post Holder Training shall issue approval to the Ground Instructor for a period of 5 years. Withdrawal and renewal of approval will be in accordance with the policy that is specified in the Operations Manual/Training and Procedures Manual. The policy shall include the method of training and qualification of ground instructors.

Standard format of the Approval Form is given at **Appendix B**.

8.2 DGCA may withdraw the approval of Ground Instructor/SME, if serious lapses are found in performance of his/her duties as a Ground Instructor/SME.

8.3 Change of Operator.

8.3.1 For approved and current ground instructors/SMEs when changing to an operator with the same aircraft type, the Post Holder training can issue

an approval on completion of 2 days of training of operator/ ATO/ GTO Operations Manual/ Training and Procedures' Manual and SOPs, followed by an oral examination as per Para 7.

8.3.2 If the applicant is not current, then additionally, the refresher training as in Para 9 below shall be applicable.

8.3.3 In case of change of aircraft, only Module 2, covering Technical or Performance, as relevant, shall be required.

9. **Recurrent training**

9.1 Recurrent training is conducted annually to ensure the maintenance of competencies, knowledge and skills through a series of theoretical training, hands-on exercises, written exam, etc. relevant to each aircraft type on which the ground instructor will be imparting training.

9.2 Recurrent training validity is 12 months. If carried out within 3 months preceding the expiry, the subsequent validity will be 12 months from the original expiry. The minimum duration of recurrent training shall be 16 hours for technical, and 12 hours for Performance, respectively. For SMEs, the minimum duration shall be 30 min for each operational subject.

9.3 In case another GI is not available, Post Holder Training may authorize a current TRI/DE/Examiner on type, to conduct recurrent training of a ground instructor.

10. **Refresher training**

An operator shall provide training in respect of each ground instructor who has not carried out any ground instructional duties for periods as applicable below:

- a. More than 12 months, up to 24 months

Extended Recurrent Training with minimum of 50% duration of Module 2.

- b. More than 24 months, upto 36 months

Extended recurrent training with minimum 50% duration of module 2 + Observe and Conduct of a Recurrent/ Type rating course.

- c. More than 36 months

Complete training as per Para 6 above will be required.

11. Records

- 11.1 The record of initial training, qualification and approval of a ground instructor/ Special Ops SME shall be maintained by the operator as long as the Ground Instructor remains in employment with the operator/ATO/GTO.
- 11.2 Individual training record of an approved Ground Instructor/ SME shall be maintained for a period of 5 years by the operator/ATO/GTO.

12. General Requirements

- 12.1 No operator/ATO/GTO shall use any person nor shall any person serve as a Ground Instructor/ SME unless that person has been approved in accordance with this CAR.
- 12.2 Post Holder training may utilize a Ground Instructor of equivalent status approved by any Contracting State to exercise functions as Ground Instructor, for the training of pilots/flight dispatchers. Such utilization may be made for a period not exceeding 6 consecutive months and as a one-time measure only.
- 12.3 The operator/ ATO/ GTO should ensure that all ground instructors undergo periodic training courses to continuously enhance their knowledge and to keep them abreast with latest industry best practices, and regulations.
- 12.4. An operator/organization shall appoint a Chief Ground Instructor (CGI), who shall be responsible for the supervision of all ground instructors and for the standardization of all theoretical knowledge instruction. The CGI shall function under the supervision of Post Holder Training. For operators/ organizations employing less than 5 ground instructors, the positions of HoT/CFI and CGI may be combined.

- 13. Approved and current ground instructors, on the date of issue of this CAR shall not be governed by the requirements of this CAR, and shall retain their approval without any further action required.

- 14. Approved Ground Instructors conducting special operations training as on date of issue of this CAR can be approved as SMEs by the Post Holder Training without any further training. The approval will lapse for all such

approved Ground Instructors, three months from the date of issue of this CAR.

15. Personnel currently undergoing training for qualification as a Ground instructor, shall not be required to meet the requirements of this CAR and shall be governed by the CAR applicable on their date of joining the operator/ATO/GTO. The operator/organization shall forward the particulars of such personnel to DGCA within one month from the date of issue of this CAR.

(Arun Kumar)
Director General of Civil Aviation

Appendix A

MODULE 1A

DUR: 24 hrs

For initial GI approval

- | | |
|---|--------|
| 1. General Aviation/Regulatory Bodies: | 4 hrs |
| a. ICAO/FAA/EASA/IATA etc. | |
| b. DGCA | |
| 2. Overview of Air Regulations: | 16 hrs |
| a. Aircraft Act 1934 | |
| b. Aircraft Rules 1937 | |
| c. Civil Aviation Requirements | |
| 3. Interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations. | 4 hrs |

OR

For transition of Technical/ Performance GI

Basic aircraft performance (takeoff and landing distances, rate of climb, ceiling, speed, payload, and fuel economy etc.)/ Technical general (including engines, airframe & avionics systems knowledge) 24 hrs

MODULE 1B

DUR: 120 Hrs

- | | |
|---|--------|
| 1. General Aviation/Regulatory Bodies: | 4 hrs |
| a. ICAO/FAA/EASA/IATA etc. | |
| b. DGCA | |
| 2. Overview of Air Regulations: | 16 hrs |
| a. Aircraft Act 1934 | |
| b. Aircraft Rules 1937 | |
| c. Civil Aviation Requirements | |
| 3. Interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations. | 8 hrs |
| 4. Basic Aviation Meteorology | 16 hrs |
| a. International Standard Atmosphere | |
| b. Meteorological Charts & Aviation Weather Reports | |
| c. Weather, Types of clouds, turbulence, thunderstorms etc. & avoidance techniques | |
| d. Pressure, Temperature, Winds and their impact on aviation | |
| 5. Basic Principles of Flight. | 8 hrs |
| 6. Basics of Navigation, Aircraft Instruments and Radio aids. | 16 hrs |
| 7. Jet Engine Fundamentals and Basics of Aircraft Systems | 16 hrs |
| 8. Basics of Aircraft Performance, including - | 16 hrs |
| a. Mass and Balance, Centre of gravity | |
| b. Effects of loading and mass distribution on aircraft performance | |
| 9. Human Factors and CRM | 16 hrs |
| 10. Aircraft documents, Checklist Philosophy, Accidents Analysis | 4 hrs |

Note: The contents may be modified based on the previous qualification and background of the trainee instructor.

APPENDIX B

GROUND INSTRUCTOR INITIAL APPROVAL

TRAINING FORM

1. **FULL NAME:** _____

2. **EDUCATIONAL QUALIFICATION:-** _____

3. **PROFESSIONAL QUALIFICATION:-** *QUALIFIED PILOT/FLIGHT NAVIGATOR/FLIGHT ENGINEER/FLIGHT DISPATCHER/ATCO/AME/ DGCA APPROVED INSTRUCTOR/ SFI/ TRI/ EXAMINER/ DESIGNATED EXAMINER;*

a. Details of Professional Qualification: _____

4. **AVIATION EXPERIENCE (IF ANY) :-**

5. MODULE 1 TRAINING RECORD

This is to certify that Mr/Ms _____ has successfully completed the Module1A/ Module 1B towards obtaining his/her approval as Ground Instructor.

a. **MODULE 1A (With Aviation Background)** *Duration 24 Hrs.*

Date of Training	From	To

b. **MODULE 1B (Without Aviation Background)** *Duration 120 Hrs*

Date of Training	From	To

Signature of CGI/Post Holder Training _____
Date: _____

6. MODULE 2 TRAINING RECORD (Technical / Performance)

This is to certify that Mr/Ms _____ has successfully completed the Module2 towards obtaining his/her approval as Ground Instructor

MODULE 2

Duration _____ Hrs.

Date of Training	From	To

Signature of CGI/Post Holder Training _____
 Date: _____

7. MODULE 3 TRAINING RECORD

This is to certify that Mr/Ms _____ has successfully completed the Module2 towards obtaining his/her approval as Ground Instructor

MODULE 3

Duration 40 Hrs.

Date of Training	From	To

Signature of CGI/Post Holder Training _____
 Date: _____

8. PRACTICAL TRAINING

i) This is to certify that Mr/Ms _____ has observed the _____ Aircraft Type Rating Course from _____ to _____

Signature of CGI/Post Holder Training _____
 Date: _____

ii) This _____ is _____ to _____ certify _____ that Mr/Ms _____ has conducted the _____ Aircraft Type Rating Course from _____ to _____ under observation of Approved Ground Instructor.

Signature of CGI/Post Holder Training _____
 Date: _____

iii) This _____ is _____ to _____ certify _____ that Mr/Ms _____ has observed the _____ Aircraft Recurrent Course from _____ to _____

Signature of CGI/Post Holder Training _____
 Date: _____

9. TECHNICAL INSTRUCTOR

This is to certify that Mr/Ms _____ has attended _____ hours of training in a Training Device / aircraft for cockpit familiarization on _____ and, aircraft visit for exterior inspection of aircraft on _____ and _____ hours of training on Full Flight Simulator on _____ / a two sector flight on _____ aircraft on _____ as an observer in the flight deck.

Signature of CGI/Post Holder Training _____
Date: _____

10. PERFORMANCE INSTRUCTOR

This is to certify that Mr/Ms _____ has attended one day training at Flight Dispatch on _____ under Mr/Ms _____ Flight Dispatch Trainer for dispatch procedures/ contingency procedures/ crew communication; and _____ 2 hours on Full Flight Simulator on _____ / a two sector flight on _____ aircraft as an observer on the flight deck.

Signature of CGI/Post Holder Training _____
Date: _____