



GOVERNMENT OF INDIA

OFFICE OF DIRECTOR GENERAL OF CIVIL AVIATION

TECHNICAL CENTRE, OPP SAFDARJANG AIRPORT, NEW DELHI

CIVIL AVIATION REQUIREMENTS

SECTION 2 - AIRWORTHINESS

SERIES 'L', PART I

ISSUE I, 20TH JANUARY 1992

EFFECTIVE: FORTHWITH

Subject: Issue of AME licenses, its classification and experience requirements.

1. INTRODUCTION :

Aircraft Rule 61 lays down the minimum qualifications and the experience requirements for issue of Aircraft Maintenance Engineer's licence in various categories.

However, to get the licence, the candidate has to pass the written and oral-cum-practical examinations conducted by the DGCA.

This part of the CARs details the experience requirements for the issue/addition/extension of licence in the various categories. It may be noted that the applicant may gain experience concurrently in the allied streams i.e., Mechanical or Avionics streams and such experience will be acceptable provided the applicant is able to establish that during the period he was actively engaged in the maintenance activities related to the category of the licence applied. The syllabi for the examinations has been published separately and is available as a priced publication from the Central Examination Organisation of the DGCA.

2. DEFINITIONS :

(i) Light Aircraft : means an aircraft with AUW below 5700 Kg.

(ii) Heavy Aircraft : means an aircraft with AUW of 5700 Kg and above.

(iii) Mechanical Stream : means the trades of airframe and engines.

(iv) Avionics stream : means the trades of electrical, instrument including autopilots, radio communication, navigation and radar systems.

(v) Concurrent Experience : means experience acquired simultaneously in two or more allied categories of the same stream.

(vi) Recent Experience : means experience acquired in the preceding 12 months.

(vii) ICAO Type II License : means a licence with the scope limited to minor maintenance, minor repairs, minor

modification, snag rectification and issue of flight release.

(viii) ICAO Type I License : means a licence with a scope covering overhaul, major modification, major repairs, testing and issue of certificate of maintenance after performance of the above tasks.

3. EXAMINATIONS :

The examination will normally consist of 4 written papers and an oral-cum-practical test. The questions in the written examinations will consist of multiple choice and essay types.

3.1 Paper I (General) will be related to the aircraft rules, regulations, Civil Aviation Requirements and duties and privileges of AME licence.

3.2 Paper II (General Engineering) will be related to general engineering, workshop practices, knowledge of drawings, elementary knowledge of electricity, theory of flight, power plants, instruments, computer terminologies and various hardware used in aircraft construction, aircraft materials and processes as detailed in the syllabus.

3.3 Paper III (Airframe) will be related to general knowledge of airframe structures and their construction and related systems, theory of flight, methods of repair, rectification of defects, weight and balance etc. as detailed in the syllabus.

Separate papers will be conducted for light and heavy aeroplane categories. For all helicopter irrespective of their AUW, Paper III (Airframe) shall be common.

3.4 Paper III (Engines) will be related to the theory of internal combustion engines and related systems, laws of thermodynamics, functions of various components of the engines, procedures of assessment of power of the engines, ground run procedures etc. as detailed in the syllabus.

Separate papers will be conducted for piston engines and jet engines.

3.5 Paper III (Electrical Systems) will be related to basic theory of AC and DC, logic circuits, principles of power generation, batteries etc. as detailed in the syllabus.

3.6 Paper III (Instrument Systems) will be related to basic theory, principles and functioning of instruments and instrument systems including autopilot as detailed

in the syllabus.

- 3.7 Paper III (Radio Systems) will be related to theory, principles and functioning of radio communication, navigation and radar systems used in aircraft as detailed in the syllabus.
- 3.8 Paper III (Overhaul of VP Propellers) will be related to general theory of propellers, construction and function of pitch change mechanism etc. and the knowledge of inspection, overhaul and testing of VP Propellers as detailed in the syllabus.
- 3.9 Paper III (Overhaul of Autopilots) will be related to general theory, principle and functions of autopilots and the knowledge of overhaul, inspection and testing of autopilots as detailed in the syllabus.
- 3.10 Paper III (Overhaul of Instruments) will be related to general theory, principles and functioning of instruments and knowledge of inspection, overhaul and testing procedures of instruments used in aircraft as detailed in the syllabus.
- 3.11 Paper III (Overhaul of Electrical Equipment including Ignition Apparatus) will be related to general theory, principle and functioning of electrical equipment, electrical system, overhaul procedures, inspection during major overhaul, repair and testing of electrical systems including ignition apparatus as detailed in the syllabus.
- 3.12 Paper III (Overhaul of radio equipment) will be related to general theory, principle and functioning of radio communication, navigation and radar system, overhaul procedures, inspection during major overhaul, repair and testing of communication, navigation and radar system as detailed in the syllabus.
- 3.13 Paper III (Installation and Compensation of DR Compass) will be related to basic theory of electricity and magnetism, various types of compasses and procedures of installation and compensation as detailed in the syllabus.
- 3.14 Paper III (Installation and Compensation of RR Compass) will be related to theory of electricity and magnetism, principles of construction of RR compass, procedures for installation and compensation of various types of RR compasses as detailed in the syllabus.
- 3.15 Paper IV will be related to specific type of aircraft, engine, electrical equipment, instruments and radio equipment fitted on a particular type of aircraft and engine. An applicant who has undergone approved training course may be exempted from this paper. Paper IV will not be conducted for aircraft notified separately depending upon their complexity and sophistication. At present, Boeing aircraft (all models), Airbus aircraft (all models) and their engines, electrical systems, instruments systems and Radio systems installed thereon. Applicants for endorsement of these

aircraft and their engines and systems shall be required to pass approved training course.

4. EXPERIENCE REQUIREMENTS

4.1 Category A (Light Aircraft)

The applicant will have to show a total aeronautical engineering experience of four years out of which 12 months must be on the type of aircraft for which type rating is desired and out of this experience, 3 months must be the recent experience.

Extension :

For extension in category 'A' to cover additional aircraft an applicant will have to gain additional experience of 6 months out of which, 3 months should be the recent experience. If the aircraft on which extension is desired is of similar construction, only three months total experience on the type will be required.

4.2 Category 'B' (Light Aircraft)

The applicant will have to show total aeronautical engineering experience of 4 years including the repair, overhaul, maintenance of aircraft. Out of this period he should have 12 months maintenance including major maintenance on airframes of similar construction and out of which six months must have been on the particular type of aircraft for which he is applying out of which three months must be the recent experience.

Extension

For extension in category 'B' to cover additional aircraft an applicant will have to gain additional 6 months of which 3 months must be recent experience.

4.3 Category 'A' (Heavy Aircraft)

Total aeronautical engineering experience of 4 years on the general maintenance/inspection and repair on the airframe and out of which 12 months must be practical maintenance and inspection on particular type of aircraft for which he has applied and three months must be recent.

Extension :

For extension in the category to include additional aircraft, an additional experience of 12 months will be required out of which 3 months shall be the recent experience.

4.4 Helicopters - Category 'A' & 'C'

- 4.4.1 An applicant applying for licence on helicopters of AUW below 3,000 kg. will have to show a total aeronautical engineering experience of four years both on airframe and engine simultaneously and out of which 12 months must be on a particular type of helicopter for which the applicant is applying and out of which six months must be the recent.

Extension :

For extension the applicant should show six months experience on the additional type of helicopter for which the extension is desired of which three months must be recent experience.

- 4.4.2 The applicant applying for helicopter of AUW more than 3,000 kg. can apply separately for category A & C and the total aeronautical engineering experience required for one particular category will be four years general aeronautical engineering experience out of which 12 months must be on the particular type of helicopter/engine and out of which six months must be recent on the airframe or the engines. This experience can be gained concurrently and an applicant can apply for both Category A & C after gaining four years experience.

Extension

For extension in Cat. A or C to cover additional type of helicopter with AUW exceeding 5700 kg., an applicant shall possess a minimum of three months maintenance experience in appropriate Category on type of Helicopter or six months maintenance experience on the type helicopter and its engine in case the extension of the licence is desired to include both categories A and C.

4.5 Category 'B' - Light Helicopters (below 3000 Kg. AUW)

The applicant should have a total of 4 years aeronautical engineering experience in maintenance, repair, overhaul of helicopter/light aircraft out of which 18 months must be on the repair, overhaul, major modification of helicopters for which the applicant is applying out of which 6 months should be on specific type.

Extension :

For extension additional experience of six months on helicopter applied for shall be required out of which three

months must be recent experience.

4.6 Gliders - Category 'A'

The applicant will have to show general aeronautical engineering experience of two years in maintenance, minor repair, snag rectification of gliders including wooden/metal gliders out of which six months must be on the particular type of the glider.

Extension :

For extension in licence to cover additional type of glider the applicant should have at least six months experience on the type out of which at least three months must be recent experience.

Persons having valid AME licence covering aircraft below 5,700 Kg. may have three months recent experience on type of glider on which extension is desired.

4.7 Gliders - Category 'B'

To obtain category B licence the applicant will have to show a total aeronautical engineering experience of 3 years including maintenance, overhaul, repair, modification of wooden gliders/metal gliders, fabrication of cables, rigging of controls etc. out of which 12 months must be on major maintenance/overhaul of glider of similar construction out of which 6 months must be on the particular type applied for of which 3 months must be recent experience. If an applicant has 'B' licence on light aircraft, the applicant may be required to take an oral-cum-practical examination after 6 months experience on the Type. For repair of fibreglass/composite material structure, special training will be required with the prior approval of DGCA.

Extension :

For extension in category 'B' on gliders the applicant will have 6 months experience on the type out of which at least 3 months will be the recent experience.

Persons having valid AME licenses in category 'B' may have 3 months recent experience on the type of glider on which extension is desired.

4.8 Category C (Piston Engine) :

Total aeronautical engineering experience required will be 4 years out of which 12 months experience must be in the maintenance of piston engines out of which six months must be on the type of engine applied for and out of which three months must be the recent experience.

Extension :

For extension of licence to cover additional piston engines the applicant must have six months experience on the type of engine applied for. If the licence is already valid in category C for a similar type of engine of similar construction, then only three months experience will be required.

4.9 Category C (Gas Turbine Engine) :

Total aeronautical engineering experience required is 4 years which must include 24 months experience on general maintenance and inspection of Gas Turbine Engines out of which 12 months must be on the type of engine applied for out of which 3 months must be the recent experience.

Extension :

For extension of licence to cover category 'C' (Turbine engine), the candidate should have 12 months experience on type of which 3 months should be recent experience.

4.10 Category D

For overhaul of Piston engine below 500 BHP the applicant must have general aeronautical engineering experience of 4 years including overhaul/repair/maintenance of piston engine out of which 24 months must be on the major maintenance/repair/modification of engine of similar construction out of which 12 months must be on the particular type of engine out of which 6 months must be the recent experience.

Extension :

For extension in Cat. D, 12 months experience on Type of engine will be required out of which 6 months will be recent experience.

4.11 Category E (Electrical System) :

The applicant for Category E to cover electrical systems installed on heavy aircraft will be required to have 4 years general avionics engineering experience out of which 12 months experience must be on the maintenance, snag rectification and carrying out replacement of electrical equipment and minor servicing on the specific type aircraft out of which three months must be recent experience.

Extension :

For extension in category 'E', applicant will be required to have 6 months experience on the type of aircraft out of

which 3 months must be recent experience.

4.12 Category 'I' (Instruments) :

The applicant for instrument system of heavy aircraft will have 4 years experience of general avionics engineering including a minimum of 12 months experience on maintenance, snag rectification, replacement of instruments on specific type of aircraft out of which 3 months must be recent experience.

Extension

For extension in category 'I', applicant will be required to have 6 months experience on the type of aircraft out of which 3 months must be recent experience.

4.13 Category 'R' (Radio Communication, Navigation & Radar) :

The applicant must have a total of 4 years avionics engineering experience on maintenance and repair out of which 12 months must be on the maintenance, minor repair, testing, snag rectification, installation and removal of radio communication, navigational and radar equipment installed on the specific type aircraft applied for, out of which 3 months must be the recent experience.

Extension

For extension in category 'R', applicant will be required to have 6 months experience on the type of aircraft out of which 3 months must be recent experience.

Note: For issue of AME licence in Category 'R', the candidate must possesses RTR (Aero) licence issued by Ministry of Communication at the time of oral cum practical test.

4.14 Addition in categories 'E', 'I' & 'R'

Persons having acquired licence in any one of the categories of E, I and R will require additional experience of one year to qualify for additional category and a person having 2 categories will require 6 months to qualify for the third.

4.15 Category 'V' (Avionics)

This category of licence will cover avionics system of highly sophisticated aircraft with fly-by-wire technology and where there cannot be a clear demarcation between instrument, electrical and radio systems. The applicant should have licence in Category E, I and R OR possess BAMEC in Category of Electrical System (ES), Instrument System (IS) and Radio Navigation System (RN) and should have successfully undergone an approved training course on Integrated Avionics Systems. Thereafter the candidate will

be subjected to oral cum practical test for issue of the licence. At present such licences will be issued to cover A320 aircraft. However request for issue of such licence to cover the other sophisticated aircraft incorporating comparable technology may also be considered.

Extension

For extension in Category 'V', applicant will be required to have 6 months experience on the type of aircraft out of which 3 months must be recent experience.

Note: For issue of AME licence in Category 'V', the candidate must possesses RTR (Aero) licence issued by Ministry of Communication at the time of oral cum practical test.

4.16 Category 'X' (Overhaul of Autopilots installed on light aircraft) :

The applicant for Category X licence to certify autopilots will be required to have the general avionics engineering experience of 4 years out of which 12 months must have been on the maintenance, overhaul, repair of instruments, autopilots and other allied components and out of which six months must be recent on the overhaul of particular type of autopilot, its testing, modification, installation and operational test.

Extension

For extension of licence to cover additional type of autopilot the applicant must have experience in overhaul, testing, modification, repair for six months on the type of autopilot out of which 3 months shall be recent experience.

4.17 Category 'X' (Overhaul of Electrical System and components on light aircraft):

The applicant should have general avionics engineering experience of 4 years in respect of overhaul/repair, modification, testing of electrical components and system as installed on aircraft out of which 12 months must be on the overhaul/ repair and testing of electrical equipment fitted on light aircraft out of which six months must be the recent experience. This licence will be open and will cover all light aircraft unless mentioned otherwise.

4.18 Category 'X' (Overhaul of Instrument system installed on light aircraft):

The applicant will have general avionics engineering experience of 4 years in the maintenance, repair overhaul, testing, modification of instruments installed on light aircraft and engines installed thereon out of which 12 months experience must be on maintenance, repair, overhaul, testing, snag rectification on light aircraft and of which three months must be recent experience. This licence will be open and will cover instruments installed on all light aircraft unless mentioned otherwise.

4.19 Category 'X' (Overhaul of Radio equipment installed on light aircraft) :

The applicant must have a total of 4 years avionics engineering experience on the maintenance, overhaul/repair out of which 12 months must be on the overhaul, testing, bench test, snag rectification & major modification etc. of radio communication, navigation and radar equipment installed on the type aircraft applied for, out of which six months must be recent experience.

Extension

For extension in category 'X', applicant will be required to have 6 months experience on the type of aircraft out of which 3 months must be recent experience.

4.20 Category 'X' (Overhaul of VP Propellers installed on light aircraft) :

The applicant should have general aeronautical engineering experience of 4 years in respect of overhaul/repair, modification of VP propellers and at least 12 months must be on the maintenance/repair of propellers and out of which either 6 months must be on the overhaul/repair of the type of propellers applied for or overhaul of 3 propellers.

- 4.21 Note : An applicant may be allowed to appear for Paper I & II of AME licence examination after he/she has acquired atleast 2 years of Aeronautical Engineering Experience. He/She may appear for Paper III after acquiring 3 years of aeronautical engineering experience on the relevant category. The applicant will be permitted to appear for Paper IV (specific)/ approved course only after he/she has passed Paper I, II and III and has acquired 4 years of aeronautical engineering experience.

5. ISSUE OF AME LICENCE

After passing Paper I, II, III, IV and oral cum practical test, the candidate will be issued with an AME licence in the relevant category. For issuance of the same the applicant is required to submit an application in the enclosed proforma (Appendix 'A') to Director General of Civil Aviation Attn. Director of Airworthiness, Headquarters together with the requisite fee, Medical fitness/colour vision Certificate (Appendix 'B').

6. ENDORSEMENT OF AME LICENCE

6.1 Category 'A', 'B', 'C', 'D', 'E', and 'I'.

AME licence in the above Category will be endorsed according

to the type of aircraft/ engine.

6.2 Category 'R'

6.2.1 The licence in Category R pertaining to heavy aircraft will be endorsed as follows:

"Valid for Communication/ Navigation/ Radar system installed on the undermentioned aircraft." -- Beneath this title the type of aircraft, the radio equipment of which the holder is authorised to certify will be listed. Licences so endorsed will deem to cover all the communication/ navigation/ radar equipment as mentioned in the relevant maintenance manual/ type certification data sheet of the aircraft.

6.2.2 The licence in Category 'R' pertaining to light aircraft will be endorsed as follows:

HF, VHF, ADF, VOR, ILS, VLF/Omega, DME, Weather Radar, etc. on particular type of aircraft.

6.2.3 In case AME in Cat. R seeks extension on his licence to cover additional type of aircraft having radio equipment identical to that installed on a type of aircraft already endorsed on his licence, such extension will be endorsed by the Regional Airworthiness Office without subjecting the candidate to any test, On receiving the application from the candidate furnishing the information that the type of aircraft asked for has radio equipment identical to that installed on the type of aircraft already endorsed on the licence, the extension will be endorsed by the Regional Airworthiness Office only after verifying the information furnished in the application and duly intimate to DGCA about such endorsement. Such endorsement will not involve any fee.

6.2.4 In case applicant seeks extension on his licence in Cat. R and/or Cat X (Radio Equipment) to cover additional type of aircraft would be considered for exemption from oral cum practical test depending on the similarity of radio equipment installed on the type of aircraft for which application is made vis a vis the radio equipment installed on the type of aircraft already endorsed in the relevant category.

NOTE: 1. Airborne Communication System includes VHF, HF, Voice Recorder and Audio Equipment.

2. Airborne Navigation System includes ADF, VOR, ILS, VLF/ Omega and CW Hyperbolic equipment.

3. Airborne Radar System includes Weather Radar, DME, Radio Altimeter and ATC Transponder equipment.

6.3 Category 'V'

The licence at present will be endorsed to cover A320 aircraft. However request for issue of such licence to cover the other sophisticated aircraft incorporating comparable technology may also be considered.

6.4 Category 'X' (Overhaul of Autopilot/ Electrical system/ Instrument system/ VP Propeller installed on light aircraft)

The licence will be endorsed according to the type of system installed on a particular type of aircraft.

6.5 Category 'X' (Overhaul of Radio Equipment)

The licence will be endorsed mentioning the main equipment like HF, VHF, ADF, VOR, ILS, VLF/Omega, DME, Weather Radar, etc. on particular type of aircraft.

Note: As and when an item of equipment is replaced by a type/ model of equipment (as approved by the manufacturer or by DGCA) different from the one mentioned in the maintenance manual/ type certification data sheet on particular type of aircraft, the AME having endorsement in the licence for the type of aircraft shall have to pass examination covering the new equipment before he exercises his certification privileges. In case the new equipment is already covered by him on different type of aircraft, the new equipment could be endorsed on the type of aircraft on which the equipment is being replaced.

7. So far as certification of ignition apparatus of light aircraft is concerned, the installation etc. can be done by either the 'C' licence engineers or 'X' licence engineer holding electrical licence. No separate category of licence for ignition apparatus will be issued. However, the overhaul of ignition equipment will be certified by the 'X' licence engineers holding electrical licence.

Note: For AME licence holders in Category 'X' to cover Ignition Apparatus issued prior to the revised Aircraft Rule 61 published vide GSR No. 196 (E) dated 1st April '1991, will be endorsed in the new format with a note :- "Also valid for Ignition Apparatus."

8. Certification of Aircraft Compass

8.1 The Remote reading Compass for which so far separate licence was issued will be certified by persons having category 'I' or 'R' covering instruments systems or radio equipment and having passed Paper III to cover the RR compass system and an oral-cum-practical check.

For this the candidate should acquire the following

experience: 4 compensations and installations of RR compass on aircraft.

- 8.2 The Direct Reading Compass, for which so far separate licenses were issued, may be certified by persons holding any category of AME licence provided the candidate passes the Paper III on DR compass system and an oral cum practical check.

For this the candidate should acquire the following experience :

6 checks on synthetic aids and 4 installations and compensations of DR compass on aircraft, or;

total 6 installations and compensations of DR compass on aircraft.

Note: For AME licence holders in Category 'X' to cover RR/DR Compass issued prior to the revised Aircraft Rule 61 published vide GSR No. 196 (E) dated 1st April '1991, will be endorsed in the new format with a note :- "Also valid for RR/DR Compass."

Note 1: The licenses in categories 'A', 'C', 'E', 'I' and 'R' conform to ICAO Type II licenses and licenses in categories 'B', 'D' and 'X' conform to ICAO Type I licence. This licensing system conforms to revised rule 61 published vide GSR No. 196(E) dated 1/4/91.

Note 2: Where evidence of approved training, guided practical training and full time on the job training is produced, the experience requirements for issue/extension can be relaxed for individual operator and such procedure shall be included in operator's Quality Control Manual/Training Manual.

Note 3: DGCA may also grant AME licences in Category 'E' and 'I' for certification of electrical and instrument systems installed on light aircraft if the complexity and sophistication of these systems so requires. The experience requirement will be the same as that applicable to heavy aircraft.

Note 4: Depending on the sophistication of aircraft and its systems, candidates appearing for Category 'A' on pressurised aircraft even though not exceeding 5700 kg AUW will be given Heavy Aircraft (HA) paper.

Sd/-
(S. L. Srivastava)
Deputy Director General of Civil Aviation

APPENDIX 'A'

**PROFORMA FOR
INITIAL ISSUE OF AIRCRAFT MAINTENANCE ENGINEERS LICENCE**

1. Name in full: _____

2. Nationality : _____

3. Date of Birth : _____

4. Place of Birth : _____ Dist/State _____

5. Educational Qualification : _____

6. Permanant Address : _____

7. Present Address : _____

8. Details of Licence Examination passed: Roll No. _____
Session: Feb' ____ / June ' ____ / October ' ____
Category: _____

9. Details of fees :

Draft/ Postal Order No. _____ dated _____
(Aircraft Rule 62)

Dated _____

Signature of the applicant

Enclosures:

Note: 1. Certified true copies for Sr.No. 3, 5 and 8 should be attached.

2. Medical Certificate in the prescribed form should be attached.

OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION
EAST BLOCK II & III, R K PURAM, NEW DELHI-110066.

(To be given by Registered Medical Practitioner holding atleast MBBS)

M E D I C A L C E R T I F I C A T E

Mr/ Ms _____ whose signature is given
below, has been medically examined by me.

He/ She has * the following physical disabilities

* no physical disabilities

Signature of the
Applicant

Signature of Doctor _____

Designation : _____

Registration No. _____

Date : _____

M E D I C A L C E R T I F I C A T E F O R C O U L O U R V I S I O N

I, Dr. _____ hereby certify that I have examined
Mr/Ms _____ whose signature is appended
below, and certify that his colour vision is Normal/ Defective safe/ Defective unsafe.
(Strike off which is not applicable).

The colour vision has been tested with :-

(1) Pseudo - Isochromatic plates

(2) Approved Lantern test

(3) Any other test applicable

(Strike off which is not applicable).

Signature of the
Applicant

Signature of Doctor _____

Designation : _____

Registration No. _____

Date : _____