AAC No. 4 of 2017
Dated 10 July 2017
Rev. 1, 12th February 2019

GOVERNMENT OF INDIA
CIVIL AVIATION DEPARTMENT
DIRECTOR GENERAL OF CIVIL AVIATION

AIRWORTHINESS ADVISORY CIRCULAR

F. No. 5-2566/2017-AI(2)

Subject: Endorsement with Type Rating - CAR-66 Aircraft Maintenance Engineers Licence.

1. **Introduction:**

1.1 The CAR 66 establishes the eligibility, training, examination, knowledge, and experience requirements for the issue and extension of an aircraft maintenance engineer's license, conditions of its validity and use. Further, CAR 66. A.45 (c) requires satisfactory completion of the corresponding On the Job Training (OJT), as described in Appendix III to CAR-66 for the endorsement of the first aircraft type rating within a given category/sub-category.

1.2 This circular explains the procedures and guidelines to be followed by Approved Maintenance Organisation to provide OJT to the personnel engaged in the maintenance of the aircraft required to meet one of the criteria for the issue of licence.

1.3 The "CAR 66 Aircraft Maintenance Engineer's Licence Guidance Document" attached as **Appendix-A** explains the requirements for obtaining CAR 66 AME licence issued by DGCA, procedures for documentation of OJT tasks and maintenance of OJT records.

1.4 It should be noted that this circular and the attached document is for guidance only and the main reference points such as CAR-66, Airworthiness Advisory Circulars and DGCA web sites, should always be referred to obtain latest requirements related to CAR 66 Aircraft Maintenance Engineer Licence.

1.5 It is important to note that this circular on its own does not change, create, amend or permit deviations from regulatory requirements, nor does it establish minimum standards.

2. **On the Job Training (OJT):**

2.1 Para 6 of Appendix III to CAR-66 requires that OJT be approved by the DGCA and it required to be conducted at and under the control of a maintenance organisation

appropriately approved for the maintenance of the particular aircraft type and to be assessed by appropriately qualified and designated assessors.

2.2 Objective**:** The objective of OJT is to gain the required competence and experience in performing safe maintenance.

2.3 **Content:** OJT is required to cover a cross section of tasks as given in Appendix-II to AMC to CAR-66 and acceptable to the DGCA. The OJT tasks is required to be representative cross section of the aircraft and systems both in complexity and in the technical input required to complete that task. While relatively simple tasks may be included, other more complex maintenance tasks should also be incorporated and undertaken as appropriate to the aircraft type. Each task are required to be signed off by the student and countersigned by a designated supervisor. The tasks listed should refer to an actual job card/ work sheet, etc. It should have been started and completed within the 3 years preceding the application for a type rating endorsement

2.4 The final assessment of the completed OJT is mandatory and required to be performed by a designated assessor appropriately qualified.

3 Documentation of On the Job Training Programme :

3.4 The approved maintenance organisation should detail the procedures in their MOE (Part-3, Chapter 3.14 to 3.16), which should address the following:-

a) procedures for on-the job training as per Section 6 of Appendix-III to CAR 66;

a) competence assessment of personnel;

b) procedure for the issue of the recommendation to DGCA for the issue of a CAR 66 licence;

c) Qualification and experience requirement of OJT Supervisor and Assessors;

d) Procedures for documentation of OJT.

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4 OJT Supervisor / OJT Assessors.

4.1 The OJT supervisor and OJT assessor are required to be designated by the AMO and accepted by DGCA.

4.2 **OJT Supervisor –** The following minimum qualification and experience is recommended for acceptance by DGCA ;

a) Type rated AME holding full scope authorization in applicable category (B1/B2) on applicable aircraft.

b) Minimum 3 years of maintenance certification experience on applicable family of aircraft.

c) Should be competent to perform the function.

4.3 **OJT Assessors** :- The following qualification is recommended for the OJT Assessors;

a) Type rated AME holding full scope authorization in applicable category (B1/B2) on applicable aircraft.

b) Minimum 5 years of maintenance certification experience on applicable family of aircraft.

c) Should be competent to perform the function.

4.4 The Practical Assessor and OJT Assessor may be same person for assessment of Practical element as well as OJT elements for the organization holding MTO as well as AMO approvals.

4.5 Depending upon the size of the organization, the position of OJT Supervisor and OJT assessor may be same person.

5 **Approval of OJT Programme**

5.2 The maintenance organisation desirous of providing on the job training to the prospective candidates, should include procedure in details, in their exposition as specified in the para 3 above and submit the same to the Regional Airworthiness Office for approval. The proposal should also include the list of nominated OJT supervisors and assessors in accordance with Para 4 above along with their credentials

5.3 Upon receipt of the proposed amendment to MOE, the RAO may evaluate the proposal and if found satisfactory, should approve the amendments to MOE. The approval of amendment of MOE should be intimated in writing to the AMO.

5.4 The following items need to be evaluated by RAO before accepting the proposal:

a) Adequacy of the proposal with regard to resources available with the AMO.

b) The task defined are as per the appendix III to AMC of CAR 66 applicable to the specific type of aircraft.

c) Procedure for issue of work order for specific on job training task is clearly documented by AMO.

d) Qualifications and experience of OJT supervisors and OJT assessors are clearly defined and the proposed personnel should meet the requirements.

e) Responsibility for record keeping and maintenance of AME log book is clearly documented.

5.5 The RAO may accept the proposed OJT Supervisor and OJT Assessors if he/she meeting the essential qualification and experience requirements and is considered competent to function as supervisor/ assessor as applicable. Further guidance on the assessment and assessor is detailed in Appendix-III to AMC of CAR 66.

6 Recording of On Job Training Tasks

6.2 The approved maintenance organisation should ensure that every trainee should maintain an OJT booklet. A Sample format of OJT booklet is provided in Appendix-D of Chapter -9 of the Attached Document.

6.3 The OJT booklet should cover all representative tasks under ATA chapters, as reflected in Appendix II to AMC to CAR 66 covering type of aircraft such as Piston Engine/ Turbo Prop/ Turbofan/ Rotary wing aircraft as relevant. For endorsement with type rating, the candidate is required to complete at least 50% of the approved OJT syllabus for the applicable aircraft.

6.4 The following data should be addressed on the OJT worksheets/ logbook:

a. Name of Trainee;
b. Date of Birth;
c. Approved Maintenance Organisation;
d. Location;
e. Name of supervisor(s) and assessor, (including licence number if applicable);
f. Date of task completion;
g. Description of task and job card/work order/tech log, etc.;
h. Aircraft type and aircraft registration;
i. Aircraft rating applied for.

6.5 In order to facilitate the verification by the DGCA, demonstration of the OJT shall consist of i) detailed worksheets/logbook and (ii) a compliance report demonstrating how the OJT meets the requirement of CAR-66.

6.6 Each AMO should customize this OJT booklet applicable to the scope of maintenance tasks on their fleet of aircraft.

6.7 In case of first AME licence endorsement type rating within a given category/ sub-category, this OJT booklet should serve as a compact and portable reference document, which would reflect the completion of the candidate's on job training, as applicable. This OJT booklet should be constructed in a way to guide the candidate to gain minimum relevant basic practical maintenance experience that represents a cross section of maintenance activities in applicable ATA chapters.

6.8 For endorsement of additional aircraft in same category the requirement of OJT will depend on the training need analysis. For endorsement of aircraft in additional category / sub category requires completion of On Job Training.

7 Accomplishment of On the Job Training Programme:

7.2 The AMO should clearly identify a nodal post holder who will be responsible for overall execution of the OJT Plan. The nodal post holder may be training manager/ base maintenance manager/ line maintenance manager or another person specifically designated for such role. The nodal post holder should make complete plan of OJT before the start of same of trainee and assign the OJT

Supervisor and Assessor. The nodal officer should monitor the progress of the on job training.

7.3 The OJT should include one-to-one supervision and should involve actual work task performance on aircraft/ components, covering line and/or base maintenance tasks.

7.4 The OJT for applicable task (ATA Chapter wise) on the aircraft should be completed by the trainee, under OJT Supervisor. Each OJT task is required to be completed and signed by the trainee and OJT supervisor.

7.5 In case of non-availability of adequately qualified OJT Supervisor / Assessors the OJT programme may be sub contracted to another appropriately approved maintenance organisation with prior approval of DGCA.

7.6 After completion of OJT, the candidate should submit the completed OJT booklet to OJT Assessor. The OJT assessor will scrutinize to ensure the following:

a) The candidate has completed the applicable OJT tasks.

b) The tasks have been signed by the candidate as well as the OJT supervisor.

c) For the purpose of independent assessment, the trainee should carry out at least two core task randomly selected by the assessor, under the supervision of the assessor. The assessment may be carried out for the trainees as per the following weightage.

i. Adherence to the Warning and Cautions (weightage-10%)
ii. Performance of the two selected core tasks (B1/ B2) proficiently (weightage-70%)
iii. Use of Aircraft Maintenance Data, Documentation and completion of records (weightage-20%)

7.7 The OJT assessor will declare the candidate as pass, in case he/she has scored minimum 75% marks. The result will be recorded in the Assessment Sheet at the end of the OJT booklet.

7.8 In case the candidate has been declared as “Fail”, the OJT Assessor will identify the additional OJT task that need to be completed by the candidate before his re-assessment.

7.9 The successful candidates should submit the copy of OJT booklet and assessment result while submitting their application in DGCA for issue/ endorsement on AME licence, as applicable, through Quality Manager.

8 **Routine Audits by AMO:**

8.2 The Quality Manager of approved maintenance organisation should develop

procedure to carry out periodical planned and unplanned audit to ensure proper implementation of the above procedures.

8.3 A report should be raised each time an audit is carried out describing what was checked and the resulting findings against applicable requirements, procedures etc.

8.4 If any finding of serious nature (Level-1) is detected during the routine audits, the same should be intimated to the concerned RAO immediately. The responsible manager should take appropriate action to mitigate the finding. The root cause analysis along with the measures taken to prevent such finding in future should be intimated in writing by Quality Manager to RAO.

8.5 In case there is any violation of the approved procedures, the Quality Manager is required to investigate the same and take necessary action under intimation to RAO.

9 **Oversight by DGCA:**

9.2 The respective Regional/ Sub-regional Airworthiness office will carry out planned and unplanned surveillance inspection to ensure proper implementation of the OJT procedures including functioning of OJT Supervisor and OJT Assessors.

9.3 A report should be raised each time an audit is carried out describing what was checked and the resulting findings against applicable requirements, procedures and products.

9.4 In case there is any violation of the approved procedures, the RAO should investigate the same and take necessary action as per the procedure detailed in the Enforcement Policy and Procedure manual against Nodal post holder, OJT Supervisors, OJT Assessors and the organisation responsible for the compliance of OJT plan as appropriate.

10 **Maintenance of Records :**

The RAO should maintain the records related to approval of MOE and documents related to Aircraft Maintenance Engineers and oversight of the organisation.

Sd/-
(K P Srivastava)
Deputy Director General of Civil Aviation
For Director General of Civil Aviation

Appendix -A

GOVERNMENT OF INDIA

OFFICE OF

THE DIRECTOR GENERAL OF CIVIL AVIATION

THE CAR 66 AIRCRAFT MAINTENANCE ENGINEER'S LICENSING

GUIDANCE DOCUMENT

Revision 1 February 2019

PREFACE

The CAR 66 Aircraft Maintenance Engineer's Licensing Guidance Document has been designed to assist Aircraft Maintenance Engineer's and those involved with aircraft maintenance engineering by providing detailed guidance to existing Aircraft Maintenance Engineering Licensing requirements.

This document includes details on the implementation of CAR-66, the conversion of Section 2, Series L, licences to CAR-66 and details on the addition of type ratings to an existing licence.

It should be noted that this document is for guidance only and the main reference points such as Aircraft Rules, CAR-66, and DGCA web sites for application forms etc. shall always be referred to obtain latest requirements related to CAR 66 Aircraft Maintenance Engineer Licence.

Sd-

(K.P. Srivastava)
Deputy Director General
10th July 2017

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CHAPTER 1

GENERAL INFORMATION

CHAPTER 1

GENERAL INFORMATION

1.1 INTRODUCTION

The Directorate General of Civil Aviation (DGCA) is Competent Authority for the purposes of formulating regulation and guidance document to be used by the personnel engaged in the field of civil aviation. It includes Regulation on the continuing airworthiness of aircraft and aeronautical products, parts and appliances and on the approval of organisations and personnel involved in these tasks.

This guidance document explains the procedures and guidelines to obtain CAR 66 AME licence issued by the DGCA. This document also explain the procedure to be followed by the approved maintenance organisation to provide on job training to the personnel engaged in the maintenance of the aircraft required to meet one of the criteria for the issue of licence.

1.2 TRANSITION TO CAR 66

In order to harmonize Indian requirements for licensing of aircraft maintenance engineers with international standard; CAR-66 Rev.0 dated 11th November 2011 was introduced. This CAR is issued on the basis of amended Rule 61 (6th amendment) of the Aircraft Rules, 1937 as notified vide GSR 1001(E) dated 22nd December 2010.

The CAR-66 is applicable to all personnel / Organizations engaged in maintenance and/or certification of aircraft registered in India. It establishes the training, examination, knowledge and experience requirements for the issue and extension of an aircraft maintenance engineer's license, conditions of its validity and use.

It also has a provision for converting the valid aircraft maintenance engineer's (AME) license issued prior to the CAR-66 coming into force. Further information is available on our web site *www.dgca.nic.in/ftppub/CAR_66.pdf*.

1.3 REQUIREMENT TO HOLD A LICENCE UNDER CAR-66

In order to be granted authorisation to issue certificates of release to service by CAR 145 / CAR M Subpart F approved organisation, a person must hold a valid licence issued in accordance with CAR-66. The applicant must have passed 10+2 examination in Physics, Chemistry and Mathematics from a recognized board or university or its equivalent. The minimum age to hold a CAR-66 licence is at least 18 years.

1.4 HOW TO BE AN AIRCRAFT MAINTENANCE ENGINEER UNDER CAR-66

A CAR-66 aircraft maintenance licence confirms that the person to whom it refers has met the CAR-66 knowledge and experience requirements for any aircraft basic category and aircraft type rating specified in the document.

The licence is divided broadly between Mechanical and Avionic trade disciplines although in view of the various technologies and combinations applicable to certain aircraft, the Mechanical licence category is further subdivided. In addition there are various levels within the licence that allow the holder to be authorised to perform certain roles within line and/or base maintenance. These reflect different levels of task complexity and are supported by different standards of experience and knowledge. An individual may hold a combination of licence categories

The Aircraft Maintenance Engineer Licence is issued in the following categories:

Category A
Category B1
Category B2
Category B3
Category C

Licences other than Category A is endorsed with the type of aircraft, the holder is entitled to exercise the privileges upon.

1.4.1 Category A

Category A is further divided into sub categories as follows:

A1 Aeroplanes Turbine
A2 Aeroplanes Piston
A3 Helicopters Turbine
A4 Helicopters Piston

The experience demonstrated on application must be relevant to the sub category of licence being applied for and must satisfy certain criteria in respect of recency of experience. For further information on Category A please refer to Chapter 3 of this document.

1.4.2 Category B

The sub categories for Category B AME licence are:

B1.1 Aeroplanes Turbine

B1.2 Aeroplanes Piston

B1.3 Helicopters Turbine

B1.4 Helicopters Piston

B2 Avionics (no further sub division)

B3 Piston-engine non-pressurised aeroplanes of 2000 kg MTOM and below

The wider privileges of the Category B licence and the role of the AME in defect diagnosis and rectification and system inspection require a more detailed knowledge than that for Category A. This requires a longer period of experience and examination at a higher level than for Category A. For further information on Category B1 please refer to Chapter 4. For further information on Category B2 please refer to Chapter 5.

1.4.3 Category C

The Category C can be issued to a B1 or B2 licence holder with a prescribed period of certifying experience. For further information on Category C please refer to Chapter 7.

1.4.4 Knowledge Requirements and Examinations

An applicant for an aircraft maintenance engineer's licence is required to demonstrate by examination, a level of knowledge in the appropriate subject modules. The basic knowledge examinations are conducted by Central Examination Organization of DGCA. The content of the examinations vary both in range and complexity according to the licence category being sought.

The training courses and examinations are required to be passed within 10 years prior to the application for an aircraft maintenance licence or the addition of a category or subcategory to such aircraft maintenance licence.

For further information please refer to the relevant licence Section in this document and also to Chapter 10.

1.5 MEDICAL

The holder of AME's Licence must not exercise the privileges of the licence and related ratings at any time when he/she is aware of any decrease in medical fitness which might render him/her unable to safely and properly exercise these privileges.

1.6 PROOF OF IDENTITY

For all CAR-66 initial issue applications, proof of identity and date of birth is required. For proof of identity, any photo identity card issued by the Government will be accepted. In all cases, if the personal details provided on the licence application form conflicts with the evidence of identity the application will be returned to the applicant without assessment.

1.7 PRIVILEGES

The Certifications are made in accordance with the procedures of the CAR-145 or CAR-M approved maintenance organisations, within the scope of the issued authorisation(s). Certifying staff qualified in accordance with CAR-66 and holding a valid aircraft maintenance licence with, where applicable, the appropriate type ratings will be eligible to hold one or more of the following categories.

1.7.1 Category A

Category A licence holder to issue certificates for release to service after minor scheduled line maintenance and simple defect rectification within the limits of maintenance tasks specifically endorsed on the authorisation issued by a maintenance organisation approved under rule 133B for the broad category of aircraft endorsed on the licence and the certification privileges shall be restricted to the work carried out by the licence holder himself in the maintenance organization that issues the authorisation

1.7.2 Category B1

Category B1 licence holder to issue certificates for release to service and act as support staff following the maintenance performed on aircraft structure, power plant, mechanical and electrical systems, work on avionics system requiring simple tests to prove their serviceability and not requiring trouble shooting, in respect of an aircraft type endorsed on the licence

Note: Category B1 include the appropriate sub-category of Category A.

1.7.3 Category B2

Category B2 licence holder to issue:-

(a) certificates of release to service after maintenance on avionic and electrical systems, avionics and electrical system within engine and mechanical systems requiring only simple tests to prove their serviceability of aircraft type endorsed on the licence;

(b) certificates of release to service after minor scheduled line maintenance and simple defect rectification within the limits of tasks specifically endorsed on the certification authorisation issued by an approved maintenance organisation of aircraft type endorsed on the licence and this certification privilege shall be restricted to work that the licence holder has personally performed in the maintenance organisation which issued the certification authorisation and limited to the rating already endorsed on the licence.

1.7.4 Category B3

Category B3 licence holders to issue certificates of release to service after maintenance on aeroplane structure, engine and mechanical and electrical systems, work on avionic systems

requiring only simple tests to prove their serviceability and not requiring troubleshooting of 'piston-engine non-pressurised aeroplanes of 2000 kg Maximum Take-off Mass and below'

1.7.5 Category C

Category C licence holders to issue certificates of release to service after base maintenance in respect of an aircraft of the type endorsed on the licence. The privileges apply to the aircraft in its entirety including all systems.

1.8 VALIDITY PERIODS AND RENEWAL OF LICENCES - CAR SECTION-2 SERIES L

In accordance with Rule 61 of aircraft Rule 1937, an applicant may be issued with AME Licence in old format till 31st December 2016. Section -2 Series-L licences will be renewed for a period of 2 years, however, as of 31st March 2016, this licence cannot be used to certify aircraft, even if the validity period of the renewed licence exceeds this date.

Licence privileges relating to the maintenance and certification of aircraft may be converted to 'CAR-66 Aircraft Maintenance Engineer's Licence.

1.9 VALIDITY PERIODS AND RENEWAL OF LICENCES CAR-66

CAR-66 licences are valid for 5 years from the date of issue or last renewal.

1.10 PROTECTED RIGHTS

Protected rights are the entitlement to have licence, qualification or type ratings (that were valid at a qualifying date) transferred to a CAR-66 aircraft maintenance engineer licence. The conversion process confers the privileges exercised by an AME Licence holder prior to the introduction of CAR-66

Categories / Ratings held on the existing Licences are transferred with or without limitation under appropriate category or Section XIV (a) of the CAR-66 licence. In conversion from a CAR Section L licence to CAR 66 Licence, all existing Type rated AME Licences are converted into either full or restricted CAR-66 AME Licence depending upon the type ratings already endorsed on these licences. Where an applicant does not meet the full requirements, the converted Licence are issued with "Limitation(s)".

Endorsements of Type Ratings in existing "A", "B", "D" and "X" Category of Licences covering Gliders, Balloons, Aircraft, Engine, Propeller and items of equipment that are not covered by CAR-66, and are also transferred to Section XIV(a) of the "CAR-66 AME licence". However, in order to exercise the privileges to issue CRS, ratings are required to be transferred to Section XII / XIII of AME licence in appropriate category.

Endorsements of Type Ratings in respect of obsolete types of aircraft are recorded in Section XIV (a) of new Licence indicating that the holder had these Type Ratings endorsed in his earlier Licence.

Note 1: Cut-off date for conversion of the existing Licences is 31st March 2016. After this cut-off date, they cease to hold the privileges unless converted into CAR-66 AME LICENCE.

Note 2: Once an AME Licence is converted into a CAR-66 AME Licence, the previously held AME Licence will be rendered invalid.

1.11 LOG BOOKS OF AIRCRAFT MAINTENANCE PERSONNEL

Under CAR 66 there is a requirement to demonstrate practical experience (OJT) for initial licence issue or for any type rating endorsement. Every person holding an Aircraft Maintenance Engineer's Licence or in the process of qualifying for such licence under these rules are required to maintain a personal log book. A sample format of logbook is given in Chapter-9, Appendix C of this document.

To demonstrate that an applicant meet the licensing requirements, the applicant have to submit work record or Logbook showing the required tasks performed by him.

Note: It is only necessary to submit the relevant logbook pages in support of an application and not the entire document.

1.12 THE LOGBOOK ASSESSOR

It is an assessor's responsibility to evaluate and determine the extent of practical skills and maintenance experience necessary for the holder to submit an application for an aircraft maintenance engineers licence. There are two types of Assessor as detailed below.

1.12.1 CAR-145 and CAR-147 logbook assessor

The assessor will be nominated by the CAR-145 or CAR-147 organisation by virtue of holding a supervisory or management position within the approved organisation. In this case the DGCA would expect the nominated person or persons to be included in that organisation's exposition. This will allow the person or persons of that organisation to act as an Assessor for that organisation for the duration of that organisation's CAR-145 or CAR-147 approval or whilst they remain in the employment of that organisation.

1.12.2 The DGCA authorised assessor (for applicants working outside of CAR-145 and CAR- 147 organisations)

The Assessor will be a senior licensed aircraft maintenance engineer whose licence coverage encompasses that for which the application is being made or the Assessor will be a person with acceptable experience who holds or who has held a senior position in an approved

aircraft maintenance organisation. In this case an application will need to be made to the DGCA. A letter of approval will be issued to the Authorised Assessor and will be valid for two years.

The Assessor should be appropriately qualified i.e. the assessors should demonstrate training and experience on the assessment process being undertaken and be authorised to do so by the organisation.

1.13 THE CAR-66 APPLICATION FORMS AND GUIDANCE DOCUMENTS

CAR 66 application forms and accompanying guidance documents are available to download from DGCA web site. The forms cross-refer to the guidance document and vice-versa, giving step-by-step guidance on how to complete each section of the form, the requirements for the particular application and any additional supporting documents required, if necessary.

The forms with accompanying guidance can be downloaded from our web site- http://dgca.nic.in/forms/forms.htm

1.14 ADMINISTRATIVE PROCEDURES

This section details the administration procedures when applying to the DGCA for a particular service. Applications should be forwarded to: DGCA, Directorate of Airworthiness, Sri Aurobindo Marg, opposite Safdarjung Airport, New Delhi. 110003.

1.14.1 Applying for a Service

When an application is submitted to DGCA, designated officer at Airworthiness Directorate will check the application to ensure that all necessary paperwork, logbook, fees etc. have been submitted. The application will then be assessed to ascertain whether all technical requirements have been met. An applicant will be notified if the application has been rejected in writing or by e-mail explaining the reason for rejection. Whilst we do endeavour to disposed of application within our published timescales, there may be variations in actual delivery times. Detail procedure for issue / variation / renewal of a CAR 66 AME licence is documented in Part II, Chapter 17 of Airworthiness Procedure Manual which is available on DGCA website.

1.14.2 Fees

Refer Rule 62 of The Aircraft Rules, 1937 for details of fees.

1.14.3 Change of Name

The holder of a licence who has changed their name is required to notify the DGCA by writing an application enclosing the appropriate fee. If the change of name is through marriage, the notarised copy of marriage certificate must be submitted. There is no charge for a change of name through marriage.

If the change of name is other than by marriage the applicant is required to submit proof of name change like Aadhar card, passport, and notarised copy of name change deed, newspaper cutting which reflect applicant name change and details published in Government Gazette. There is a charge for this service as per Rule 62.

1.14.4 Lost Licence

Individuals who have lost their licence are required to submit CA Form 19-05 for a duplicate licence. There is a charge for this service as per Rule 62.

1.15 COMPLAINTS AND APPEALS

Whilst DGCA endeavour to provide a high level of service to applicants, inevitably there will be times when due to circumstances beyond our control, we exceed our published licence processing times. We are also regrettably unable to respond to enquiries of this nature, as this could further add to the delays in processing licence applications. All licence applications are dealt with in date order of receipt.

If an applicant has a complaint or are appealing against a decision not to issue licence, a letter should be addressed to: Head of Airworthiness Directorate, Office of DGCA, Opposite Safdarjung Airport, New Delhi-110003.

The letter of complaint or appeal should include
• Applicant full name, date of birth and reference number.
• Full details of the complaint/appeal.
• Reference No of letter / application if any.
• Any relevant contact/application dates.

APPENDICE TO CHAPTER 1

Appendix A - List of Application Forms

DGCA application forms for licenses and examinations (Available on DGCA website under heading Forms)

Form No	Description
CA Form 19-01	Application For Initial Issue Of CAR- 66 Aircraft Maintenance Engineer's Licence
CA Form 19-02	Application for extension of CAR- 66 aircraft maintenance engineer's licence
CA Form 19-03	Application for renewal of CAR- 66 aircraft maintenance engineer's licence
CA Form 19-04	Application for conversion/removal of limitations of CAR- 66 aircraft maintenance engineer's licence
CA Form 19-05	Application for issue of duplicate CAR- 66 aircraft maintenance engineer's licence
CA Form 19-06	Medical certificate
CA Form 19-07	Application for allotment of computer number for appearing in AME licence examinations
CA Form 19-08A	Application for appearing in written paper(s) of CAR 66 basic knowledge examination
CA Form 19-08B	*Application for appearing in CAR 66 type examination*
CA Form 19-09	Application for appearing in skill test of CAR-66 AME licence
CA Form 19-10	Format of aircraft maintenance engineer work record / log book
CA Form 19-11	Application for issue of basic knowledge examination certificate

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CHAPTER 2

CONVERSION OF PROTECTED RIGHTS

2.1 Procedure for Conversion of type rated AME Licence issued in accordance with CAR Section 2 Series L

2.2 Issue of a Category A Licence to a previously Unlicensed Engineer

2.3 Limitations on a Converted Licence

2.4 Removing Limitations from a Type Rating Licence

2.5 Cut-off date for Conversion

2.6 Making Application for Conversion or Removal of Limitation

2.7 If application is rejected.

2.8 Complaints and Appeals

Appendix A Requirements For Issue of CAR 66 Licence

Appendix B Conversion and Removal of Limitations from a CAR-66 Licence

CHAPTER 2

CONVERSION OF PROTECTED RIGHTS

2.1 PROCEDURE FOR CONVERSION OF TYPE RATED AME LICENCE ISSUED IN ACCORDANCE WITH CAR SECTION 2 SERIES L.

CAR 66.A.70 provides for conversion of an existing valid Aircraft Maintenance Engineer's Licence into a CAR-66 Aircraft Maintenance Engineer Licence (CAR-66 AME licence). The conversion process confers the privileges exercised by an AME Licence holder prior to the introduction Of CAR-66.

Note: - As conversions performed on the basis of 66.A.70 (d) are aimed to maintain the privileges of the pre-existing type ratings, the limitations introduced on the CAR-66 licence are not linked to possible differences between the scope of the AME licence and the scope of the CAR-66 licence qualification. This conversion does not include such comparison. This means that, in order to remove such limitations, full compliance with the conditions of CAR-66 needs to be demonstrated

All Type rated AME Licences issued under CAR Series L are converted into either full or restricted CAR-66 AME Licence depending upon the type ratings already endorsed on these licences as detailed in Appendix B of this chapter.

Categories / Ratings held on the Series L Licences are transferred with or without limitation under appropriate category or Section XIV (a) of the CAR-66 licence.

Endorsements of Type Ratings in existing "A", "B", "D" and "X" Category of Licences covering Gliders, Balloons, Aircraft, Engine, Propeller and items of equipment that are not covered by CAR-66, are also transferred to Section XIV(a) of the "CAR-66 AME licence". However, in order to exercise the privileges to issue CRS, ratings would need to be transferred to Section XII / XIII of AME licence in appropriate category.

Licences with open rating are converted with appropriate group rating provided the holder of such licence produces suitable evidence of having exercised the licence privileges on various aircraft types. Otherwise, the open rated AME licence will be converted to a CAR-66 licence conferring the privileges exercised by the AME in the past on specific aircraft.

Endorsements of Type Ratings in respect of obsolete types of aircraft are recorded in Section XIV (a) of CAR 66 Licence indicating that the holder had these Type Ratings endorsed in his earlier Licence.

When satisfied that the applicant meets the requirements for conversion specified in CAR-66, the DGCA, issue the CAR-66 aircraft maintenance engineer's licence to the applicant. All information pertaining to the application is retained on file in DGCA Headquarters, Airworthiness Directorate. The applicant should review the CAR-66 aircraft maintenance engineer's licence on its receipt and raise any query or bring out anomaly if any noted relating

to the conversion process to the notice of Airworthiness Directorate in DGCA Headquarters within one month of receipt.

Note: A table covering the most common CAR Section L to CAR-66 licence conversion scenarios can be found in Appendix B of this chapter.

2.2 ISSUE OF A CATEGORY A LICENCE TO A PREVIOUSLY UNLICENSED ENGINEER

Refer Chapter 3 of this document for more details.

2.3 LIMITATIONS ON A CONVERTED LICENCE

Where an applicant does not meet the full requirements as in Appendix A (Table 1) or Appendix B of this chapter, the converted Licence is issued with "Limitation(s)". Limitations may be applied singly or in combination. Endorsement of the 'Limitation Code' on a CAR-66 Converted Licence implies that, the holder is not authorized to exercise the privileges of the licence on specific system denoted by the 'Limitation Code' of the particular type of aircraft. The limitation codes and their translation are listed below:

1 Excluding airframe depending upon category/sub-category of licence
2 Excluding engine depending upon category/sub-category of licence
3 Excluding electrical power generation & distribution systems.
4 Excluding instrument systems, INS/IRS and Flight Directors systems, autopilot systems on aeroplanes/helicopters, automatic landing and auto throttle systems on aeroplanes
5 Excluding radio communication/navigation and radar systems.
6 Excluding electrical power generation & distribution systems on aircraft above 5700 Kgs
7 Excluding avionic line replaceable units
8 Excluding avionic line replaceable units on aircraft above 5700 Kgs

2.4 REMOVING LIMITATIONS FROM A TYPE RATING LICENCE

To remove limitations imposed on CAR-66 licence, where an Series L, AME licence does not directly converted to a full CAR-66 Category / sub-category licence, the relevant conversion module examinations must be passed and appropriate experience requirements as in Appendix II to AMC of CAR-66 are met. Basic Knowledge Modules / sub-modules required to be completed for removing these limitation(s) are specified in Column 5 of table given in Appendix B of this chapter.

2.5 CUT-OFF DATE FOR CONVERSION

Cut-off date for conversion of the Series L, AME Licences was 31st March 2016. All old, Licence holder will cease to hold the privileges unless converted into CAR-66 AME LICENCE. However there is no time limit for removal of limitations on converted Licences.

Once an AME Licence is converted into a CAR-66 AME Licence, the previously held AME Licence will be rendered invalid.

2.6 MAKING APPLICATION FOR CONVERSION OR REMOVAL OF LIMITATION

An application may be made by holders of a type rated AME licence on CA Form 19-04 with necessary enclosures to DGCA with a request to issue an AME licence issued in accordance with CAR-66. On receipt of the CA Form 19-04, it will be assessed by designated officials of Airworthiness Directorate for completeness including the required supporting documentation for conversion of their AME licence to a CAR-66 AME licence. No fee will be charged for conversion of old licences into new CAR-66 format.

To receive full certification privileges exercised by the AME prior to the CAR-66 coming into force, the applicants are required to provide complete details of type endorsement held and Privileges exercised by them in the application form along with supporting documental evidence including Course Completion Certificates issued by DGCA approved organisations or CAR-147 organisations, if applicable.

2.7 IF APPLICATION IS REJECTED.

If an application does not meet the requirements for conversion to CAR-66, the application will be rejected by the DGCA and the details of discrepancies should be communicated to the applicant in writing.

Most common reasons for rejection are
- Quality Manager has not certified supporting documentation.
- Incomplete application forms.
- Licence not submitted.
- Incorrect fees.
- More detailed work experience i.e. logbook/ worksheet require.

2.8 Complaints and Appeals

Please Refer Chapter 1.15.

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Appendix A Requirements For Issue of CAR 66 Licence

REQUIREMENTS FOR ISSUE OF CAR 66 LICENCE — **TABLE - 1**

CATEGORY		DESCRIPTION	BASIC KNOWLEDGE EXAMINATION MODULES															PRACTICAL MAINTENANCE EXPERIENCE	TYPE TRAINING	DEMOSTRATION OF SKILL
			3	4	5	6	7	8	9	10	11A	11B	12	13	14	15	16	17		
A	A1	AEROPLANES TURBINES	X		X	X	X	X	X	X	X					X		X	3 YEARS / 2//1 YEARS AS PER PARA A1 OF CAR 66.A.30	REF: CAR 66 APPENDIX III/. CAR 66 AMC APPENDIX II (Not Applicable for Cat-A)	✓
	A2	AEROPLANES PISTON	X		X	X	X	X	X	X		X					X	X		
	A3	HELICOPTERS TURBINES	X		X	X	X	X	X	X			X			X				
	A4	HELICOPTERS PISTON	X		X	X	X	X	X	X			X				X			
B	B1.2	AEROPLANES PISTON	X	X	X	X	X	X	X	X		X					X	X		
	B1.4	HELICOPTERS PISTON	X	X	X	X	X	X	X	X			X				X			
	B1.1	AEROPLANES TURBINES	X	X	X	X	X	X	X	X	X					X		X	5 YEARS / 4 /2 YEARS AS PER PARA (A) (2) OF CAR 66.A.30		
	B1.3	HELICOPTERS TURBINES	X	X	X	X	X	X	X	X			X			X				
B2		AVIONICS	X	X	X	X	X	X	X	X				X	X					
C		----------																	5 YEARS / 3 YEARS AS PER PARA (A)(3) OF CAR 66.A.30**		

** **For Large Aircraft**

(i) 3 years of experience in exercising category B1.1, B1.3 or B2 privileges on Large Aircraft or as support staff in base maintenance or a combination of both OR

(ii) 5 years of experience in exercising B1.2 or B1.4 privileges on Large Aircraft or as support staff in base Maintenance or a combination of both.

For Non Large Aircraft

3 years of experience category B1 or B2 privileges on Non Large Aircraft or as support staff in base maintenance or a combination of both.

***Note**: 12 months of Recent Experience as B1 or B2 Base Maintenance support staff.*

Appendix B Conversion and Removal of Limitations from a CAR-66 Licence

The tables below have been revised in order to simplify the conversion information. This table provides a matrix for most of the categories of licences issued by the DGCA. Any questions relating to the conversion of licences that do not appear in table should be referred to the DGCA for assessments and resolution.

Column 1 shows Pre-CAR 66 Licence endorsements

Column 2 shows Categories/ Sub Categories of CAR-66 Licence

Column 3 shows Limitation code. 'Limitation Code' on a CAR-66 Converted Licence implies that, the holder is not authorized to exercise the privileges of the licence on specific system denoted by the 'Limitation Code' of the particular type of aircraft.

Column 5 shows the basic knowledge requirement examinations that must be passed to Satisfy the theoretical element for removing a limitation. Where part modules are shown, the full part module may not be required and therefore may be sub-divided.

PRE – CAR 66 LICENSE	**CAR-66 LICENSE**	**LIMITATION CODE**	**LIMITATION(S)**	**MODULE OR SUB MODULE TO BE PASSED TO REMOVE CAR-66 LICENSE LIMITATIONS**
1. CAT "A" & "C" (HEAVY AIRCRAFT & JET ENGINE - AEROPLANE)	B1.1	3 7	EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS. EXCLUDING AVIONIC LINE REPLACEABLE UNITS	4 (ALL) AND, 11.5, 11.6, 11.14, 11.19, 11.20 & 11.21 OF 11A 5 (ALL)
1. CAT "A" & "C" (LIGHT AIRCRAFT & JET ENGINE)	B1.1	1 6 8	EXCLUDING AIRFRAME ON AIRCRAFT ABOVE 5700 KG EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS ON AIRCRAFT ABOVE 5700 KG EXCLUDING AVIONIC LINE REPLACEABLE UNITS ON AIRCRAFT ABOVE 5700 KG	11A (ALL) 4 (ALL) AND, 11.5, 11.6, 11.14, 11.19, 11.20 & 11.21 OF 11A 5 (ALL),
2. CAT "A" (HEAVY AIRCRAFT - AEROPLANE)	B1.1	2 3 7	EXCLUDING ENGINE. EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS EXCLUDING AVIONIC LINE REPLACEABLE UNITS	15 (ALL) & 17 (ALL) 4 (ALL) AND, 11.5, 11.6, 11.14, 11.19, 11.20 & 11.21 OF 11A 5 (ALL)

PRE – CAR 66 LICENSE	**CAR-66 LICENSE**	**LIMITATION CODE**	**LIMITATION(S)**	**MODULE OR SUB MODULE TO BE PASSED TO REMOVE CAR-66 LICENSE LIMITATIONS**
3. CAT "C" (JET ENGINE - AEROPLANE)	B1.1	1 3 7	EXCLUDING AIRFRAME. EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS EXCLUDING AVIONIC LINE REPLACEABLE UNITS	11A (ALL) 4 (ALL) AND, 11.5, 11.6, 11.14, 11.19, 11.20 & 11.21 OF 11A 5 (ALL)
4. CAT "A" & "C" (LIGHT AIRCRAFT & PISTON ENGINE - AEROPLANE)	B1.2	6 8	EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS ON AIRCRAFT ABOVE 5700 KG EXCLUDING AVIONIC LINE REPLACEABLE UNITS ON AIRCRAFT ABOVE 5700 KG	4 (ALL) AND 11.5, 11.6 & 11.14 OF 11B. 5 (ALL)
5. CAT "A" (LIGHT AIRCRAFT - AEROPLANE)	B1.2	2 6 8	EXCLUDING ENGINE EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS ON AIRCRAFT ABOVE 5700 KG EXCLUDING AVIONIC LINE REPLACEABLE UNITS ON AIRCRAFT ABOVE 5700 KG	16 (ALL), & 17 (ALL) 4 (ALL) AND 11.5, 11.6 & 11.14 OF 11B 5(ALL)
6. CAT "C" (PISTON ENGINE - AEROPLANE)	B1.2	1 3 7	EXCLUDING AIRFRAME EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS EXCLUDING AVIONIC LINE REPLACEABLE UNITS.	11B (ALL) 4 (ALL) AND 11.5, 11.6 & 11.14 OF 11B 5 (ALL)
7. CAT "A" & "C" (HELICOPTER & JET ENGINE)	B1.3	6 8	EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS ON AIRCRAFT ABOVE 5700 KG EXCLUDING AVIONIC LINE REPLACEABLE UNITS ON AIRCRAFT ABOVE 5700 KG	4 (ALL), 12.7, 12.8, 12.15, 12.17, 12.18 & 12.19 5 (ALL)
8. CAT "A" (HELICOPTER)	B1.3	2 6 8	EXCLUDING ENGINE EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS ON AIRCRAFT ABOVE 5700 KG EXCLUDING AVIONIC LINE REPLACEABLE UNITS ON AIRCRAFT ABOVE 5700 KG	15 (ALL) 4 (ALL), 12.7, 12.8, 12.15, 12.17, 12.18 & 12.19 5 (ALL)

9. CAT "C" (JET ENGINE - HELICOPTER)	B1.3	1 3 7	EXCLUDING AIRFRAME EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS. EXCLUDING AVIONIC LINE REPLACEABLE UNITS.	12 (ALL) 4 (ALL), 12.7, 12.8, 12.15, 12.17, 12.18 & 12.19 5 (ALL)
10. CAT "A & C" (HELICOPTER & PISTON ENGINE)	B1.4	6 8	EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS ON AIRCRAFT ABOVE 5700 KG EXCLUDING AVIONIC LINE REPLACEABLE UNITS ON AIRCRAFT ABOVE 5700 KG	4 (ALL), 12.7, 12.8, 12.15, 12.17, 12.18 & 12.19 5 (ALL)
11. CAT "A" (HELICOPTER)	B1.4	2 6 8	EXCLUDING ENGINE EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS ON AIRCRAFT ABOVE 5700 KG EXCLUDING AVIONIC LINE REPLACEABLE UNITS ON AIRCRAFT ABOVE 5700 KG	16 (ALL) 4 (ALL), 12.7, 12.8, 12.15, 12.17, 12.18 & 12.19 5 (ALL)

12. CAT "C" (PISTON ENGINE - HELICOPTER)	B1.4	1 3 7	EXCLUDING AIRFRAME EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS EXCLUDING AVIONIC LINE REPLACEABLE UNITS.	12 (ALL) 4 (ALL), 12.7, 12.8, 12.15, 12.17, 12.18 & 12.19 5 (ALL)
13. CAT . "V" (AVIONICS) / "E,I,R" (ELECTRICAL, INSTRUMENT & RADIO) SEE NOTE 1	B2	NIL	NIL	NIL
14. CAT "E" (ELECTRICAL) • SEE NOTE 1	B2	4 5	EXCLUDING INSTRUMENT SYSTEMS, INS/IRS AND FLIGHT DIRECTORS SYSTEMS, AUTOPILOT SYSTEMS ON AEROPLANES/ HELICOPTERS, AUTOMATIC LANDING AND AUTO THROTTLE SYSTEMS ON AEROPLANES. EXCLUDING RADIO COMMUNICATION/ NAVIGATION AND RADAR SYSTEMS.	13,3, 13.7, & 13.8 14 (ALL) 13.4 & 13.6,

15. CAT "I" (INSTRUMENT)	B2	3 5	EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS. EXCLUDING RADIO COMMUNICATION/ NAVIGATION AND RADAR SYSTEMS.	13.5 & 13.9 13.4 & 13.6,
16. CAT "R"(RADIO NAVIGATION)	B2	3 4	EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS. EXCLUDING INSTRUMENT SYSTEMS, INS/IRS AND FLIGHT DIRECTORS SYSTEMS, AUTOPILOT SYSTEMS ON AEROPLANES/ HELICOPTERS, AUTOMATIC LANDING AND AUTO THROTTLE SYSTEMS ON AEROPLANES.	13.5 & 13.9 13.3, 13.7 & 13.8 14 (ALL)
1. CAT "E & I" (ELECTRICAL & INSTRUMENT)	B2	5	EXCLUDING RADIO COMMUNICATION/ NAVIGATION AND RADAR SYSTEMS.	13.4& 13.6
19. CAT "E & R" (ELECTRICAL & RADIO NAVIGATION)	B2	4	EXCLUDING INSTRUMENT SYSTEMS, INS/IRS AND FLIGHT DIRECTORS SYSTEMS, AUTOPILOT SYSTEMS ON AEROPLANES/ HELICOPTERS, AUTOMATIC LANDING AND AUTO THROTTLE SYSTEMS ON AEROPLANES.	13.3, 13.7 & 13.8 14 ALL)
20. CAT "I & R" (INSTRUMENT & RADIO NAVIGATION)	B2	3	EXCLUDING ELECTRICAL POWER GENERATION & DISTRIBUTION SYSTEMS.	13.5 & 13.9

Note 1: Category V and Cat E Licence holder who are certifying electrical systems related to airframe and engine presently on aircraft above 5700 Kg AUW will continue to do so under the privileges of Category B2 Licence holders.

Note 2: Applicants should refer to CAR-66 Appendix I in order to identify the part module subjects required.

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CHAPTER 3

CATEGORY A LICENCE

CHAPTER 3

CATEGORY A LICENCE

3.1 THE CATEGORY A LICENCE

The Category A licence is a mechanical based licence and permits the holder to issue certificates of release to service after minor scheduled line maintenance and simple defect rectification within the limits of maintenance tasks specifically endorsed on the authorisation issued by a maintenance organisation approved under rule 133B for the broad category of aircraft endorsed on the licence and the certification privileges should be restricted to the work carried out by the licence holder himself in the maintenance organization that issues the authorisation.

The A licence is sub-divided into sub-categories as below:

A1 Aeroplanes Turbine
A2 Aeroplanes Piston
A3 Helicopters Turbine
A4 Helicopters Piston

3.2 BASIC KNOWLEDGE REQUIREMENTS

An applicant for 'Category A' aircraft maintenance engineer's licence is required to demonstrate by examination, a level of knowledge in the appropriate subject modules in accordance with CAR 66. The basic knowledge examination are conducted by Central Examination Organization of DGCA.

3.3 EXPERIENCE REQUIREMENTS

3.3.1 General

An applicant for a category-A licence must have three years of practical aircraft maintenance experience on operating aircraft. The experience should be practical and involve with a representative cross section of maintenance tasks on aircraft. This experience should include minor scheduled line maintenance and simple defect rectification on operating aircraft pertaining to the category of licence for which application is to be made.

This experience should have been acquired within the 10 years preceding the application for an aircraft maintenance licence or the addition of a category or subcategory to such a licence.

3.3.2 Recent Practical Maintenance Experience

All applicants must have gained at least one year's experience on aircraft typical of the category or sub-category for which the initial aircraft maintenance engineer's licence is sought.

Of this one year's experience, six months must have been gained in the 12 months immediately before application. The remainder must have been gained in the 7 years before application.

3.4 REDUCTION IN EXPERIENCE REQUIREMENTS

A reduction in the experience requirement may be considered for certain applicants who fall into either category below.

3.4.1 'Skilled Worker'

A skilled worker is a person who has successfully completed a course of training acceptable to the DGCA and involving the manufacture, repair, overhaul or inspection of mechanical, electrical or electronic equipment. The training would have included the use of tools and measuring devices.

3.4.1.1 Experience Required

2 years where the applicant has satisfactorily completed training in any training organization approved under rule 133B or who has acquired a B Sc Degree in aircraft maintenance or Degree in Engineering from a recognized University;

One year where the applicant has successfully completed training in an approved maintenance organisation as a part of the syllabi of the course he has passed from a training organisation approved under rule 133B for imparting basic aircraft maintenance training:

3.4.2 Other Experienced Applicants

Aircraft maintenance experience gained outside a civil aircraft maintenance environment can include experience gained in armed forces, coast guards and police etc. or in aircraft manufacturing.

3.5 BASIC THEORETICAL KNOWLEDGE REQUIREMENTS

3.5.1 General

Basic knowledge levels for each category licence have been allocated relating to the complexity of certifications appropriate to the particular licence. A Category A applicant must demonstrate an adequate level of knowledge in the required subjects as detailed in this section.

3.5.2 Aeroplanes Turbine-Engines (A1.1)

Module 3	Electrical Fundamentals
Module 5	Digital Techniques/Electronic Instrument Systems
Module 6	Materials & Hardware

Module 7A Maintenance Practices
Module 8 Basic Aerodynamics
Module 9A Human Factors
Module 10 Aviation Legislation
Module 11A Turbine Aeroplanes Aerodynamics, Structures & Systems
Module 15 Gas Turbine Engines
Module 17A Propeller

3.5.3 Aeroplanes Piston-Engines (A1.2)

Module 3 Electrical Fundamentals
Module 5 Digital Techniques/Electronic Instrument Systems
Module 6 Materials & Hardware
Module 7A Maintenance Practices
Module 8 Basic Aerodynamics
Module 9A Human Factors
Module 10 Aviation Legislation
Module 11B Piston Aeroplane Aerodynamics, Structures & Systems
Module 16 Piston Engine
Module 17A Propeller

3.5.4 Helicopter Turbine-Engines (A1.3)

Module 3 Electrical Fundamentals
Module 5 Digital Techniques/Electronic Instrument Systems
Module 6 Materials & Hardware
Module 7A Maintenance Practices
Module 8 Basic Aerodynamics
Module 9A Human Factors
Module 10 Aviation Legislation
Module 12 Helicopter Aerodynamics, Structures & Systems
Module 15 Gas Turbine Engine

3.5.5 Helicopter Piston Engines (A1.4)

Module 3 Electrical Fundamentals
Module 5 Digital Techniques/Electronic Instrument Systems
Module 6 Materials & Hardware
Module 7A Maintenance Practices
Module 8 Basic Aerodynamics
Module 9A Human Factors
Module 10 Aviation Legislation
Module 12 Helicopter Aerodynamics, Structures & Systems
Module 16 Piston Engine

3.6 BASIC EXAMINATION STANDARD

Refer Chapter 10 of this document and Appendix-II of CAR-66

3.7 CREDITS FROM THEORETICAL KNOWLEDGE REQUIREMENTS

3.7.1 General

An applicant may apply to the DGCA for full or partial examination credit to the basic knowledge requirements for basic knowledge examinations that do not meet the requirement described in CAR 66. DGCA may grant credit on the basis of a credit report. The credit report should include a comparison between:

(i) The modules, sub-modules, subjects and knowledge levels contained in CAR-66, as applicable; and
(ii) The syllabus of the technical qualification concerned relevant to the particular category being sought.

This comparison should state if compliance is demonstrated and contain the justifications for each statement.

On the basis of credit report, partial examination exemptions may be given to applicants who wish to extend their current licence to include a further basic Category/sub-Category.

3.7.2. Credits for paper 1, 2 and 3 of erstwhile AME Licence examination

Credit is given to an applicant who has passed basic knowledge examination papers 1, 2 and 3 of the erstwhile AME Licence qualifying system as indicated in APPENDIX A of this Chapter.

3.7.3 Examination credit validity
Credits for basic knowledge examination expirers 10 years after they are granted in case CAR 66 AME Licence is not issued.

Upon expiry of the credits, the applicant may apply for new credits. The DGCA may continue the validity of the credits for an additional period of 10 years if basic knowledge requirements have not been changed.

3.7.4 Difference modules for issuing Category A license to the BAMEL/BAMEC holders

The modular syllabus of CAR-66 often requires different levels of knowledge for the different licence categories (A, B1, B2 and B3) within a module; therefore there are conversion examinations applicable to certain modules for licence holders wishing to include another category. The DGCA conduct all conversion part module examinations. Applications should be made in the normal way.

The most common cases of category conversion are detailed in Appendix B of this Chapter.

3.8 MAKING APPLICATION

An application for an aircraft maintenance engineer's licence should be made on CA Form 19-01 of all Category A initial issue application with necessary documents and fees to DGCA. Current forms may be downloaded from our web site (http://dgca.nic.in/). Refer to Appendix A to Chapter 1 for information on form numbers.

Note: The Category A licence is a basic licence only and cannot hold any type ratings.

3.8.1 Supporting Documents
Proof of Age – 10th standard certificate from a recognized board or its equivalent or the Birth certificate issued by municipal corporation /committee shall be the documents acceptable as proof of age. Educational qualification -12th Standard Certificate from a recognized board or a Diploma certificate recognized by AICTE or any certificate acceptable to DGCA as equivalent qualification.

Identity proof- Passport or any photo identity card issued by the Government.

Result sheets – The result cards of applicable paper/module issued by CEO.

Course Completion Certificates – issued by approved aircraft maintenance training organisation/ Degree in Engineering Certificate (if applicable)/ Defence experience certificate.

Logbook – confirming experience.

Note: Having clear concise supporting data will enable us to issue licences more effectively and with less risk *of errors or rejections.*

3.9 IF APPLICATION IS REJECTED

Please Refer Chapter 1.15.

Appendix A: Credits for Papers 1, 2 & 3

PAPER PASSED		MODULES DEEMED COVERED																
			3	4	5	6	7	8	9	10	11A	11B	12	13	14	15	16	17
1		9 ,10							X	X								
2		3,6,7,8,	X			X	X	X										
1, 2		3,6,7,8,9,10	X			X	X	X	X	X								
1+2+3	HA	3,6,7,8,9,10, 11A	X			X	X	X	X	X	X 11.5, 11.6, 11.14 11.19, 11.20, 11.21							
	LA	3,6,7,8,9,10, 11B	X			X	X	X	X	X		X 11.5, 11.6, 11.14						
	RA	3,6,7,8, 9, 10, 12	X			X	X	X	X	X			X 12.7, 12.8, 12.15 12.17 12.18 12.19					
	JE	3,6,7,8, 9,10, 15, 17	X			X	X	X	X	X						X		X
	PE	3,6,7,8, 9,10, 16, 17	X			X	X	X	X	X							X	X
	ES	3, 4, 5, 6, 7, 8, 9, 10, 13.5, 13.9	X	X	X	X	X	X	X	X				X 13.5,13.9				
	IS	3,4,5,6,7,8, 9,10,13.3, 13.7,13.8	X	X	X	X	X	X	X	X				X 13.3, 13.7, 13.8	X			
	RN	3,4,5,6,7,9,8, 9,10,13.4,13.6	X	X	X	X	X	X	X	X				X 13.4,13.6				

Modules deemed Covered x

Modules to be covered

Appendix B: Difference modules for issuing category a license to the BAMEL/BAMEC holders

PRE-CAR 66 BAMEL holders PASSED Paper 1 & 2	CAR-66 LINCENSE TO BE ISSUED	ADDITIONAL REQUIREMENTS TO BE FULFILLED TO ACQUIRE CAR-66 LICENSE	MODULE OR SUB MODULE TO BE PASSED TO COMPLETE THE CAR-66 REQUIREMENT
1.(HA)+(CT)	A1	Electrical Power Generation & Distribution System.	11.5,11.6,11.14, 11.19, 11.20 & 11.21 of 11A.
		Avionic Line Replaceable Units	5(All)
2.(LA)+(CT)	A1	Airframe on Aircraft Above 5700 Kg.	11A (All)
		Avionic Line Replaceable Units on Aircraft Above 5700 kg.	5 (All)
3. (HA)	A1	Engine	15 (All) & 17 (All)
		Electrical Power Generation & distribution System.	11.5,11.6,11.14,11.19,11.20 &11.21,of 11A
		Avionic Line Replaceable Units	5(All)
4. (CT)	A1	Airframe	11A (All)
		Avionic Line Replaceable Units	5 (All)
5.(LA)+(CP)	A2	Electrical Power General & Distribution System On Aircraft Above 5700 kg.	11.5, 11.6, 11.14 of 11B
		Avionic Line Replaceable Units on Aircraft Above 5700 kg.	5 (All)

6.(LA)	A2	Engine	16 (All), & 17 (All)
		Electrical Power Generation & Distribution System on Aircraft Above 5700 kg.	11.5, 11.6, 11.14 of 11B
		Avionic Line Replaceable Units on Aircraft Above 5700 kg.	5 (All)
7. (CP)	A2	Airframe	11B (All)
		Avionic Line Replaceable	5(All)
8.(AHC)+(CT)	A3	Electrical Power Generation & Distribution System on Aircraft Above 5700 kg	12.7, 12.8, 12.15, 12.17, 12.18, & 12.19
		Avionic Line Replaceable Units on Aircraft Above 5700 kg.	5(All)
9.(AHC)	A3	Engine	15(All)
		Electrical Power Generation & Distribution System on Aircraft Above 5700 kg	12.7, 12.8, 12.15, 12.17, 12.18, & 12.19
		Avionic Line Replaceable Units on Aircraft Above 5700 kg.	5(All)
10.(AHC)+(CT)	A3	Airframe	12(All)
		Avionic Line Replaceable Units on Aircraft Above 5700 kg.	5 (All)

11.(AHC)-(CP)	A4	Electrical Power Generation & Distribution System on Aircraft Above 5700 kg	12.7, 12.8, 12.15, 12.17, 12.18, & 12.19
		Avionic Line Replaceable Units on Aircraft Above 5700 kg.	5(All)
12.(AHC)	A4	Engine	16(All)
		Electrical Power Generation & Distribution System on Aircraft Above 5700 kg	12.7, 12.8, 12.15, 12.17, 12.18, & 12.19
		Avionic Line Replaceable Units on Aircraft Above 5700 kg.	5(All)
13.(CP)	A4	Airframe	12(All)
		Avionic Line Replaceable Units on Aircraft Above 5700 kg.	5(All)

Note: For issuance of Category A for persons having BAMEC in ES/IS/RN/V or a combination please refer to the credits accorded as per Appendix A of this section.

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CHAPTER 4

CATEGORY B1 LICENCE

4.1 The Category B1 Licence

4.2 Basic Knowledge Requirements

4.3 Experience Requirements

4.4 Reduction in Experience Requirements

4.5 Basic Theoretical Knowledge Requirements

4.6 Basic Examination Standard

4.7 Credits from Theoretical Knowledge Requirements

4.8 Type Training and Examination Requirements

4.9 Making Application

4.10 If Application Is Rejected.

CHAPTER 4

CATEGORY B1 LICENCE

4.1 THE CATEGORY B1 LICENCE

Category B1 licence is a mechanical based licence and permits the holder to issue certificates for release to service and act as support staff following the maintenance performed on aircraft structure, power plant, mechanical and electrical systems, work on avionics system requiring simple tests to prove their serviceability and not requiring trouble shooting, in respect of an aircraft type endorsed on the licence

Note: Category B1 include the appropriate sub-category of Category A.

The B1 licence is sub-divided into sub-categories as below:

B1.1 Aeroplanes Turbine-Engines
B1.2 Aeroplanes Piston-Engines
B1.3 Helicopters Turbine-Engines
B1.4 Helicopters Piston-Engines

4.2 BASIC KNOWLEDGE REQUIREMENTS

An applicant for 'Category B1' aircraft maintenance engineer's licence is required to demonstrate by examination, a level of knowledge in the appropriate subject modules in accordance with CAR 66. The basic knowledge examination is conducted by Central Examination Organization of DGCA.

The levels of knowledge for each licence (sub) category are directly related to the complexity of the certifications related to the corresponding licence (sub) category, which means that Category A should demonstrate a limited but adequate level of knowledge, whereas category B1, B2 and B3 should demonstrate a complete level of knowledge in the appropriate subject module.

The endorsement of aircraft type ratings requires the satisfactory completion of the relevant category B1 approved type training.

4.3 EXPERIENCE REQUIREMENTS

4.3.1 General

An applicant for a category B1 licence must have completed a prescribed period of aircraft maintenance experience. This experience is to be relevant to the licence category required and to the maintenance experience on operating aircraft.

a) For sub categories B1.2 and B1.4- three years of practical aircraft maintenance experience on operating aircraft.
b) For sub-categories B1.1 and B1.3- five years of practical aircraft maintenance experience on operating aircraft.

The experience should be practical and involve with a representative cross section of maintenance tasks on aircraft.

This experience should have been acquired within the 10 years preceding the application for an aircraft maintenance licence or the addition of a category or subcategory to such a licence.

Note: Maintenance experience on operating aircraft:

- Means the experience of being involved in maintenance tasks on aircraft which are being operated by airlines, air taxi organisations, owners, etc.;
- Should cover a wide range of tasks in length, complexity and variety;
- Aims at gaining sufficient experience in the real environment of maintenance as opposed to only the training school environment;
- May be gained within different types of maintenance organisations (CAR-145, M.A. Subpart F etc.) or under the supervision of independent certifying staff;
- May be combined with CAR-147 approved training so that periods of training can be intermixed with periods of experience, similar to an apprenticeship.

4.3.2 Recent Practical Maintenance Experience

All applicants must have gained at least one year's experience on aircraft typical of the category or sub-category for which the initial aircraft maintenance engineer's licence is sought.

Of this one year's experience, six months must have been gained in the 12 months immediately before application. The remainder must have been gained in the 7 years before application.

For subsequent category /subcategory additions to an existing aircraft maintenance engineer's licence, the additional recent maintenance experience required may be less than one year, but should be at least three months. The required experience is dependent upon the difference between the licence category/subcategory held and applied for. Such additional experience must be typical of the new licence category/subcategory sought.

4.4 REDUCTION IN EXPERIENCE REQUIREMENTS

A reduction in the experience requirement may be considered for certain applicants who fall into either category below.

4.4.1 'Skilled Worker'

A skilled worker is a person who has successfully completed a course of training acceptable to the DGCA and involving the manufacture, repair, overhaul or inspection of mechanical, electrical or electronic equipment. The training would have included the use of tools and measuring devices.

4.4.1.1 Experience Required

B1.1 and B1.3 applicants must demonstrate- 4 years' experience where the applicant satisfactorily completed training in any training organization approved under rule 133B or who has acquired a B Sc Degree in aircraft maintenance or Degree in Engineering from a recognized University; or

2 years' experience where the applicant has successfully completed training in an approved maintenance organisation as a part of the syllabi of the course he has passed from a training organisation approved under rule 133B for imparting basic aircraft maintenance training:

B1.2 and B1.4 applicants must demonstrate- 2 years' experience where the applicant satisfactorily completed training in any training organization approved under rule 133B or who has acquired a Degree in an allied field of Engineering from a recognized University; or,

One year experience where the applicant has successfully completed training in an approved maintenance organisation as a part of the syllabi of the course he has passed from a training organisation approved under rule 133B for imparting basic aircraft maintenance training:

4.4.2 'Other Experienced Applicants'

Aircraft maintenance experience gained outside a civil aircraft maintenance environment can include experience gained in armed forces, coast guards and police etc. or in aircraft manufacturing.

4.4.2.1 Experience Required

Twelve years of practical aircraft maintenance experience, gained outside a civil aircraft maintenance environment should be accepted as equivalent to the requirements laid down in 4.3.1 above, in the relevant category supplemented by additional experience of civil aircraft maintenance minimum of 12 months.

4.5 BASIC THEORETICAL KNOWLEDGE REQUIREMENTS

4.5.1 General

Basic knowledge levels for each category licence have been allocated relating to the complexity of certifications appropriate to the particular licence. A Category B1 applicant must

demonstrate an adequate level of knowledge in the required subjects as detailed in this section.

Knowledge level requirements and general information relating to examination requirements and procedures can be found in Chapter 10.

4.5.2 Aeroplanes Turbine-Engines (B1.1)

Module 3	Electrical Fundamentals
Module 4	Electronic Fundamentals
Module 5	Digital Techniques/Electronic Instrument Systems
Module 6	Materials & Hardware
Module 7A	Maintenance Practices
Module 8	Basic Aerodynamics
Module 9A	Human Factors
Module 10	Aviation Legislation
Module 11A	Turbine Aeroplanes Aerodynamics, Structures & Systems
Module 15	Gas Turbine Engines
Module 17A	Propeller

4.5.3 Aeroplanes Piston-Engines (B1.2)

Module 3	Electrical Fundamentals
Module 4	Electronic Fundamentals
Module 5	Digital Techniques/Electronic Instrument Systems
Module 6	Materials & Hardware
Module 7A	Maintenance Practices
Module 8	Basic Aerodynamics
Module 9A	Human Factors
Module 10	Aviation Legislation
Module 11B	Aeroplanes Aerodynamics, Structures & Systems
Module 16	Piston Engine
Module 17A	Propeller

4.5.4 Helicopter Turbine-Engines (B1.3)

Module 3	Electrical Fundamentals
Module 4	Electronic Fundamentals
Module 5	Digital Techniques/Electronic Instrument Systems
Module 6	Materials & Hardware
Module 7A	Maintenance Practices
Module 8	Basic Aerodynamics
Module 9A	Human Factors
Module 10	Aviation Legislation
Module 12	Helicopter Aerodynamics, Structures & Systems
Module 15	Gas Turbine Engine

4.5.5 Helicopter Piston Engines (B1.4)

Module 3	Electrical Fundamentals
Module 4	Electronic Fundamentals
Module 5	Digital Techniques/Electronic Instrument Systems
Module 6	Materials & Hardware
Module 7A	Maintenance Practices
Module 8	Basic Aerodynamics
Module 9A	Human Factors
Module 10	Aviation Legislation
Module 12	Helicopter Aerodynamics, Structures & Systems
Module 16	Piston Engine

4.6 BASIC EXAMINATION STANDARD

Refer Chapter 10 of this document and Appendix-II of CAR-66

4.7 CREDITS FROM THEORETICAL KNOWLEDGE REQUIREMENTS

4.7.1 General

Please Refer Chapter 3.7.1

4.7.2 Extension of a Licence to include another Category

The modular syllabus of CAR-66 often requires different levels of knowledge for the different licence categories (A, B1 and B2) within a module; therefore there are conversion examinations applicable to certain modules for licence holders wishing to include another category.

The DGCA conduct all conversion part module examinations applications should be made in the normal way.

4.7.3 Credits for paper 1, 2 and 3 of erstwhile AME Licence examination

Please Refer Chapter 3.7.2

4.7.4 Credit for Type Training/ Type Examination

An applicant who has passed the requisite knowledge examination papers, Type Training / Type Examination prior to December 2016, are eligible for CAR-66 AME Licence. The applicant will need to provide evidence of his pass and completion of practical training at the time of application. The CAR 66 licence will be issued in appropriate category with applicable limitation.

4.7.5 Examination credit validity

Please Refer Chapter 3.7.3

4.8 TYPE TRAINING AND EXAMINATION REQUIREMENT.

An applicant for grant or extension of Aircraft Maintenance Engineer's licence in Category B1 is required to meet the aircraft type training and examination requirement as specified in CAR 66..A. 45 and the endorsement of the first aircraft type rating within a given category/sub-category requires satisfactory completion of the corresponding On the Job Training, as described in Appendix III to CAR-66. Further guidance on type training and On Job Training are detailed in Chapter 9.

4.9. MAKING APPLICATION

Refer Chapter 3.8 of this document.

4.9.1 Supporting Documents

Refer Chapter 3.8.1 of this document

4.10 IF APPLICATION IS REJECTED

Please Refer Chapter 1.15

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CHAPTER 5

CATEGORY B2 LICENCE

5.1 The Category B2 Licence

5.2 Basic Knowledge Requirements

5.3 Experience Requirements

5.4 Reduction in Experience Requirements

5.5 Basic Theoretical Knowledge Requirements

5.6 Basic Examination Standard

5.7 Credits from Theoretical Knowledge Requirements.

5.8 Type Training and Examination Requirements

5.9 Making Application

5.10 If Application Is Rejected.

CHAPTER 5

CATEGORY B2 LICENCE

5.1 THE CATEGORY B2 LICENCE

The B2 licence is avionic based and permits the holder to issue -

(a) certificates of release to service after maintenance on avionic and electrical systems, avionics and electrical system within engine and mechanical systems requiring only simple tests to prove their serviceability of aircraft type endorsed on the licence;

(b) certificates of release to service after minor scheduled line maintenance and simple defect rectification within the limits of tasks specifically endorsed on the certification authorisation issued by an approved maintenance organisation of aircraft type endorsed on the licence and this certification privilege shall be restricted to work that the licence holder has personally performed in the maintenance organisation which issued the certification authorisation and limited to the rating already endorsed on the licence.

The B2 licence broadly covers the following areas:
- Instrument Systems
- Automatic Pilot Systems (fixed and rotary wing), including Auto-throttle and Auto-land Systems
- Radio Communication, Navigation and Radar Systems
- Electrical Power Generation and Distribution to Avionic Systems

Note: A CAR-66 B2 licence does not provide for any Category A licence authorisation entitlement. Where such entitlement is desired the applicant will have to obtain a Category A licence endorsement in accordance with the relevant requirements (refer to Chapter 3 and Chapter 8).

5.2 BASIC KNOWLEDGE REQUIREMENTS

An applicant for 'Category B2' aircraft maintenance engineer's licence should demonstrate by examination, a level of knowledge in the appropriate subject modules in accordance with CAR 66. The basic knowledge examinations are conducted by Central Examination Organization of DGCA.

The levels of knowledge for each licence (sub) category are directly related to the complexity of the certifications related to the corresponding licence (sub) category, which means that Category A should demonstrate a limited but adequate level of knowledge, whereas category B1, B2 and B3 should demonstrate a complete level of knowledge in the appropriate subject module.

The endorsement of aircraft type ratings requires the satisfactory completion of the relevant category B2 approved type training.

5.3 EXPERIENCE REQUIREMENTS

5.3.1 General

An applicant for a category B2 licence must have five years of practical aircraft maintenance experience on operating aircraft. This experience is to be relevant to the licence category sought and involve with a representative cross section of maintenance tasks on aircraft.

This experience should have been acquired within the 10 years preceding the application for an aircraft maintenance licence or the addition of a category or subcategory to such a licence.

Note: Maintenance experience on operating aircraft:

- Means the experience of being involved in maintenance tasks on aircraft which are being operated by airlines, air taxi organisations, owners, etc.;
- Should cover a wide range of tasks in length, complexity and variety;
- Aims at gaining sufficient experience in the real environment of maintenance as opposed to only the training school environment;
- May be gained within different types of maintenance organisations (CAR-145, M.A. Subpart F etc.) or under the supervision of independent certifying staff;
- May be combined with CAR-147 approved training so that periods of training can be intermixed with periods of experience, similar to an apprenticeship

5.3.2 'Recent Practical Maintenance Experience'

All applicants must have gained at least one year's experience on aircraft typical of the category or sub-category for which the initial aircraft maintenance engineer's licence is sought.

Of this one year's experience, six months must have been gained in the 12 months immediately before application. The remainder must have been gained in the 7 years before application.

For subsequent category /subcategory additions to an existing aircraft maintenance engineer's licence, the additional recent maintenance experience required may be less than one year, but should be at least three months. The required experience should be dependent upon the difference between the licence category/subcategory held and applied for. Such additional experience must be typical of the new licence category/subcategory sought.

5.4 REDUCTION IN EXPERIENCE REQUIREMENTS

A reduction in the experience requirement may be considered for certain applicants who fall into either category below

5.4.1 'Skilled Worker'

A skilled worker is a person who has successfully completed a course of training acceptable to the DGCA and involving the manufacture, repair, overhaul or inspection of mechanical, electrical or electronic equipment. The training would have included the use of tools and measuring devices

5.4.2 Experience Required

B2 applicants must demonstrate - 4 years' experience where the applicant satisfactorily completed training in any training organization approved under rule 133B or who has acquired a BSC degree in aircraft maintenance or Degree in Engineering from a recognized University; or,

2 years' experience where the applicant has successfully completed training in an approved maintenance organisation as a part of the syllabi of the course he has passed from a training organisation approved under rule 133B for imparting basic aircraft maintenance training:

5.4.3 'Other Experienced Applicants'

Aircraft maintenance experience gained outside a civil aircraft maintenance environment can include experience gained in armed forces, coast guards and police etc. or in aircraft manufacturing.

5.4.4 Experience Required

Twelve years of practical aircraft maintenance experience, gained outside a civil aircraft maintenance environment should be accepted as equivalent to the requirements laid down in 5.3.1 above, in the relevant category supplemented by additional experience of civil aircraft maintenance minimum of 12 months.

5.5 BASIC THEORETICAL KNOWLEDGE REQUIREMENTS

5.5.1 General

Basic knowledge levels for each category licence have been allocated relating to the complexity of certifications appropriate to the particular licence. A Category B2 applicant must demonstrate an adequate level of knowledge in the required subjects as detailed below.

5.5.2 B2 Avionic

Module 3	Electrical Fundamentals
Module 4	Electronic Fundamentals
Module 5	Digital Techniques/Electronic Instrument Systems
Module 6	Materials & Hardware
Module 7A	Maintenance Practices
Module 8	Basic Aerodynamics
Module 9A	Human Factors
Module 10	Aviation Legislation
Module 13	Aircraft Aerodynamics, Structures and Systems
Module 14	Propulsion

5.6 BASIC EXAMINATION STANDARD

Refer Chapter 10 of this document and Appendix-II of CAR-66.

5.7 CREDITS FROM THEORETICAL KNOWLEDGE REQUIREMENTS

5.7.1 General

Please Refer Chapter 3.7.1

5.7.2 Extension of a Licence to include another Category

Please Refer Chapter 4.7.2.

5.7.3 Credits for paper 1, 2 and 3 of erstwhile AME Licence examination

Please Refer Chapter 3.7.2

5.7.4 Credit for Type Training/ Type Examination

Please Refer Chapter 4.7.4.

5.7.5 Examination credit validity

Please Refer Chapter 3.7.3

5.8 TYPE TRAINING AND EXAMINATION REQUIREMENT

An applicant for grant or extension of Aircraft Maintenance Engineer's licence in Category B2 is required to meet the aircraft type training and examination requirement as specified in CAR 66..A. 45 and the endorsement of the first aircraft type rating within a given category/sub-category requires satisfactory completion of the corresponding On the Job Training, as

described in Appendix III to CAR-66. Further guidance on type training and On Job Training are detailed in Chapter 9.

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5.9 MAKING APPLICATION

Refer Chapter 3.8 of this document.

5.9.1 Supporting Documents

Refer Chapter 3.8.1 of this document.

5.10 IF APPLICATION IS REJECTED

Please Refer Chapter 1.15.

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CHAPTER 6

CATEGORY B3 LICENCE

CHAPTER 6

CATEGORY B3 LICENCE

6.1 THE CATEGORY B3 LICENCE

Category B3 is applicable to piston-engine non-pressurised aeroplanes of 2000 kg MTOM and below.

Category B3 licence permits the holders to issue certificates of release to service after maintenance on aeroplane structure, engine and mechanical and electrical systems, work on avionic systems requiring only simple tests to prove their serviceability and not requiring troubleshooting of 'piston-engine non-pressurised aeroplanes of 2000 kg Maximum Take-off Mass and below'.

NOTE—Simple test means a test described in approved maintenance data and such in nature that aircraft system serviceability is verified through aircraft controls, switches, Built-in Test Equipment (BITE), Central Maintenance Computer (CMC) or external test equipment not requiring special training." ;

6.2 BASIC KNOWLEDGE REQUIREMENTS

An applicant for 'Category B3' aircraft maintenance engineer's licence is required to demonstrate by examination, a level of knowledge in the appropriate subject modules in accordance with CAR 66. The basic knowledge examination is conducted by Central Examination Organization of DGCA.

The levels of knowledge for each licence (sub) category are directly related to the complexity of the certifications related to the corresponding licence (sub) category, which means that category A should demonstrate a limited but adequate level of knowledge, whereas category B1, B2 and B3 should demonstrate a complete level of knowledge in the appropriate subject module.

6.3 EXPERIENCE REQUIREMENTS

6.3.1 General

An applicant for a category B3 licence must have three years of practical aircraft maintenance experience on operating aircraft. The experience should be practical and involve with a representative cross section of maintenance tasks on aircraft.

This experience should have been acquired within the 10 years preceding the application for an aircraft maintenance licence or the addition of a category or subcategory to such a licence.

NOTE: In the case of a B3 licence endorsed with the rating 'piston-engine non-pressurized aeroplanes of 2000kg MTOM and below' as defined in CAR 66.A.45, the holder should show experience on at least one aircraft type per aircraft structure (metal, composite, wooden).

6.3.2 'Recent Practical Maintenance Experience'

All applicants must have gained at least one year's experience on aircraft typical of the category or sub-category for which the initial aircraft maintenance engineer's licence is sought.

Of this one year's experience, six months must have been gained in the 12 months immediately before application. The remainder must have been gained in the 7 years before application.

6.4 REDUCTION IN EXPERIENCE REQUIREMENTS

A reduction in the 3 years' experience requirement may be considered for certain applicants who fall into either category below.

6.4.1 'Skilled Worker'

A skilled worker is a person who has successfully completed a course of training acceptable to the DGCA and involving the manufacture, repair, overhaul or inspection of mechanical, electrical or electronic equipment. The training would have included the use of tools and measuring devices.

6.4.1.1 Experience Required

2 years where the applicant has satisfactorily completed training in any training organization approved under rule 133B or who has acquired a B Sc degree in aircraft maintenance or Degree in Engineering from a recognized University; or,

One year experience where the applicant has successfully completed training in an approved maintenance organisation as a part of the syllabi of the course he has passed from a training organisation approved under rule 133B for imparting basic aircraft maintenance training:

6.4.2 'Other Experienced Applicants'

Aircraft maintenance experience gained outside a civil aircraft maintenance environment can include experience gained in armed forces, coast guards and police etc. or in aircraft manufacturing.

6.4.2.1 Experience Required

Twelve years of practical aircraft maintenance experience, gained outside a civil aircraft maintenance environment should be accepted as equivalent to the requirements laid down in 6.3.1 above, in the relevant category supplemented by additional experience of civil aircraft maintenance minimum of 12 months.

6.5 BASIC THEORETICAL KNOWLEDGE REQUIREMENTS

6.5.1 General

Basic knowledge levels for each category licence have been allocated relating to the complexity of certifications appropriate to the particular licence. A Category B3 applicant must demonstrate an adequate level of knowledge in the required subjects as detailed in this section

6.5.2 piston-engine non-pressurised aeroplanes of 2000 kg MTOM and below.

Module 3	Electrical Fundamentals
Module 4	Electronic Fundamentals
Module 5	Digital Techniques/Electronic Instrument Systems
Module 6	Materials & Hardware
Module 7B	Maintenance Practices
Module 8	Basic Aerodynamics
Module 9B	Human Factors
Module 10	Aviation Legislation
Module 11C	Piston aeroplane aerodynamics, structures and systems
Module 16	Piston Engine
Module 17B	Propeller

6.6 BASIC EXAMINATION STANDARD

Refer Chapter 10 of this document and Appendix-II of CAR-66.

6.7 CREDITS FROM THEORETICAL KNOWLEDGE REQUIREMENTS

6.7.1 General

Please Refer Chapter 3.7.1

6.7.2 Extension of a Licence to include another Category

Please Refer Chapter 4.7.2

6.8 MAKING APPLICATION

Refer Chapter 3.8 of this document

6.8.1 Supporting Documents

Refer Chapter 3.8.1 of this document

6.9 IF APPLICATION IS REJECTED

Please Refer Chapter 1.15.

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CHAPTER 7

CATEGORY C LICENCE

7.1 The Category C Licence

7.2 Experience Requirements

7.3 Making Application

7.4 If Application Is Rejected.

CHAPTER 7

CATEGORY C LICENCE

7.1 THE CATEGORY C LICENCE

The Category C licence permits the release of an aircraft to service in its entirety (including all systems) by a single certificate of release to service by one overall signatory, once all base maintenance work and checks have been completed.

The principal function of the category C certifying staff is to ensure that all required maintenance has been called up and signed off by the category B1, B2 and B3 support staff, as appropriate, before issue of the certificate of release to service. Only category C personnel who also hold category B1, B2 or B3 qualifications may perform both roles in base maintenance.

7.2 EXPERIENCE REQUIREMENTS

7.2.1 General

An applicant for a category C licence must have completed a prescribed period of aircraft maintenance experience. The Category C licence may be obtained by experience gained through holding a Category B1 or B2 licence.

For category C, the experience should cover at least one of the aircraft types endorsed on the licence.

7.2.2 Large Aircraft

i. Three years of experience exercising category B1.1 or B1.3 or B2 privileges on large aircraft or as CAR 145 B1.1, B1.3 or B2 support staff, or, a combination of both; or

ii. Five years of experience exercising category B1.2 or B1.4 privileges on large aircraft or as CAR 145 B1.2 or B1.4 support staff, or a combination of both; or

7.2.3 Non Large Aircraft

Three years of experience exercising category B1 or B2 privileges on non-large aircraft or as CAR 145 B1or B2 support staff, or a combination of both.

NOTE: While an applicant to a CAR-66 Category C licence may be qualified by having 3 years' experience as category B1 or B2 certifying staff only in line maintenance, it is however recommended that any applicant for a category C holding a B1 or B2 licence demonstrate at least 12 months experience as a B1 or B2 base maintenance support staff.

Note: Refer to Chapter 4 for Category B1 or Chapter 5 for Category B2, as appropriate.

7.3 MAKING APPLICATION

Refer Chapter 3.8 of this document

7.3.1 Supporting Documents

Refer Chapter 3.8.1 of this document

7.4 IF APPLICATION IS REJECTED

Please Refer Chapter 1.15.

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CHAPTER 8

EXTENSION OF LICENCE PRIVILEGES TO INCLUDE ANOTHER CATEGORY

8.1 Introduction

8.2 Examination Requirements

8.3 Experience Requirements

8.4 Type Training and Examination Requirements

8.5 Making Application

8.5. If Application Is Rejected.

CHAPTER 8

EXTENSION OF LICENCE PRIVILEGES TO INCLUDE ANOTHER CATEGORY

8.1 INTRODUCTION

CAR-66 often requires different levels of knowledge for the different category and sub-category licences. In order to extend a licence to include another category or sub-category, additional training and/or examinations may be required.

8.2 EXAMINATION REQUIREMENTS

The CAR 66 module examinations required in order to convert to a different category or sub-category licence and therefore only be conducted by the Central Examination Office (DGCA). Applications to take these conversion examinations should be made in the same way as for initial application (refer to Chapter 10). The application, when received, will be assessed by the DGCA and the applicable conversion modules and part-modules allocated as required.

8.3 EXPERIENCE REQUIREMENTS

When applying for an additional licence category, it is necessary to provide information on duration of experience relating to whichever category you are applying for. The experience must be practical maintenance experience on an operating aircraft in the sub-category relevant to the application. The experience is to be signed by the post holder only and this procedure is to be reflected in MOE.

The Experience requirement will be reduced by 50 % if the applicant has completed an approved CAR-147 course relevant to the sub category.

The table below provides information on the experience requirements for adding a new category or sub category to an existing CAR-66 licence.

To:	A1	A2	A3	A4	B1.1	B1.2	B1.3	B1.4	B2	B3
From	-	-	-	-	-	-	-	-	-	
A1	X		6 months	6 months	2 years	6 months	2 years	1 year	2 years	6 months
A2	6 months	X	6 months	6 months	2 years	6 months	2 years	1 year	2 years	6 months
A3	6 months	6 months	X	6 months	2 years	1 year	2 years	6 months	2 years	1 year
A4	6 months	6 months	6 months	X	2 years	1 years	2 years	6 months	2 years	1 year
B1.1	NONE	6 months	6 months	6 months	X	6 months	6 months	6 months	1 year	6 months
B1.2	6 months	NONE	6 months	6 months	2 years	X	2 years	6 months	2 years	NONE
B1.3	6 months	6 months	NONE	6 months	6 months	6 months	X	6 months	1 year	6 months
B1.4	6 months	6 months	6 months	NONE	2 years	6 months	2 years	X	2 years	6 months
B2	6 months	6 months	6 months	6 months	1 year	1 year	1 year	1 year	X	1 year
B3	6 months	NONE	6 months	6 months	2 years	6 months	2 years	1 year	2 years	--

8.4 TYPE TRAINING AND EXAMINATION REQUIREMENT

An applicant for grant or extension of Aircraft Maintenance Engineer's licence in Category B1 /B2 is required to meet the aircraft type training and examination requirement as specified in CAR 66..A. 45 and the endorsement of the first aircraft type rating within a given category/sub-category requires satisfactory completion of the corresponding On the Job Training, as described in Appendix III to CAR-66. Further guidance on type training and On Job Training are detailed in Chapter 9.

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8.5 MAKING APPLICATION

Refer Chapter 3.8 of this document.

8.5.1 Supporting Documents

Refer Chapter 3.8.1 of this document.

8.6 IF APPLICATION IS REJECTED

Please Refer Chapter 1.15.

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CHAPTER 9

TYPE RATINGS

CHAPTER 9

TYPE RATINGS

9.1 INTRODUCTION

An applicant for issue CAR-66 Aircraft Maintenance Licences in Category B1, B2, and for extension of CAR 66 licence in Category B1, B2 and C may apply for inclusion of an Aircraft Type Rating subject to meeting the relevant requirements. A Category A licence does not contain type ratings.

In order that a CAR-145 or CAR M approved maintenance organisation can issue a certification authorisation to a CAR-66 licence holder in categories B1, B2 and B3 the relevant type rating must be held. Without the relevant type rating and authorisation, the licence holder cannot sign the Certificate of Release to Service for work carried out on the aircraft.

Note: There are additional requirements to be satisfied for authorisation issue. 'Certification Authorisation' means the authorisation issued to certifying staff by the organisation and which specifies the fact that they may sign certificates of release to service within the limitations stated in such authorisation on behalf of the approved organisation.

9.2 AIRCRAFT GROUPS

For the purpose of ratings on aircraft maintenance engineers licences, aircraft are classified in the following groups:

1. Group 1: complex motor-powered aircraft as well as multiple engine helicopters, aeroplanes with maximum certified operating altitude exceeding FL290, aircraft equipped with fly-by-wire systems and other aircraft requiring an aircraft type rating when defined so by the DGCA

2. Group 2: aircraft other than those in Group 1 belonging to the following subgroups:
   — sub-group 2a: single turbo-propeller engine aeroplanes
   — sub-group 2b: single turbine engine helicopters
   — sub-group 2c: single piston engine helicopters.

3. Group 3: piston engine aeroplanes other than those in Group 1.

9.3 AIRCRAFT TYPE RATINGS AND GROUP RATINGS

The DGCA issue type ratings and group ratings in accordance with CAR-66.

9.3.1 Type Ratings

The applicant is required to demonstrate the requirement for grant of Type Ratings in accordance with CAR-66, Appendix III. The aircraft type rating list can also be found in the CAR-66, Appendix I (APPENDICES to AMC for CAR-66 section).

Individual type ratings are granted following completion of appropriate type training, examination, On Job Training and experience requirements.

9.3.2 Manufacturer Group Ratings

Manufacturer group ratings may be granted after complying with the type rating requirements of two aircraft types representative of the group from the same manufacturer (See two examples below).

Types Endorsed		**Manufacturer Group Rating (as appears on licence)**
Piper PA22 + Piper PA38	=	Piper – Aeroplane single piston engine – metal structure

Types Endorsed		**Manufacturer Group Rating (as appears on licence)**
Cessna 310 + Cessna 314	**=**	Cessna – Aeroplane multi piston engine – metal structure

9.3.3 Full Group Ratings

Full group ratings may be granted after complying with the type rating requirements of three aircraft types representative of the group from different manufacturers (See example below).

Types Endorsed		Full Group Rating (as appears on licence)
Piper PA22 + Cessna C175 + Beech 33	=	Group – Aeroplane single piston engine – metal structure

Note 1: No full group rating may be granted to B1 multiple turbine engine aeroplanes, where only manufacturer group rating applies.

Note 2: Aircraft type's representative of the group is defined below-

B1 – the aircraft type includes typical systems and engines relevant to the group (i.e. Retractable undercarriage, pressurisation, variable pitch propeller, etc. for the single piston engine metal subgroup).

B2 – the aircraft type includes complex avionics systems (i.e. radio coupled autopilot, EFIS, flight guidance systems, etc.).

Note 3: A 'multiple engines' group will automatically include the corresponding 'single engine' group (i.e. a licence holder with 'Cessna –Aeroplane multi piston engine – metal structure', will automatically receive 'Cessna – Aeroplanes single piston engine – metal structure').

9.4 ENDORSEMENT WITH AIRCRAFT RATINGS

9.4.1 General

In order to be entitled to exercise certification privileges on a specific aircraft type, the holder of an aircraft maintenance engineer licence need to have his/her licence endorsed with the relevant aircraft ratings.

— For category B1, B2 or C the relevant aircraft ratings are the following:

1. For group 1 aircraft, the appropriate aircraft type rating.

2. For group 2 aircraft, the appropriate aircraft type rating, manufacturer sub-group rating or full subgroup rating.

3. For group 3 aircraft, the appropriate aircraft type rating or full group rating.

— For category B3, the relevant rating is 'piston-engine non-pressurized aero planes of 2000 kg MTOM and below.

— For category A, no rating is required, subject to compliance with the requirements of paragraph 145.A.35 of CAR-145.

The endorsement of aircraft type ratings requires the satisfactory completion of the relevant category B1; B2 or C aircraft type training. In addition to this, the endorsement of the first aircraft type rating within a given category/sub-category requires satisfactory completion of the corresponding On the Job Training, as described in Appendix B to this Chapter.

Note: In the case of B1 and B2 category, demonstration of practical experience on the aircraft type. In that case, the practical experience shall include a representative cross section of maintenance activities relevant to the licence category.

9.4.2 For Group 2 aircraft:

1. the endorsement of manufacturer sub-group ratings for category B1 and C licence holders requires complying with the aircraft type rating requirements of at least two aircraft types from the same manufacturer which combined are representative of the applicable manufacturer sub-group;

2. the endorsement of full sub-group ratings for category B1 and C licence holders requires complying with the aircraft type rating requirements of at least three aircraft types from different manufacturers which combined are representative of the applicable sub-group;

3. The endorsement of manufacturer sub-groups and full sub-group ratings for category B2 licence holders requires demonstration of practical experience which should include a representative cross section of maintenance activities relevant to the licence category and to the applicable aircraft sub-group.

9.4.3 For Group 3 aircraft:

1. The endorsement of the full group 3 rating for category B1, B2 and C licence holders requires demonstration of practical experience, which should include a representative cross section of maintenance activities relevant to the licence category and to the group 3.

2. For category B1, unless the applicant provides evidence of appropriate experience, the group 3 rating be subject to the following limitations, which will be endorsed on the licence:

— pressurized aero planes
— metal structure aero planes
— Composite structure aero planes
— Wooden structure aero planes
— Aero planes with metal tubing structure covered with fabric.

9.4.4 For the B3 licence:

1. The endorsement of the rating 'piston-engine non-pressurized aero planes of 2000 kg MTOM and below' requires demonstration of practical experience which include a representative cross-section of maintenance activities relevant to the licence category.

2. unless the applicant provides evidence of appropriate experience, the rating referred to in point 1 should be subject to the following limitations, which will be endorsed on the licence:
— wooden structure aero planes
— aero planes with metal tubing structure covered with fabric
— metal structure aero planes
— composite structure aero planes.

The table given below shows a summary of the aircraft rating requirements-

Aircraft rating requirements			
Aircraft Groups	**B1/B3 Licence**	**B2 licence**	**C licence**
Group 1 □ Complex motor powered aircraft. □ Multiple engine helicopters. □ Aeroplanes certified above FL290. □ Aircraft equipped with Fly-by-wire. □ Other aircraft when defined DGCA	**(For B1)** **Individual TYPE RATING** Type training: - Theory + examination - Practical + assessment **PLUS** OJT (for first aircraft in licence subcategory)	**Individual TYPE RATING** Type training: - Theory + examination - Practical + assessment **PLUS** OJT (for first aircraft in licence category)	**Individual TYPE RATING** Type training: - Theory + examination
Group 2: **Subgroups:** **2a: single turboprop aeroplanes** (*) **2b: single turbine engine helicopters** (*) **2c: single piston-engine helicopters** (*) (*) Except those classified in Group 1.	**(For B1.1, B1.3, B1.4)** **Individual TYPE RATING** (type training + OJT) **or** (type examination + practical experience) **Full SUBGROUP RATING** (type training + OJT) **or** (type examination + practical experience) on at least 3 aircraft representative of that subgroup **Manufacturer SUBGROUP RATING** (type training + OJT) **or** (type examination + practical experience) on at least 2 aircraft representative of that manufacturer subgroup	**Individual TYPE RATING** (type training + OJT) **or** (type examination + practical experience) **Full SUBGROUP RATING** based on demonstration of practical experience **Manufacturer SUBGROUP RATING** based on demonstration of practical experience	**Individual TYPE RATING** type training **or** type examination **Full SUBGROUP RATING** type training **or** type examination on at least 3 aircraft representative of that subgroup **Manufacturer SUBGROUP RATING** type training **or** type examination on at least 2 aircraft representative of that manufacturer subgroup
Group 3 **Piston-engine aeroplanes** (except those classified in Group 1.	**(For B1.2)** **Individual TYPE RATING** (type training + OJT) **or** (type examination + practical experience) **Full GROUP 3 RATING**	**Individual TYPE RATING** (type training + OJT) **or** (type examination +	**Individual TYPE RATING** type training **or** type examination **Full GROUP 3 RATING**

	based on demonstration of practical experience **Limitations:** □ Pressurised aeroplanes □ Metal aeroplanes □ Composite aeroplanes □ Wooden aeroplanes □ Metal tubing & fabric aeroplanes	practical experience) **Full GROUP 3 RATING** based on demonstration of practical experience	based on demonstration of practical experience
Piston-engine non pressurized aero planes of 2 000 kg MTOM and below	**(For B3)** **FULL RATING "Piston-engine non-pressurized aero planes of 2 000 kg MTOM and below"** based on demonstration of practical experience **Limitations:** ▪ Metal aero planes ▪ Composite aero planes ▪ Wooden aero planes ▪ Metal tubing & fabric aero planes	**Not applicable**	**Not applicable**

9.5 AIRCRAFT TYPE TRAINING

Aircraft type training may be subdivided in airframe and/or power plant and/or avionics/ electrical systems.

Airframe type training means type training including all relevant aircraft structure and electrical and mechanical systems excluding the power plant.

Power plant type training means type training on the bare engine, including the build-up to a quick engine change unit.

Avionics/Electrical systems type training means type training training on avionics and electrical systems covered by but not necessarily limited to ATA (Air Transport Association) Chapters 22, 23, 24, 25, 27, 31, 33, 34, 42, 44, 45, 46, 73 and 77 or equivalent.

9.6 AIRCRAFT TYPE TRAINING AND EXAMINATION STANDARD

Please Refer Appendix B of this Chapter.

9.7 TYPE RATING LIMITATIONS AND REMOVAL

9.7.1 Requirements for Removal of Limitation(s) from Type Rating limitations can be removed upon:

1. Demonstration of appropriate experience; or
2. after a satisfactory practical assessment performed by the DGCA.

9.8 VALIDITY OF LICENCES AND LICENCE RENEWAL

The aircraft maintenance engineer's licence becomes invalid after five years of its last issue or renewal, unless the holder submits his/her aircraft maintenance engineer's licence to the DGCA, in order to verify the information contained in the licence is the same as that contained in the DGCA records. For further information Refer Airworthiness Procedures Manual, Chapter 17 available on DGCA website. .

The holder of an aircraft maintenance engineer's licence should complete the CA Form 19-03 and submit it with the holder's copy of the licence to the DGCA, unless the holder works in a maintenance organization approved in accordance with CAR 145 that has a procedure in its exposition where by such organisation may submit the necessary documentation on behalf of the aircraft maintenance engineer's licence holder.

Any certification privileges based upon an aircraft maintenance engineer's licence becomes invalid as soon as the aircraft maintenance engineer's licence is invalid. The aircraft maintenance engineer's licence is only valid when issued and/or changed by DGCA and when the holder has signed the document.

9.9 MAKING YOUR APPLICATION

An application for an aircraft maintenance engineer's licence should be made on CA Form 19-01 (initial issue) with necessary documents and fees to DGCA. Current forms may be downloaded from our web site (http://dgca.nic.in/). Refer to Appendix A to Chapter 1 for information on form numbers.

9.8.1 Supporting Documents

Proof of Age – 10th standard certificate from a recognized board or its equivalent or the Birth certificate issued by municipal corporation /committee should be the documents acceptable as proof of age.

Educational qualification - 12th Standard Certificate from a recognized board or a Diploma certificate recognized by AICTE or any certificate acceptable to DGCA as equivalent qualification.

Identity proof- Passport or any photo identity card issued by the Government.

Result sheets – The result cards of applicable paper/module issued by CEO.

Course Completion Certificates – issued by approved aircraft maintenance training organisation/ Degree in Engineering Certificate (if applicable)/ Defence experience certificate.

Logbook – confirming experience and On Job Training Record

Medical Certificate on for CA 19-o6

Note: Having clear concise supporting data will enable us to issue licences more effectively and with less risk of errors or rejections.

9.10 IF YOUR APPLICATION FAILS

Please Refer Chapter 1.15.

APPENDICES TO CHAPTER 9

Appendix A	Category A Minor Scheduled Line Maintenance Tasks
Appendix B	Type Training and Examination Standard
Appendix C	Aircraft Type Practical Experience List of Tasks
Appendix-D	Format of OJT completion task.

APPENDIX A- CATEGORY A MINOR SCHEDULED LINE MAINTENANCE TASKS

The definition of minor scheduled line maintenance tasks is any minor scheduled inspection or check up to and including a weekly check specified in the operators approved aircraft maintenance programme. For aircraft maintenance programmes that do not specify a weekly check, DGCA will determine the most significant check that is considered equivalent to a weekly check.

Training will be completed before the appropriate tasks are permitted to be carried out by the Category A licence holder. List of task are detailed in CAR 145. A 30 (g)

(a) Replacement of wheel assemblies.

(b) Replacement of wheel brake units.

(c) Replacement of emergency equipment.

(d) Replacement of ovens, boilers and beverage makers.

(e) Replacement of internal and external lights, filaments and flash tubes.

(f) Replacement of windscreen wiper blades.

(g) Replacement of passenger and cabin crew seats, seat belts and harnesses.

(h) Closing of cowlings and re fitment of quick access inspection panels.

(i) Replacement of toilet system components but excluding gate valves.

(j) Simple repairs and replacement of internal compartment doors and placards but excluding doors forming part of a pressure structure.

(k) Simple repairs and replacement of overhead storage compartment doors and Cabin furnishing items.

(l) Replacement of static wicks.

(m) Replacement of aircraft main and APU aircraft batteries.

(n) Replacement of inflight entertainment system components other than public address.

(o) Routine lubrication and replenishment of all system fluids and gases.

(p) The de-activation only of sub-systems and aircraft components as permitted by the operator's minimum equipment list where such de- activation is agreed by DGCA as a simple task.

(q) Inspection for and removal of de-icing/anti-icing fluid residues, including Removal /closure of panels, cowls or covers or the use of special tools.

(r) Any other task agreed by DGCA as a simple task for a particular aircraft type.

This may include defect deferment when all the following conditions are met:

- There is no need for troubleshooting; and
- The task is in the MEL; and
- The maintenance action required by the MEL is agreed by the competent authority to be simple.

In the particular case of helicopters, and in addition to the items above,

The following:

(s) Removal and installation of Helicopter Emergency Medical Service (HEMS) Simple internal medical equipment.

(t) Removal and installation of external cargo provisions (i.e., external hook, mirrors) Other than the hoist.

(u) Removal and installation of quick release external cameras and search lights.

(v) Removal and installation of emergency float bags, not including the bottles.

(w) Removal and installation of external doors fitted with quick release attachments.

(x) Removal and installation of snow pads/skid wear shoes/slump protection pads.

No task which requires troubleshooting should be part of the authorised maintenance actions. Release to service after rectification of deferred defects should be permitted as long as the task is listed above.

Note: This list will be updated in accordance with CAR 145.A.30 (g).

APPENDIX B- TYPE TRAINING AND EXAMINATION STANDARD

Aircraft type training consist of theoretical training and examination, and, except for the category C ratings, practical training and assessment.

(a) Theoretical training and examination is conducted by a maintenance training organisation appropriately approved in accordance with CAR-147 or, when conducted by other organisations, as directly approved by the DGCA.

(b) The practical training and assessment is conducted by a maintenance training organisation appropriately approved in accordance with CAR- 147 or, when conducted by other organisations, as directly approved by the DGCA. The practical task includes a representative cross section of maintenance activities relevant to the aircraft type. On job Training is required to be started and completed within the 3 years preceding the application for a type rating endorsement.

1. TYPE TRAINING LEVELS

The three levels listed below define the objectives, the depth of training and level of knowledge that training is intended to achieve.

Level 1

A brief overview of the airframe, systems and power plants as outlined in the Systems description Section of the Aircraft Maintenance Manual / Instructions for Continued Airworthiness.

Course objectives: Upon completion of the course, the student will be able to:

a) provide a simple description of the whole subject, using common words and examples, using typical terms and identify safety precautions related to the air-frame, its systems and power plant;
b) Identify aircraft manuals, maintenance practices important to the airframe, its systems and power plant;
c) Define the general layout of the aircraft's major systems;
d) Define the general layout and characteristics of the power plant;
e) Identify special tooling and test equipment used with the aircraft

Level 2

Basic system overview of controls, indicators, principal components including their location and purpose, servicing and minor troubleshooting. General knowledge of the theoretical and practical aspects of the subject

Course objectives: In addition to the information contained in the Level 1, training, at the completion of this Level 2, training the student will be able to:

(a) Understand the theoretical fundamentals; apply knowledge in a practical manner using detailed procedures;

(b) Recall the safety precautions to be observed when working on or near the aircraft, power plant and systems;

(c) Describe systems and aircraft handling particularly access, power availability and sources;

(d) Identify the locations of the principal components;

(e) Explain the normal functioning of each major system, including terminology and nomenclature;

(f) Perform the procedures for servicing associated with the aircraft for the following systems: Fuel, Power Plants, Hydraulics, Landing Gear, Water/Waste, and Oxygen;

(g) Demonstrate proficiency in use of crew reports and on-board reporting systems (minor troubleshooting) and determine aircraft airworthiness per the MEL/CDL;

(h) Demonstrate the use, interpretation and application of appropriate documentation including instructions for continued airworthiness, maintenance manual, illustrated parts catalogue, etc.

Level 3

Detailed description, operation, component location, removal/installation and bite and troubleshooting procedures to maintenance manual level.

Course objectives: In addition to the information contained in Level 1 and Level 2 training, at the completion of Level III, the student will be able to:

(a) demonstrate a theoretical knowledge of aircraft systems and structures and interrelationships with other systems, provide a detailed description of the subject using theoretical fundamentals and specific examples and to interpret results from various sources and measurements and apply corrective action where appropriate;

(b) Perform system, power plant, component and functional checks as specified in the maintenance manual.

(c) Demonstrate the use, interpret and apply appropriate documentation including structural repair manual, troubleshooting manual, etc.;

(d) Correlate information for the purpose of making decisions in respect of fault diagnosis and rectification to maintenance manual level.

(e) Describe procedures for replacement of components unique to aircraft type

2. AIRCRAFT TYPE TRAINING STANDARD

Although aircraft type training includes both theoretical and practical elements, courses can be approved for the theoretical element, the practical element or for a combination of both.

1) Theoretical element

(a) Objective

On completion of a theoretical training course the student will be able to demonstrate, to the levels identified in the Appendix III syllabus, the detailed theoretical knowledge of the aircraft's applicable systems, structure, operations, maintenance, repair, and troubleshooting according to approved maintenance data. The student will be able to demonstrate the use of manuals and approved procedures, including the knowledge of relevant inspections and limitations.

(b) Level of training:

Training levels are those levels defined in point 1 above. After the first type course for category C certifying staff all subsequent courses need only be to level 1. During a level 3 theoretical training, level 1 and 2 training material may be used to teach the full scope of the chapter if required. However, during the training the majority of the course material and training time should be at the higher level

(c) Duration:

The theoretical training minimum tuition hours are contained in the following table:

Category	Hours
Aeroplanes with a maximum take-off mass above 30 000 kg:	
B1.1	150
B1.2	120
B2	100
C	30
Aeroplanes with a maximum take-off mass equal or less than 30 000 kg and above 5 700 kg:	
B1.1	120
B1.2	100
B2	100

C	25
Aeroplanes with a maximum take-off mass of 5 700 kg and below	
B1.1	80
B1.2	60
B2	60
C	15
Helicopters(2)	
B1.3	120
B1.4	100
B2	100
C	25
(1) For non-pressurised piston engine aeroplanes below 2 000 kg MTOM the minimum duration can be reduced by 50 %. (2) For helicopters in group 2 (as defined in point 66.A.42) the minimum duration can be reduced by 30 %.	

For the purpose of the table above, a tuition hour means 60 minutes of teaching and excludes any breaks, examination, revision, preparation and aircraft visit. These hours apply only to theoretical courses for complete aircraft/engine combinations according to the type rating as defined by the DGCA.

(d) Justification of course duration:

Training courses carried out in a maintenance training organisation approved in accordance with CAR-147 and courses directly approved by the DGCA should justify their hour duration and the coverage of the full syllabus by a training needs analysis based on: the design of the aircraft type, its maintenance needs and the types of operation, detailed analysis of applicable chapters, detailed competency analysis showing that the objectives are fully met.

Where the training needs analysis shows that more hours are needed, course lengths will be longer than the minimum specified in the table. Further details on the training need analysis is provided in AMC to Paragraph 3.1(d) of Appendix III to CAR-66 "Aircraft Type Training and Examination Standard. On-the-Job Training"

Similarly, tuition hours of differences courses or other training course combinations (such as combined B1/B2 courses), and in cases of theoretical type training courses should be justified to the DGCA by the training needs analysis as described above.

In addition, the course must describe and justify the following:

— The minimum attendance required to the trainee, in order to meet the objectives of the course.

— The maximum number of hours of training per day, taking into account pedagogical and human factors principles.

If the minimum attendance required is not met, the certificate of recognition should not be issued. Additional training may be provided by the training organisation in order to meet the minimum attendance time.

(e) Content:

As a minimum, the elements in the Syllabus below that are specific to the aircraft type to be covered. Additional elements introduced due to type variations, technological changes, etc. are also be included. The training syllabuses are focused on mechanical and electrical aspects for B1 personnel, and electrical and avionic aspects for B2.

Level Chapters	Aeroplanes Turbine		Aeroplane Piston		Helicopter turbine		Helicopter Piston		Avionics
	B1	C	B1	C	B1	C	B1	C	B2
Introduction module:									
05 Time limits/maintenance checks	1	1	1	1	1	1	1	1	1
06 Dimensions/Areas (MTOM, etc.)	1	1	1	1	1	1	1	1	1
07 Lifting and Shoring	1	1	1	1	1	1	1	1	1
08 Levelling and weighing	1	1	1	1	1	1	1	1	1
09 Towing and taxiing	1	1	1	1	1	1	1	1	1
10 Parking/mooring, Storing and Return to Service	1	1	1	1	1	1	1	1	1
11 Placards and Markings	1	1	1	1	1	1	1	1	1
12 Servicing	1	1	1	1	1	1	1	1	1
20 Standard practices — only type particular	1	1	1	1	1	1	1	1	1
Helicopters									
18. Vibration and Noise Analysis(Blade tracking)	–	--	–	–	3	1	3	1	–
60 Standard Practices Rotor	-	-	-	-	3	1	3	1	-
62 Rotors	–	–	–	–	3	1	3	1	1
62A Rotors — Monitoring and indicating	–	–	–	–	3	1	3	1	3
63 Rotor Drives	--	--	--	--	3	1	3	1	1
63A Rotor Drives — Monitoring and indicating	--	--	--	--	3	1	3	1	3
64 Tail Rotor	–	–	–	–	3	1	3	1	1
64A Tail rotor — Monitoring and indicating	--	--	--	--	3	1	3	1	3

Level Chapters	Aeroplanes Turbine		Aeroplane Piston		Helicopter turbine		Helicopter Piston		Avionics
	B1	C	B1	C	B1	C	B1	C	B2
65 Tail Rotor Drive	--	–	–	–	3	1	3	1	1
65A Tail Rotor Drive — Monitoring and indicating	--	--	--	--	3	1	3	1	3
66 Folding Blades/Pylon	–	–	–	–	3	1	3	1	–
67 Rotors Flight Control	--	--	--	--	3	1	3	1	--
53 Airframe Structure (Helicopter)	--	--	--	--	3	1	3	1	--
25 Emergency Flotation Equipment	--	--	--	--	3	1	3	1	1
Airframe Structure									
51 Standard practices and structures (damage classification, assessment and repair)	3	1	3	1	–	–	–	–	1
53 Fuselage	3	1	3	1	–	–	–	–	1
54 Nacelles/Pylons	3	1	3	1	–	–	–	–	1
55 Stabilizers	3	1	3	1	–	–	–	–	1
56 Windows	3	1	3	1	–	–	–	–	1
57 Wings	3	1	3	1	–	–	–	–	1
27A Flight Control Surfaces (All)	3	1	3	1	–	–	–	–	1
52 Doors	3	1	3	1	–	–	–	–	1
Zonal & Station Identification Systems	1	1	1	1	1	1	1	1	1
Airframe Systems									
21 Air Conditioning	3	1	3	1	3	1	3	1	3
21A Air Supply	3	1	3	1	1	3	3	1	2
21B Pressurization	3	1	3	1	3	1	3	1	3
21C Safety & Warning Devices	3	1	3	1	3	1	3	1	3
22 Auto flights	2	1	2	1	2	1	2	1	3
23 Communication	2	1	2	1	2	1	2	1	3
24 Electrical Power	3	1	3	1	3	1	3	1	3
25 Equipment & Furnishings	3	1	3	1	3	1	3	1	1
25A Electronic Emergency Equip. & Cabin Entertainment Equipment	1	1	1	1	1	1	1	1	3
26 Fire Protection	3	1	3	1	3	1	3	1	3

Level Chapters	Aeroplanes Turbine		Aeroplane Piston		Helicopter turbine		Helicopter Piston		Avionics
	B1	C	B1	C	B1	C	B1	C	B2
27 Flight Controls	3	1	3	1	3	1	3	1	2
27A Sys. Operation: Electrical/Fly-by-Wire	3	1	–	–	–	–	–	–	3
28 Fuel Systems	3	1	3	1	3	1	3	1	2
28A Fuel Systems — Monitoring and indication	3	1	3	1	3	1	3	1	3
29 Hydraulic Power	3	1	3	1	3	1	3	1	2
29A Hydraulic Power — Monitoring and indicating	3	1	3	1	3	1	3	1	3
30 Ice & Rain Protection	3	1	3	1	3	1	3	1	3
31 Indicating/Recording Systems	3	1	3	1	3	1	3	1	3
31A Instrument Systems	3	1	3	1	3	1	3	1	3
32 Landing Gear	3	1	3	1	3	1	3	1	2
32A Landing Gear — Monitoring and indicating	3	1	3	1	3	1	3	1	3
33 Lights	3	1	3	1	3	1	3	1	3
34 Navigation	2	1	2	1	2	1	2	1	3
35 Oxygen	3	1	3	1	–	–	–	–	2
36 Pneumatic	3	1	3	1	3	1	3	1	2
36A Pneumatic — Monitoring and indicating	3	1	3	1	3	1	3	1	3
37 Vacuum	3	1	3	1	3	1	3	1	2
38 Water/Waste	3	1	3	1	--	--	--	--	2
41 Water Ballast	3	1	3	1	--	--	--	--	1
42 Integrated modular avionics	2	1	2	1	2	1	2	1	3
44 Cabin Systems	2	1	2	1	2	1	2	1	3
45 On-board Maintenance Systems	3	1	3	1	3	1	–	–	3
46 Information Systems	2	1	2	1	2	1	2	1	3
50 Cargo and Accessory Compartments	3	1	3	1	3	1	3	1	1
Turbine Engines:									
70 Standard Practices — Engines,	3	1	–	–	3	1	–	–	1
70A constructional arrangement and operation (Installation Inlet, Compressors, Combustion	3	1	--	--	3	1	--	--	1

Level Chapters	Aeroplanes Turbine		Aeroplane Piston		Helicopter turbine		Helicopter Piston		Avionics
	B1	C	B1	C	B1	C	B1	C	B2
Section, Turbine Section, Bearings and Seals, Lubrication Systems).									
70B Engine Performance	3	1	–	–	3	1	–	–	1
71 Power plant	3	1	–	–	3	1	–	–	1
72 Engine Turbine/Turbo Prop/Ducted Fan/Unducted fan	3	1	--	--	3	1	--	--	1
73 Engine Fuel and Control	3	1	–	–	3	1	–	–	1
75 Air	3	1	–	–	3	1	–	–	1
76 Engine controls	3	1	–	–	3	1	–	–	1
78 Exhaust	3	1	–	–	3	1	–	–	1
79 Oil	3	1	–	–	3	1	–	–	1
80 Starting	3	1	–	–	3	1	–	–	1
82 water injection	3	1	–	–	3	1	–	–	1
83 Accessory Gear Boxes	3	1	–	–	3	1	–	–	1
84 Propulsion Augmentation	3	1	–	–	3	1	–	–	1
73A FADEC	2	1	–	–	2	1	–	–	3
74 Ignition	3	1	–	–	3	1	–	–	3
77 Engine Indicating Systems	3	1	–	–	3	1	–	–	3
49 Auxiliary Power Units (APUs)	3	1	–	–	--	--	–	–	2
Piston Engines:									
70 Standard Practices — Engines	--	--	3	1	–	–	3	1	1
70A Constructional arrangement and operation (Installation, Carburettors, Fuel injection systems, Induction, Exhaust and Cooling Systems, Supercharging/ Turbocharging, Lubrication Systems).	–	–	3	1	--	--	3	1	1
70B Engine Performance	_	_	3	1	--	--	3	1	1
71 Powerplant	–	–	3	1	–	–	3	1	1
73 Engine Fuel and Control	–	–	3	1	–	–	3	1	1

Level Chapters	Aeroplanes Turbine		Aeroplane Piston		Helicopter turbine		Helicopter Piston		Avionics
	B1	C	B1	C	B1	C	B1	C	B2
76 Engine Control	–	–	3	1	–	–	3	1	1
79 Oil	–	–	3	1	–	–	3	1	1
80 Starting	–	–	3	1	–	–	3	1	1
81 Turbine	--	--	3	1	--	--	3	1	1
82 Water Injections	–	–	3	1	–	–	3	1	1
83 Accessory Gear Boxes	–	–	3	1	–	–	3	1	1
84 Propulsion Augmentation	–	–	3	1	–	–	3	1	1
73A FADEC	–	–	3	1	–	–	3	1	3
74 Ignition	–	–	3	1	–	–	3	1	3
77 Engine Indication Systems	–	–	3	1	–	–	3	1	3
Propellers:									
60A Standard Practices — Propeller	3	1	3	1	–	–	–	–	1
61 Propellers/Propulsion	3	1	3	1	–	–	–	–	1
61A Propeller Construction	3	1	3	1	--	--	--	--	1
61B Propeller Pitch Control	3	1	3	1	–	–	–	–	–
61C Propeller Synchronizing	3	1	3	1	–	–	–	–	1
61D Propeller Electronic control	2	1	2	1	–	–	–	–	3
61E Propeller Ice Protection	3	1	3	1	–	–	–	–	–
61F Propeller Maintenance	3	1	3	1	–	–	–	–	1

(f) Multimedia Based Training (MBT) methods may be used to satisfy the theoretical training element either in the classroom or in a virtual controlled environment subject to the acceptance of the DGCA approving the training course.

3. PRACTICAL ELEMENT

a) Objective:

The objective of practical training is to gain the required competence in performing safe maintenance, inspections and routine work according to the maintenance manual and other relevant instructions and tasks as appropriate for the type of aircraft, for example troubleshooting, repairs, adjustments, replacements, rigging and functional checks. It includes the awareness of the use of all technical literature and documentation for the aircraft, the use of specialist/special tooling and test equipment for per-forming removal and replacement of components and modules unique to type, including any on-wing maintenance

activity. Further details on the Practical Training is provided in AMC to Paragraphs 1(b), 3.2 and 4.2 of Appendix III to CAR-66 "Aircraft Type Training and Examination Standard. On-the-Job Training"

b) Content:

At least 50 % of the crossed items in the table below, which are relevant to the particular aircraft type, should be completed as part of the practical training.

Tasks crossed represent subjects that are important for practical training purposes to ensure that the operation, function, installation and safety significance of key maintenance tasks is adequately addressed; particularly where these cannot be fully explained by theoretical training alone. Although the list details the minimum practical training subjects, other items may be added where applicable to the particular aircraft type.

Tasks to be completed should be representative of the aircraft and systems both in complexity and in the technical input required to complete that task. While relatively simple tasks may be included, other more complex tasks should also be incorporated and undertaken as appropriate to the aircraft type.

Glossary of table: LOC: Location; FOT: Functional / Operation Test; SGH: Service and Ground; Handling; R/I: Removal / Installation; MEL: Minimum Equipment List; TS: Trouble Shooting

Chapters	B1/B2	B1					B2				
	LOC	FOT	SGH	R/I	MEL	TS	FOT	SGH	R/I	MEL	TS
Introduction module:											
05 Time limits/maintenance checks	X/X	--	--	--	--	--	--	--	--	--	-
06 Dimensions/Areas (MTOM, etc.)	X/X	--	--	--	--	--	--	--	--	--	-
07 Lifting and Shoring	X/X	--	--	--	--	--	--	--	--	--	-
08 Levelling and weighing	X/X	--	X	--	--	--	--	X	--	--	-
09 Towing and Taxing	X/X	--	X	--	--	--	--	X	--	--	-
10 Parking/Mooring storing and return to service	X/X	--	X	--	--	--	--	X	--	--	-
11 Playcard and marking	X/X	--	--	--	--	--	--	--	--	--	-
12 Servicing	X/X	--	X	--	--	--	--	X	--	--	-
20 Standard practices –only type particular	X/X	--	X	--	--	--	--	X	--	--	-

Chapters	B1/B2	B1					B2				
	LOC	FOT	SGH	R/I	MEL	TS	FOT	SGH	R/I	MEL	TS
Helicopters:											
18 Vibration and Noise Analysis (Blade tracking)	X/--	--	--	--	--	X	--	--	--	--	-
60 Standard Practices Rotor — only type specific	X/X	--	X	--	--	--	--	X	--	--	-
62 Rotors	X/--	--	X	X	--	X	--	--	--	--	-
62A Rotors — Monitoring and indicating	X/X	X	X	X	X	X	--	--	X	--	x
63 Rotor Drives	X/--	X	--	--	--	X	--	--	--	--	-
63A Rotor Drives — Monitoring and indicating	X/X	X	--	X	X	X	--	--	X	--	X
64 Tail Rotor	X/--	--	X	--	--	X	--	--	--	--	-
64A Tail rotor -Monitoring and indicating	X/X	X	--	X	X	X	--	--	X	--	X
65 Tail Rotor Drive	X/--	X	--	--	--	X	--	--	--	--	-
65A Tail Rotor Drive — Monitoring and indicating	X/X	X	--	X	X	X	--	--	X	--	X
66 Folding Blades/Pylon	X/--	X	X	--	--	X	--	--	--	--	-
67 Rotors Flight Control	X/--	X	X	--	X	X	--	--	--	--	-
53 Airframe Structure (Helicopter) Note: covered under Airframe structures											
25 Emergency Flotation Equipment	X/X	X	X	X	X	X	X	X	--	--	-
Airframe structures:											
51 Standard Practices and Structures (damage classification, assessment and repair											
53 Fuselage	X/--	--	--	--	--	X	--	--	--	--	-
54 Nacelles/Pylons	X/--	--	--	--	--	--	--	--	--	--	-
55 Stabilisers	X/--	--	--	--	--	--	--	--	--	--	-
56 Windows	X/--	--	--	--	--	X	--	--	--	--	-

Chapters	B1/B2	B1					B2				
	LOC	FOT	SGH	R/I	MEL	TS	FOT	SGH	R/I	MEL	TS
57 Wings	X/--	--	--	--	--	--	--	--	--	--	-
27A Flight Control Surfaces	X/--	--	--	--	--	X	--	--	--	--	-
52 Doors	X/X	X	X	--	--	--	--	X	--	--	-
Airframe systems:											
21 Air Conditioning	X/X	X	X	--	X	X	X	X	--	X	X
21A Air Supply	X/X	X	--	--	--	--	X	--	--	--	-
21B Pressurisation	X/X	X	--	--	X	X	X	--	--	X	X
21C Safety and warning Devices	X/X	--	X	--	--	--	--	X	--	--	-
22 Autoflight	X/X	--	--	--	X	--	X	X	X	X	X
23 Communications	X/X	--	X	--	X	--	X	X	X	X	X
24 Electrical Power	X/X	X	X	X	X	X	X	X	X	X	X
25 Equipment and Furnishings	X/X	X	X	X	--	--	X	X	X	--	-
25A Electronic Equipment including emergency equipment	X/X	X	X	X	--	--	X	X	X	--	-
26 Fire Protection	X/X	X	X	X	X	X	X	X	X	X	X
27 Flight Controls	X/X	X	X	X	X	X	X	--	--	--	-
27A Sys. Operation: Electrical/Fly-by- Wire	X/X	X	X	X	X	--	X	--	X	--	X
28 Fuel Systems	X/X	X	X	X	X	X	X	X	--	X	-
28A Fuel Systems — Monitoring and indicating	X/X	X	--	--	--	--	X	--	X	--	X
29 Hydraulic Power	X/X	X	X	X	X	X	X	X	--	X	-
29A Hydraulic Power — Monitoring and indicating	X/X	X	--	X	X	X	X	--	X	X	X
30 Ice and Rain Protection	X/X	X	X	--	X	X	X	X	--	X	X
31 Indicating/Recording Systems X	X/X	X	X	X	X	X	X	X	X	X	X
31A Instrument Systems	X/X	X	X	X	X	X	X	X	X	X	X
32 Landing Gear	X/X	X	X	X	X	X	X	X	X	X	-
32A Landing Gear — Monitoring and indicating	X/X	X	--	X	X	X	X	--	X	X	X

Chapters	B1/B2	B1					B2				
	LOC	FOT	SGH	R/I	MEL	TS	FOT	SGH	R/I	MEL	TS
33 Lights	X/X	X	X	--	X	--	X	X	X	X	-
34 Navigation	X/X	--	X	--	X	--	X	X	X	X	X
35 Oxygen	X/--	X	X	X	--	--	X	X	--	--	-
36 Pneumatic	X/--	X	--	X	X	X	X	--	X	X	X
36A Pneumatic — Monitoring and indicating	X/X	X	X	X	X	X	X	X	X	X	X
37 Vacuum	X/--	X	--	X	X	X	--	--	--	--	-
38 Water/Waste	X/--	X	X	--	--	--	X	X	--	--	-
41 Water Ballast	X/--	--	--	--	--	--	--	--	--	--	-
42 Integrated modular avionics	X/X	--	--	--	--	--	X	X	X	X	X
44 Cabin Systems	X/X	--	--	--	--	--	X	X	X	X	X
45 On-Board Maintenance System (or covered in 31)	X/X	X	X	X	X	X	X	X	X	X	X
46 Information Systems	X/X	--	--	--	--	--	X	--	X	X	X
50 Cargo and Accessory Compartments	X/X	--	X	--	--	--	--	--	--	--	-
Turbine/Piston Engine Module:											
70 Standard Practices — Engines — only type particular	---	--	X	--	--	--	--	X	--	--	-
70A Constructional arrangement and operation (Installation Inlet, Compressors, Combustion Section, Turbine Section, Bearings and Seals, Lubrication Systems)	X/X	--	--	--	--	--	--	--	--	-	-
Turbine engines:											
70B Engine Performance	--	--	--	--	--	X	--	--	--	--	-
71 Power Plant	X/--	X	X	--	--	--	--	X	--	--	-
72 Engine Turbine/Turbo Prop/Ducted Fan/ Unducted fan	X/--	--	--	--	--	--	--	--	--	--	-
73 Engine Fuel and Control	X/X	X	--	--	--	--	--	--	--	--	-

Chapters	B1/B2	B1					B2				
	LOC	FOT	SGH	R/I	MEL	TS	FOT	SGH	R/I	MEL	TS
73A FADEC Systems	X/X	X	--	X	X	X	X	--	X	X	X
74 Ignition	X/X	X	--	--	--	--	X	--	--	--	-
75 Air	X/--	--	--	X	--	X	--	--	--	--	-
76 Engine Controls	X/--	X	--	--	--	X	--	--	--	--	-
77 Engine Indicating	X/X	X	--	--	X	X	X	--	--	X	X
78 Exhaust	X/--	X	--	--	X	--	--	--	--	--	-
79 Oil	X/--	--	X	X	--	--	--	--	--	--	-
80 Starting	X/--	X	--	--	X	X	--	--	--	--	-
82 Water Injection	X/--	X	--	--	--	--	--	--	--	--	-
83 Accessory Gearboxes	X/--	--	X	--	--	--	--	--	--	--	-
84 Propulsion Augmentation	X/--	X	--	--	--	--	--	--	--	--	-
Auxiliary Power Units (APUs):											
49 Auxiliary Power Units (APUs)	X/--	X	X	--	--	X	--	--	--	--	-
Piston Engines:											
70 Standard Practices — Engines — only type particular	--	--	X	--	--	--	--	X	--	--	-
70A Constructional arrangement and operation (Installation Inlet, Compressors, Combustion Section, Turbine Section, Bearings and Seals, Lubrication Systems)	X/X	--	--	--	--	--	--	--	--	-	-
70B Engine Performance	--	--	--	--	--	X	--	--	--	--	-
71 Power Plant	X/--	X	X	--	--	--	--	X	--	--	-
73 Engine Fuel and Control	X/X	X	--	--	--	--	--	--	--	--	-
73A FADEC Systems	X/X	X	--	X	X	X	X	X	X	X	X
74 Ignition	X/X	X	--	--	--	--	X	--	--	--	-
76 Engine Controls	X/--	X	--	--	--	X	--	--	--	--	-

Chapters	B1/B2	B1					B2				
	LOC	FOT	SGH	R/I	MEL	TS	FOT	SGH	R/I	MEL	TS
77 Engine Indicating	X/X	X	--	--	X	X	X	--	--	X	X
78 Exhaust	X/--	X	--	--	X	X	--	--	--	--	-
79 Oil	X/--	--	X	X	--	--	--	--	--	--	-
80 Starting	X/--	X	--	--	X	X	--	--	--	--	-
81 Turbines	X/--	X	X	X	--	X	--	--	--	--	-
82 Water Injection	X/--	X	--	--	--	--	--	--	--	--	-
83 Accessory Gearboxes	X/--	--	X	X	--	--	--	--	--	--	-
84 Propulsion Augmentation	X/--	X	--	--	--	--	--	--	--	--	-
Propellers:											
60A Standard Practices — Propeller	--	--	--	X	--	--	--	--	--	--	-
61 Propellers/Propulsion	X/X	X	X	--	X	X	--	--	--	--	-
61A Propeller Construction	X/--	--	X	--	--	--	--	--	--	--	-
61B Propeller Pitch Control	X/--	X	--	X	X	X	--	--	--	--	-
61C Propeller Synchronising	X/--	X	--	--	--	X	--	--	--	X	-
61D Propeller Electronic control	X/X	X	X	X	X	X	X	X	X	X	X
61E Propeller Ice Protection	X/--	X	--	X	X	X	--	--	--	--	-
61F Propeller Maintenance	X/X	X	X	X	X	X	X	X	X	X	X

c) Type training examination and assessment standard

1. Theoretical element examination standard

After the theoretical portion of the aircraft type training is completed, a written examination is performed, which comply with the following:

(a) Format of the examination is of the multi-choice type. Each multi-choice question have 3 alternative answers of which only one may be the correct answer. The total time is based on

the total number of questions and the time for answering is based upon a nominal average of 90 seconds per question.

(b) The incorrect alternatives seem equally plausible to anyone ignorant of the subject. All the alternatives should be clearly related to the question and of similar vocabulary, grammatical construction and length.

(c) In numerical questions, the incorrect answers correspond to procedural errors such as the use of incorrect sense (+ versus -) or incorrect measurement units. They may not be mere random numbers.

(d) The level of examination for each chapter (1) as defined in point 2 'Aircraft type training levels'. However, the use of a limited number of questions at a lower level is acceptable.

(e) The examination is a closed book type. No reference material is permitted. An exception will be made for the case of examining a B1 or B2 candidate's ability to interpret technical documents.

(f) The number of questions is at least 1 question per hour of instruction. The number of questions for each chapter and level are proportionate to:

— The effective training hours spent teaching at that chapter and level,

— The learning objectives as given by the training needs analysis.

The number and the level of the questions when approving the course is assessed by DGCA.

(g) The minimum examination pass mark is 75 %. When the type training examination is split in several examinations, each examination is required to be passed with at least a 75 % mark. In order to be possible to achieve exactly a 75 % pass mark, the numbers of questions in the examination are a multiple of 4.

(h) Penalty marking (negative points for failed questions) is not used.

(i) End of module phase examinations cannot be used as part of the final examination unless they contain the correct number and level of questions required.

2. Practical element assessment standard.

After the practical element of the aircraft type training has been completed, an assessment must be performed, which must comply with the following:

(a) The assessment is performed by designated assessors appropriately qualified.

(b) The assessment will evaluate the knowledge and skills of the trainee.

4. TYPE EXAMINATION STANDARD

Where type training is not required, Type examination is conducted by training organisations appropriately approved under CAR-147 or by the DGCA

The examination may be written and or practical assessment based, or a combination thereof and it comply with the following requirements:

(a) Oral examination questions will be open.

(b) Written examination questions will be essay type or multi-choice questions.

(c) Practical assessment should determine a person's competence to perform a task.

(d) Examinations will be on a sample of Chapters drawn from type training/ examination syllabus, at the indicated level.

(e) The incorrect alternatives should seem equally plausible to anyone ignorant of the subject. All of the alternatives are clearly related to the question and of similar vocabulary, grammatical construction and length.

(f) In numerical questions, the incorrect answers correspond to procedural errors such as corrections applied in the wrong sense or incorrect unit conversions: they should not be mere random numbers.

(g)The examinations ensure that the following objectives are met:

1. Properly discuss with confidence the aircraft and its systems.

2. Ensure safe performance of maintenance, inspections and routine work according to the maintenance manual and other relevant instructions and tasks as appropriate for the type of aircraft, for example troubleshooting, repairs, adjustments, replacements, rigging and functional checks such as engine run, etc., if required.

3. Correctly use all technical literature and documentation for the aircraft.

4. Correctly use specialist/special tooling and test equipment, perform removal and replacement of components and modules unique to type, including any on-wing maintenance activity

(h) The following conditions apply to the examination:

1. The maximum number of consecutive attempts is three. Further sets of three attempts are allowed with a 1 year waiting period between sets. A waiting period of 30 days is required after the first failed attempt within one set, and a waiting period of 60 days is required after the second failed attempt.

The applicant is required to confirm in writing to the DGCA the number and dates of at-tempts during the last year. DGCA is responsible for checking the number of attempts within the applicable timeframes.

2. The type examination is passed and the required practical experience are completed within the 3 years preceding the application for the rating endorsement on the aircraft maintenance licence.

3. Type examination is performed with at least one examiner present. The examiner(s) shall not have been involved in the applicant's training.

A written and signed report is made by the examiner(s) to explain why the candidate has passed or failed.

4. ON THE JOB TRAINING

On the Job Training (OJT) is approved by the DGCA .It is conducted at and under the control of a maintenance organisation appropriately approved for the maintenance of the particular aircraft type and assessed by designated assessors appropriately qualified.

It shall have been started and completed within the 3 years preceding the application for a type rating endorsement.

(a) Objective:

The objective of OJT is to gain the required competence and experience in performing safe maintenance.

(b) Content:

OJT cover a cross section of tasks acceptable to the DGCA. The OJT tasks to be completed are required to be representative of the aircraft and systems both in complexity and in the technical input required to complete that task. While relatively simple tasks may be included, other more complex maintenance tasks should also be incorporated and undertaken as appropriate to the aircraft type.

The OJT should include one-to-one supervision and should involve actual work task performance on aircraft/components, covering line and/or base maintenance tasks. The use of simulators for OJT should not be allowed. Further details On the Job Training is provided in AMC to Section 6 of Appendix III to CAR-66 "Aircraft Type Training and Examination Standard. On-the-Job Training."

Each task required to be signed off by the student and countersigned by a designated supervisor. The tasks listed should refer to an actual job card/work sheet, etc. The final assessment of the completed OJT is mandatory and required to be performed by a designated assessor appropriately qualified.

The following data are required to be addressed on the OJT worksheets/logbook:

1. Name of Trainee;

2. Date of Birth;

3. Approved Maintenance Organisation;

4. Location;

5. Name of supervisor(s) and assessor, (including licence number if applicable);

6. Date of task completion;

7. Description of task and job card/work order/tech log, etc.;

8. Aircraft type and aircraft registration;

9. Aircraft rating applied for.

In order to facilitate the verification by the DGCA, demonstration of the OJT shall consist Of i) detailed worksheets/logbook and (ii) a compliance report demonstrating how the OJT meets the requirement of CAR 66.

APPENDIX C: - AIRCRAFT TYPE PRACTICAL EXPERIENCE LIST OF TASKS

Type/task training and ratings

The "practical experience" should cover a representative cross section of task. For the first aircraft type of each manufacturer group including at least 50 % of tasks, as applicable to the concerned aircraft type and licence category, should be performed.

For the second aircraft type of each manufacturer (sub) group the practical experience should be reduced to 30 %. For subsequent aircraft types of each manufacturer (sub) group this should be reduced to 20 %.

Practical experience should be demonstrated by the submission of records or a logbook showing the tasks performed by the applicant as specified by the DGCA. (Format of OJT is given in Appendix-D Format of OJT completion task.).

I **Time limits/Maintenance checks (ATA 05)**

a. 100 hour check (general aviation aircraft).
b. B or C Check (transport category aircraft)
c. Assist carrying out a scheduled maintenance check i.a.w. AMM
d. Review aircraft maintenance log for correct completion
e. Review records for compliance with Airworthiness directives.
f. Review records for compliance with Component life limits.
g. Procedure for Inspection following heavy landing.
h. Procedure for Inspection following lightning strike.

II **Dimensions/Areas(ATA 06)**

a. Locate component(s) by station number.
b. Perform symmetry check.

III **Lifting and Shoring(ATA 07)**

Assist in :

a. Jack aircraft nose or tail wheel.
b. Jack complete aircraft.
c. Sling or trestle major component.

IV **Leveling /Weighing(ATA 08)**

a. Level aircraft.
b. Weigh aircraft.
c. Prepare weight and balance amendment.
d. Check aircraft against equipment list.

V **Towing and Taxiing(ATA 09)**

a. Prepare for aircraft towing
b. Tow aircraft
c. Be part of aircraft towing team.

VI **Parking and mooring(ATA 10)**

a. Tie down aircraft.
b. Park, secure and cover aircraft.
c. Position aircraft in dock.
d. Secure rotor blades.

VII **Placards and Marking (ATA11)**

a. Check aircraft for correct placards.
b. Check aircraft for correct markings.

VII **Servicing (ATA 12)**

a. Refuel aircraft.
b. Defuel aircraft
c. Carry out tank to tank fuel transfer
d. Check / adjust tire pressures.
e. Check / replenish oil level.
f. Check/ replenish hydraulic fluid level.
g. Check/ replenish accumulator pressure.
h. Charge pneumatic system.
i. Grease aircraft.
j. Connect ground power.
k. Service toilet/water system
l. Perform pre-flight/daily check

IX **Vibration and Noise Analysis (ATA 18)**

a. Analyze helicopter vibration problem.
b. Analyze noise spectrum.
c. Analyse engine vibration.

X **Air Conditioning (ATA 21)**

a. Replace combustion heater.
b. Replace flow control valve.
c. Replace outflow valve.
d. Replace safety valve.
e. Replace vapor cycle unit.
f. Replace air cycle unit.
g. Replace cabin blower.
h. Replace heat exchanger.
i. Replace pressurization controller.
j. Clean outflow valves.
k. Deactivate/reactivate cargo isolation valve.
l. Deactivate/reactivate avionics ventilation components
m. Check operation of air conditioning/heating system
n. Check operation of pressurization system
o. Troubleshoot faulty system

XI **Auto flight (ATA 22)**

a. Install servos.
b. Rig bridle cables

c. Replace controller.
d. Replace amplifier.
e. Replacement of the auto flight system LRUs in case of fly- by -wire aircraft
f. Check operation of auto-pilot.
g. Check operation of auto-throttle / auto thrust.
h. Check operation of yaw damper.
i. Check and adjust servo clutch.
j. Perform autopilot gain adjustments.
k. Perform mach trim functional check.
l. Troubleshoot faulty system.
m. Check auto land system
n. Check flight management systems
o. Check stability augmentation system

XII **Communications (ATA 23)**

b. Replace VHF com unit.
c. Replace HF com unit.
d. Replace existing antenna.
e. Replace static discharge wicks.
f. Check operation of radios.
g. Perform antenna VSWR check.
h. Perform Selcal operational check.
i. Perform operational check of passenger address system.
j. Functionally check audio integrating system.
k. Repair co-axial cable.
l. Troubleshoot faulty system

XIII **Electrical Power (ATA 24)**

a. Charge lead/acid battery.
b. Charge Ni-Cd battery.
c. Check battery capacity.
d. Deep-cycle Ni-Cd battery.
e. Replace Integrated drive/generator/alternator.
f. Replace switches.
g. Replace circuit breakers.
h. Adjust voltage regulator.
i. Amend electrical load analysis report.
j. Repair/replace electrical feeder cable.
k. Perform functional check of IDG / Generator / Alternator
l. Perform functional check of voltage regulator.
m. Perform functional check of emergency generation system.
n. Troubleshoot faulty system

XIV **Equipment/Furnishings (ATA 25)**

a. Replace carpets
b. Replace crew seats.
c. Replace passenger seats.
d. Check inertia reels.
e. Check seats/belts for security.
f. Check emergency equipment.
g. Check ELT for compliance with regulations.
h. Repair toilet waste container.
i. Repair upholstery.
j. Change cabin configuration.
k. Replace escape slides/ropes
l. Replace cargo loading system actuator.
m. Test cargo loading system.

XV **Fire protection (ATA 26)**

a. Check fire bottle contents.
b. Check / test operation of fire / smoke detection and warning system.
c. Check cabin fire extinguisher contents.
d. Check lavatory smoke detector system.
e. Check cargo panel sealing.
f. Install new fire bottle.
g. Replace fire bottle squib.
h. Troubleshoot faulty system.
i. Inspect engine fire wire detection systems.

XVI **Flight Controls (ATA 27)**

a. Inspect primary flight controls and related components i.a.w. AMM.
b. Extending/retracting flaps & slats.
c. Replace horizontal stabilizer.
d. Replace spoiler/lift damper.
e. Replace elevator.
f. Deactivation/reactivation of aileron servo control.
g. Replace aileron.
h. Replace rudder.

i. Replace trim tabs.
j. Install control cable and fittings.
k. Replace slats.
l. Replace flaps.
m. Replace powered flying control unit.
n. Replace flap actuator
o. Adjust trim tab.
p. Adjust control cable tension.
q. Check control range and direction of movement.
r. Check for correct assembly and locking.
s. Troubleshoot faulty system.
t. Functional test of primary flight controls.
u. Functional test of flap system.
v. Operational test of the side stick assembly.
w. Operational test of the THS.
x. THS system wears check.

XVII **Fuel (ATA 28)**

a. Water drain system (operation).
b. Replace booster pump.
c. Replace fuel selector.
d. Replace fuel tank cells.
e. Replace/test fuel control valves.
f. Replace magnetic fuel level indicators.
g. Replace water drain valve.
h. Check filters.
i. Flow check system.
j. Check calibration of fuel quantity gauges.
k. Check operation feed/selectors
l. Check operation of fuel dump/jettison system.
m. Fuel transfer between tanks.
n. Pressure defuel. Pressure refuel (manual control).
o. Troubleshoot faulty system.

XVIII **Hydraulics (ATA 29)**

a. Replace engine driven pump.
b. Check/replace case drain filter.
c. Replace hydraulic motor pump/generator.
d. Replace standby pump.
e. Replace accumulator.
f. Check operation of shut off valve.
g. Check filters / Clog indicators.
h. Check indicating systems.
i. Perform functional checks.
j. Pressurisation/depressurisation of the hydraulic system.
k. Power Transfer Unit (PTU) operation
l. Replacement of PTU.
m. Troubleshoot faulty system.

XIX **Ice and rain protection (ATA 30)**

a. Replace pump.
b. Replace timer.
c. Inspect repair propeller deice boot.
d. Test propeller de-icing system.
e. Inspect/test wing leading edge de-icer boot.
f. Replace anti-ice/deice valve.
g. Install wiper motor.
h. Check operation of systems.
i. Operational test of the pitot-probe ice protection.
j. Operational test of the TAT ice protection.
k. Operational test of the wing ice protection system.
l. Assistance to the operational test of the engine air-intake ice protection (with engines operating)
m. Troubleshoot faulty system.

XX **Indicating/recording systems (ATA 31)**

a. Replace flight data recorder.
b. Replace cockpit voice recorder.
c. Replace clock.
d. Replace master caution unit.
e. Replace FDR.
f. Perform FDR data retrieval.
g. Troubleshoot faulty system.
h. Implement ESDS procedures
i. Inspect for HIRF requirements
j. Start/stop EIS procedure.
k. Bite test of the CFDIU.
l. Ground scanning of the central warning system.

XXI **Landing Gear (ATA 32)**

a. Build up wheel.
b. Replace main wheel.
c. Replace nose wheel.
d. Replace steering actuator.
e. Replace truck tilt actuator.
f. Replace gear retraction actuator.
g. Replace up lock/down lock assembly.
h. Replace shimmy damper.
i. Rig nose wheel steering.
j. Replace shock strut seals.
k. Servicing of shock strut.
l. Replace brake unit.
m. Replace brake control valve.
n. Bleed brakes.
o. Replace brake fan.
p. Test anti-skid unit.
q. Test gear retraction.
r. Change bungees.
s. Adjust micro switches/sensors.
t. Charge struts with oil and air.
u. Troubleshoot faulty system.
v. Test auto-brake system.
w. Replace rotorcraft skids.
x. Replace rotorcraft skid shoes.
y. Pack and check floats.
z. Flotation equipment.
aa. Check/test emergency blowdown (emergency landing gear extension).
bb. Operational test of the landing gear doors.

XXII **Lights (ATA 33)**

a. Repair/replace rotating beacon.
b. Repair/replace landing lights.
c. Repair/replace navigation lights.
d. Repair/replace interior lights.
e. Replace ice inspection lights.
f. Repair/replace logo lights.
g. Repair/replace emergency lighting system.
h. Perform emergency lighting system checks.
i. Troubleshoot faulty system

XXIII **Navigation (ATA 34)**

Calibrate magnetic direction indicator.
Replace airspeed indicator.
Replace altimeter.
Replace air data computer.
Replace VOR unit.
Replace ADI.
Replace HSI.
Check pitot static system for leaks.
Check operation of directional gyro.
Functional check weather radar.
Functional check Doppler.
Functional check TCAS.
Functional check DME.
Functional check ATC Transponder.
Functional check flight director system.
Functional check inertial nav. system.
Complete quadrantal error correction of ADF system.
Update flight management system database.
Check calibration of pitot static instruments.
Check calibration of pressure altitude reporting system.
Troubleshoot faulty system.
Check marker systems.
Compass replacement direct/indirect.
Check Satcom.
Check GPS.
Test AVM.

XXIV **Oxygen (ATA 35)**

Inspect on board oxygen equipment.
Purge and recharge oxygen system.
Replace regulator.
Replace oxygen generator.
Test crew oxygen system.
Perform auto oxygen system deployment check.
Troubleshoot faulty system.

XXV **Pneumatic systems (ATA 36)**

Replace filter.
Replace air shut off valve.

Replace pressure regulating valve.
Replace compressor.
Recharge dessicators.
Adjust regulator.
Check for leaks.
Troubleshoot faulty system.

XXVI **Vacuum systems (ATA 37)**
Inspect the vacuum system i.a.w. AMM.
Replace vacuum pump.
Check/replace filters.
Adjust regulator.
Troubleshoot faulty system.

XXVII **Water/Waste (ATA 38)**
Replace water pump.
Replace tap.
Replace toilet pump.
Perform water heater functional check.
Troubleshoot faulty system.
Inspect waste bin flap closure.

XXVIII **Central Maintenance System (ATA45)**
Retrieve data from CMU.
Replace CMU.
Perform Bite check.
Troubleshoot faulty system.

XXIX **Airborne Auxiliary power (ATA 49)**
Removal /Installation of APU.
Removal/installation of the inlet guide-vane actuator.
Operational test of the APU emergency shut-down test.
Operational test of APU.

XXX **Structures (ATA 51)**
Assessment of damage.
Sheet metal repair.
Fibre glass repair.
Wooden repair.

XXXI **Fabric repair (ATA 51)**
Recover fabric control surface.
Treat corrosion.
Apply protective treatment.

XXXI **Doors (ATA 52)**
Inspect passenger door i.a.w. AMM.
Rig/adjust locking mechanism.
Adjust air stair system.
Check operation of emergency exits.
Test door warning system.
Troubleshoot faulty system.
Remove and install passenger door i.a.w. AMM.
Remove and install emergency exit i.a.w. AMM.
Inspect cargo door i.a.w. AMM.

XXXII **Windows (ATA 56)**
Replace windshield.
Replace direct vision window.
Replace cabin window
Repair transparency.

XXXIII **Wings (ATA 57)**
Skin repair.
Recover fabric wing.
Replace tip.
Replace rib.
Replace integral fuel tank panel.
Check incidence/rig.

XXXIV **Propeller (ATA 61)**
Assemble prop after transportation.
Replace propeller.
Replace governor.
Adjust governor.
Perform static functional checks.
Check operation during ground run.
Check track.
Check setting of micro switches.
Dress out blade damage.
Dynamically balance prop.
Troubleshoot faulty system.

XXXV **Main Rotors (ATA 62)**

Replace blades.
Replace damper assembly.
Check track.
Check static balance.
Check dynamic balance.
Troubleshoot.

XXXVI **Rotor Drive (ATA 63)**

Replace mast.
Replace drive coupling.
Replace clutch/freewheel unit
Replace drive belt.
Install main gearbox.
Overhaul main gearbox.
Check gearbox chip detectors.

XXXVII **Tail Rotors (ATA 64)**

Install rotor assembly.
Replace blades.
Troubleshoot.

XXXVIII **Tail Rotor Drive (ATA 65)**

Replace bevel gearbox.
Replace universal joints.
Overhaul bevel gearbox.
Install drive assembly.
Check chip detectors.
Check/install bearings and hangers.
Check/service/assemble flexible couplings.
Check alignment of drive shafts.
Install and rig drive shafts.

XXXIX **Rotorcraft flight controls (ATA 67)**

Install swash plate.
Install mixing box.
Adjust pitch links.
Rig collective system.
Rig cyclic system.
Rig anti-torque system.
Check controls for assembly and locking.
Check controls for operation and sense.
Troubleshoot faulty system.

XL **Power Plant (ATA 71)**

Build up ECU.
Replace engine.
Repair cooling baffles.
Repair cowling.
Adjust cowl flaps.
Repair faulty wiring.
Troubleshoot.
Assist in dry motoring check.
Assist in wet motoring check.
Assist in engine start (manual mode).

XLI **Piston Engines(ATA 72)**

Remove/install reduction gear.
Check crankshaft run-out.
Check tappet clearance.
Check compression.
Extract broken stud.
Install helicoil.
Perform ground run.
Establish/check reference RPM.
Troubleshoot.

XLII **Turbine Engines (ATA 72)**

Replace module.
Replace fan blade.
Hot section inspection/borescope check.
Carry out engine/compressor wash.
Carry out engine dry cycle.
Engine ground run.
Establish reference power.
Trend monitoring/gas path analysis.
Troubleshoot.

XLIII **Fuel and control, piston (ATA 73)**

Replace engine driven pump.
Adjust AMC.
Adjust ABC.
Install carburetor/injector.

Adjust carburetor/injector.
Clean injector nozzles.
Replace primer line.
Check carburetor float setting.

XLIV **Fuel and control, turbine (ATA 73)**

Replace FCU.
Replace engine electronic control unit (FADEC).
Replace fuel metering unit (FADEC).
Replace engine driven pump.
Clean/test fuel nozzles.
Clean/replace filters.
Adjust FCU.
Troubleshoot faulty system.
Functional test of FADEC.

XLV **Ignition systems, piston (ATA 74)**
Change magneto.
Change ignition vibrator.
Change plugs.
Test plugs.
Check H.T. leads.
Install new leads.
Check timing.
Check system bonding.
Troubleshoot faulty system.

XLVI **Ignition systems, turbine (ATA 74)**
Perform functional test of the ignition system.
Check glow plugs/ ignitors.
Check H.T. leads.
Check ignition unit.
Replace ignition unit.
Troubleshoot faulty system.

XLVII **Engine Controls(ATA 76)**
Rig thrust lever.
Rig RPM control.
Rig mixture HP cock lever.
Rig power lever.
Check control sync (multi-eng).
Check controls for correct assembly and locking.
Check controls for range and direction of movement.
Adjust pedestal micro-switches.
Troubleshoot faulty system.

XLVIII **Engine Indicating (ATA 77)**

Replace engine instruments(s).
Replace oil temperature bulb.
Replace thermocouples.
Check calibration.
Troubleshoot faulty system.

XLIX **Exhaust, piston (ATA 78)**

Replace exhaust gasket.
Inspect welded repair.
Pressure check cabin heater muff.
Troubleshoot faulty system.

L **Exhaust, turbine (ATA 78)**
Change jet pipe.
Change shroud assembly.
Install trimmers.
Inspect/replace thrust reverser.
Replace thrust reverser component.
Deactivate/reactivate thrust reverser.
Operational test of the thrust reverser system.

LI **Oil (ATA 79)**
Change oil.
Check filter(s).
Adjust pressure relief valve.
Replace oil tank.
Replace oil pump.
Replace oil cooler.
Replace firewall shut off valve.
Perform oil dilution.
Troubleshoot faulty system.

LII **Starting (ATA 80)**
Replace starter.

Replace start relay.
Replace start control valve.
Check cranking speed.
Troubleshoot faulty system.

LIII **Turbines, piston engines (70)**

Replace PRT.
Replace turbo-blower.
Replace heat shields.
Replace waste gate.
Adjust density controller.

LIV **Engine water injection (ATA 82)**

Replace water/methanol pump.
Flow check water/methanol system.
Adjust water/methanol control unit.
Check fluid for quality.
Troubleshoot faulty system

LV **Accessory gear boxes (ATA 83)**
Replace gearbox.
Replace drive shaft.
Check Chip detector

Appendix-D: - Format of OJT completion task.

The OJT (On Job Training)

The OJT (On Job Training) document has been prepared to comply with the On Job Training requirements of (CAR 66; Section 6 of Appendix III, AMC to Appendix III and Appendix II to AMC to CAR 66). The OJT should be completed by the candidate on following occasions;

Criteria	Required OJT Tasks	Remarks
A. First Endorsement for applicable Aircraft Rating in first category / subcategory (B1 and B2 in Group 1, 2, 3) as per table of CAR 66; GM 66.A.45 .(Endorsement with aircraft ratings)	At least 50% of the DGCA approved OJT syllabus	50% of the required OJT tasks can be completed before start of the Aircraft Type Training.
B. Candidates holding AME type rated license on Turbo Prop aircraft and seeking first endorsement on Turbo Jet/ Turbo Fan aircraft and Vice Versa.	20 % of the DGCA approved OJT syllabus in applicable ATA chapters.	
C. Endorsement with type rating on additional category / Sub category.	At least 50% of the DGCA approved OJT syllabus	

Guidelines for Completion and Assessment of OJT

1. The OJT task has been identified for B1 and B2 categories. However, this is generic guideline. The AMO may vary it during customization for their applicable aircraft.

2. Maintenance tasks which are considered as B1 are:

- Maintenance tasks performed on aircraft structure, power plant and mechanical and electrical systems
- Work on avionics systems requiring **only** simple tests to prove their serviceability and **not** requiring troubleshooting.

3. Maintenance tasks which are considered as B2 are:

- Maintenance tasks performed on avionic and electrical systems
- Electrical and avionics tasks within power plant and mechanical systems, requiring **only** simple tests to prove their serviceability.

On Job Training Process

The objective of OJT is to gain the required competence and experience in performing safe maintenance.

It should be

- Conducted at and under the control of a maintenance organisation appropriately approved for the maintenance of the particular aircraft type.
- The OJT should include one-to-one supervision and should involve actual work task performance on aircraft/components, covering line and/or base maintenance tasks.
- OJT should be assessed by appropriately qualified and designated assessors of the organisation.
- Further guidance about the assessment and the designated assessors is provided in Appendix III to AMC to CAR-66.

The OJT Candidate will gain a detailed knowledge of the practical aspects and capacity to combine and apply the separate elements of knowledge in a logical and comprehensive manner**.**

The candidate participated in the task, for final assessment should be able to:

- Read and understand manufacturer instructions
- Use tools and equipment as required in manufacturer instructions
- Use and have knowledge of various material, both raw and consumable, and standard parts
- Use his knowledge in a practical manner and use manufacturer instructions
- Interpret results from various sources and measurements and apply corrective action where appropriate
- Demonstrate knowledge of good maintenance standards and human factor limitation.

Completion of the OJT booklet

- All entries in this OJT booklet should be made in indelible ink. The correction, if any, should be done in manner by striking with a single line, such that deleted entry remains legible. Such entries should be authenticated by the OJT supervisor.
- Dates entered should follow the format DD/MM/YY.
- Each page should be identified by the OJT booklet owner's name and signature.

OJT Booklet Holder Details		
Name in Full:	Date of Birth:	
Nationality:	AME Licence No. (If available): Computer No.	
Address:	Licence Category being applied for: (Tick Appropriate)	
Aircraft Rating and type of Aircraft	B1	B2
Name of Approved Maintenance Organisation and Address:		
Signature:		

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature

05- Time limits/Maintenance checks									
100 hour check (general aviation aircraft).	B1	B2							
~~A~~ B or C Check (transport category aircraft)	B1	B2							
Assist carrying out a scheduled maintenance check i.a.w. AMM	B1	B2							
Review aircraft maintenance log for correct completion	B1	B2							
Review records for compliance with airworthiness directives.	B1	B2							
Review records for compliance with component life limits.	B1	B2							
Procedure for Inspection following heavy landing.	B1	-							
Procedure for Inspection following lightning strike.	B1	B2							
06- Dimensions/Areas									
Locate component(s) by station number.	B1	B2							
Perform symmetry check.	B1	-							
07- Lifting and Shoring									
Assist in Jacking aircraft nose or tail wheel.	B1	-							
Assist in Jacking complete aircraft.	B1	-							
Assist in Sling or trestle major component.	B1	-							
08 - Levelling /Weighing									
Level aircraft.	B1	-							
Weigh aircraft.	B1	-							
Prepare weight and balance amendment.	B1	-							
Check aircraft against equipment list.	B1	-							
09 - Towing and Taxiing									
Prepare for aircraft towing	B1	B2							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Tow aircraft	B1	B2							
Be part of aircraft towing team.	B1	B2							
10 - Parking and mooring									
Tie down aircraft.	B1	B2							
Park, secure and cover aircraft.	B1	B2							
Position aircraft in dock	B1	B2							
Secure rotor blades.	B1	B2							
11 - Placards and Marking									
Check aircraft for correct placards.	B1	B2							
Check aircraft for correct markings.	B1	B2							
12 - Servicing									
Refuel aircraft.	B1	-							
Defuel aircraft	B1	-							
Carry out tank to tank fuel transfer	B1	-							
Check / adjust tire pressures.	B1	-							
Check / replenish oil level.	B1	-							
Check/ replenish hydraulic fluid level.	B1	-							
Check/ replenish accumulator pressure	B1	-							
Charge pneumatic system.	B1	-							
Grease aircraft.	B1	-							
Connect ground power.	B1	B2							
Service toilet/water system	B1	-							
Perform pre-flight/daily check	B1	B2							
18 - Vibration and Noise Analysis									
Analyze helicopter vibration problem.	B1	B2							
Analyze noise spectrum.	B1	B2							
Analyse engine vibration.	B1	B2							
21 - Air Conditioning									
Replace combustion heater.	B1	-							
Replace flow control valve	B1	B2							
Replace outflow valve	B1	B2							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Replace safety valve	B1	-							
Replace vapour cycle unit.	B1	-							
Replace air cycle unit.	B1	-							
Replace cabin blower.	B1	B2							
Replace heat exchanger.	B1	-							
Replace pressurization controller.	-	B2							
Clean outflow valves.	B1	-							
Deactivate/reactivate cargo isolation valve	B1	-							
Deactivate/reactivate avionics ventilation components	B1	B2							
Check operation of air conditioning/heating system	B1	B2							
Check operation of pressurization system	B1	B2							
Troubleshoot faulty system	B1	B2							
22 - Auto flight									
Install servos.	-	B2							
Rig bridle cables	B1	-							
Replace controller.	-	B2							
Replace amplifier.	-	B2							
Replacement of the auto flight system LRUs in case of fly- by – wire aircraft	-	B2							
Check operation of auto-pilot.	-	B2							
Check operation of auto-throttle /auto thrust.	-	B2							
Check operation of yaw damper.	-	B2							
Check and adjust servo clutch	-	B2							
Perform autopilot gain adjustments.	-	B2							
Perform Mach trim functional check	-	B2							
Troubleshoot faulty system.	-	B2							
Check auto land system	-	B2							
Check flight management systems	-	B2							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Check stability augmentation system	-	B2							
23 - Communications									
Replace VHF com unit.	-	B2							
Replace HF com unit.	-	B2							
Replace existing antenna	-	B2							
Replace static discharge wicks.	-	B2							
Check operation of radios.	-	B2							
Perform antenna VSWR check	-	B2							
Perform SELCAL operational check	-	B2							
Perform operational check of passenger address system.	-	B2							
Functionally check audio integrating system.	-	B2							
Repair co-axial cable	-	B2							
Troubleshoot faulty system	-	B2							
24 - Electrical Power									
Charge lead/acid battery.	B1	B2							
Charge Ni-Cd battery.	B1	B2							
Check battery capacity.	B1	B2							
Deep-cycle Ni-Cd battery.	B1	B2							
Replace Integrated drive/generator/alternator.	B1	B2							
Replace switches.	B1	B2							
Replace circuit breakers.	B1	B2							
Adjust voltage regulator.	B1	B2							
Amend electrical load analysis report.	B1	B2							
Repair/replace electrical feeder cable	B1	B2							
Perform functional check of IDG / Generator / Alternator	B1	B2							
Perform functional check of voltage regulator.	B1	B2							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Perform functional check of emergency generation system.	B1	B2							
Troubleshoot faulty system	B1	B2							
25 - Equipment/Furnishings									
Replace carpets	B1	-							
Replace crew seats.	B1	-							
Replace passenger seats.	B1	-							
Check inertia reels.	B1	-							
Check seats/belts for security.	B1	-							
Check emergency equipment.	B1	-							
Check ELT for compliance with regulations.	-	B2							
Repair toilet waste container.	B1	-							
Repair upholstery.	B1	-							
Change cabin configuration.	B1	-							
Replace escape slides/ropes	B1	-							
Replace cargo loading system actuator.	B1	B2							
Test cargo loading system.	B1	B2							
26 - Fire protection									
Check fire bottle contents.	B1	-							
Check / test operation of fire / smoke detection and warning system.	B1	B2							
Check cabin fire extinguisher contents.	B1	-							
Check lavatory smoke detector system.	B1	B2							
Check cargo panel sealing	B1	-							
Install new fire bottle	B1	B2							
Replace fire bottle squib	-	B2							
Troubleshoot faulty system.	B1	B2							
Inspect engine fire wire detection systems.	-	B2							
27 - Flight Controls									

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Inspect primary flight controls and related components AMM.	B1	B2							
Extending/retracting flaps & slats.	B1	B2							
Replace horizontal stabilizer.	B1	-							
Replace spoiler/lift damper.	B1	-							
Replace elevator.	B1	-							
Deactivation/reactivation of aileron servo control.	B1	B2							
Replace aileron.	B1	-							
Replace rudder.	B1	-							
Replace trim tabs.	B1	-							
Install control cable and fittings.	B1	-							
Replace slats.	B1	-							
Replace flaps.	B1	-							
Replace powered flying control unit.	B1	B2							
Replace flap actuator	B1	-							
Adjust trim tab	B1	B2							
Adjust control cable tension.	B1	-							
Check control range and direction of movement.	B1	-							
Check for correct assembly and locking	B1	-							
Troubleshoot faulty system.	B1	B2							
Functional test of primary flight controls.	B1	B2							
Functional test of flap system.	B1	B2							
Operational test of the side stick assembly.	B1	B2							
Operational test of the THS.	B1	B2							
THS system wear check	B1	-							
28 - Fuel									
Water drain system (operation).	B1	-							
Replace booster pump.	B1	B2							
Replace fuel selector.	B1	B2							
Replace fuel tank cells.	B1	-							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Replace/test fuel control valves.	B1	B2							
Replace magnetic fuel level indicators.	B1	-							
Replace water drain valve	B1	-							
Check filters.	B1	-							
Flow check system.	B1	-							
Check calibration of fuel quantity gauges.	-	B2							
Check operation feed/selectors	B1	B2							
Check operation of fuel dump/jettison system.	B1	B2							
Fuel transfer between tanks.	B1	B2							
Pressure defuel/Pressure refuel (manual control).	B1	-							
Troubleshoot faulty system.	B1	B2							
29 - Hydraulics									
Replace engine driven pump.	B1	-							
Check/replace case drain filter.	B1	-							
Replace hydraulic motor pump/generator.	B1	B2							
Replace standby pump.	B1	-							
Replace accumulator.	B1	-							
Check operation of shut off valve	B1	-							
Check filters / Clog indicators.	B1	-							
Check indicating systems.	B1	B2							
Perform functional checks.	B1	B2							
Pressurisation/depressurisation of the hydraulic system.	B1	B2							
Power Transfer Unit (PTU) operation	B1	B2							
Replacement of PTU.	B1	-							
Troubleshoot faulty system.	B1	B2							
30 - Ice and rain protection									
Replace pump.	B1	-							
Replace timer.	B1	B2							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Inspect repair propeller deice boot.	B1	-							
Test propeller de-icing system.	B1	B2							
Inspect/test wing leading edge deicer boot.	B1	-							
Replace anti-ice/deice valve	B1	B2							
Install wiper motor.	-	B2							
Check operation of systems.	B1	B2							
Operational test of the pitot-probe ice protection.	B1	B2							
Operational test of the TAT ice protection.	B1	B2							
Operational test of the wing ice protection system.	B1	B2							
Assistance to the operational test of the engine air-intake ice protection (with engines operating)	B1	-							
Troubleshoot faulty system.	B1	B2							
31 - Indicating/recording systems									
Replace flight data recorder.	-	B2							
Replace cockpit voice recorder.	-	B2							
Replace clock	-	B2							
Replace master caution unit.	-	B2							
Replace FDR.	-	B2							
Perform FDR data retrieval.	-	B2							
Troubleshoot faulty system.	-	B2							
Implement ESDS procedures	B1	B2							
Inspect for HIRF requirements	-	B2							
Start/stop EIS procedure	B1	B2							
Bite test of the CFDIU.	B1	B2							
Ground scanning of the central warning system.	B1	B2							
32 - Landing Gear									
Build up wheel.	B1	-							
Replace main wheel.	B1	-							
Replace nose wheel.	B1	-							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Replace steering actuator.	B1	-							
Replace truck tilt actuator.	B1	-							
Replace gear retraction actuator.	B1	-							
Replace up lock/ down lock assembly.	B1	-							
Replace shimmy damper.	B1	-							
Rig nose wheel steering	B1	-							
Replace shock strut seals.	B1	-							
Servicing of shock strut.	B1	-							
Replace brake unit.	B1	-							
Replace brake control valve	B1	-							
Bleed brakes.	B1	-							
Replace brake fan.	B1	B2							
Test anti-skid unit.	B1	B2							
Test gear retraction.	B1	B2							
Change bungees.	B1	-							
Adjust micro switches/sensors.	-	B2							
Charge struts with oil and air.	B1	-							
Troubleshoot faulty system.	B1	B2							
Test auto-brake system.	B1	B2							
Replace rotorcraft skids.	B1	-							
Replace rotorcraft skid shoes.	B1	-							
Pack and check floats.	B1	-							
Flotation equipment.	B1	-							
Check/test emergency blowdown (emergency landing gear extension).	B1	-							
Operational test of the landing gear doors.	B1	B2							
33 - Lights									
Repair/replace rotating beacon.	-	B2							
Repair/replace landing lights.	-	B2							
Repair/replace navigation lights.	-	B2							
Repair/replace interior lights.	-	B2							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Replace ice inspection lights.	-	B2							
Repair/replace logo lights.	-	B2							
Repair/replace emergency lighting system.	-	B2							
Perform emergency lighting system checks.	-	B2							
Troubleshoot faulty system	-	B2							
34 - Navigation									
Calibrate magnetic direction indicator.	-	B2							
Replace airspeed indicator.	-	B2							
Replace altimeter.	-	B2							
Replace air data computer.	-	B2							
Replace VOR unit.	-	B2							
Replace ADI	-	B2							
Replace HIS	-	B2							
Check pitot static system for leaks.	-	B2							
Check operation of directional gyro.	-	B2							
Functional check weather radar.	-	B2							
Functional check Doppler.	-	B2							
Functional check TCAS.	-	B2							
Functional check DME	-	B2							
Functional check ATC Transponder.	-	B2							
Functional check flight director system.	-	B2							
Functional check inertial nav system.	-	B2							
Complete quadrantal error correction of ADF system.	-	B2							
Update flight management system dbas	-	B2							
Check calibration of pitot static instruments.	-	B2							
Check calibration of pressure altitude reporting system.	-	B2							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Troubleshoot faulty system.	-	B2							
Check marker systems.	-	B2							
Compass replacement direct/indirect.	-	B2							
Check SATCOM.	-	B2							
Check GPS.	-	B2							
Test AVM.	-	B2							
35 - Oxygen									
Inspect on board oxygen equipment.	B1	B2							
Purge and recharge oxygen system.	-	B2							
Replace regulator.	-	B2							
Replace oxygen generator.	-	B2							
Test crew oxygen system.	B1	B2							
Perform auto oxygen system deployment check	-	B2							
Troubleshoot faulty system.	-	B2							
36 - Pneumatic systems									
Replace filter.	B1	-							
Replace air shut off valve	B1	-							
Replace pressure regulating valve	B1	-							
Replace compressor.	B1	-							
Recharge dessicators.	B1	-							
Adjust regulator.	B1	-							
Check for leaks.	B1	-							
Troubleshoot faulty system.	B1	B2							
37 - Vacuum systems									
Inspect the vacuum system i.a.w. AMM.	B1	-							
Replace vacuum pump.	B1	-							
Check/replace filters.	B1	-							
Adjust regulator.	B1	-							
Troubleshoot faulty system.	B1	-							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
38 - Water/Waste									
Replace water pump.	B1	-							
Replace tap.	B1	-							
Replace toilet pump.	B1	B2							
Perform water heater functional check	B1	B2							
Troubleshoot faulty system.	B1	B2							
Inspect waste bin flap closure	B1	-							
45 - Central Maintenance System									
Retrieve data from CMU.	-	B2							
Replace CMU.	-	B2							
Perform Bite check	B1	B2							
Troubleshoot faulty system.	-	B2							
49 - Airborne Auxiliary power									
Removal /Installation of APU.	B1	B2							
Removal/installation of the inlet guide vane actuator.	B1	-							
Operational test of the APU emergency shut-down test.	B1	B2							
Operational test of APU.	B1	B2							
51 - Structures									
Assessment of damage	B1	-							
Sheet metal repair.	B1	-							
Fibre glass repair.	B1	-							
Wooden repair.	B1	-							
51 - Fabric repair									
Recover fabric control surface	B1	-							
Treat corrosion.	B1	-							
Apply protective treatment.	B1	-							
52 - Doors									
Inspect passenger door i.a.w AMM.	B1	-							
Rig/adjust locking mechanism.	B1	-							
Adjust air stair system.	B1	B2							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Check operation of emergency exits.	B1	B2							
Test door warning system.	B1	B2							
Troubleshoot faulty system.	B1	B2							
Remove and install passenger door AMM.	B1	-							
Remove and install emergency exit AMM.	B1	B2							
Inspect cargo door AMM.	B1	-							
56 - Windows									
Replace windshield	B1	-							
Replace direct vision window.	B1	-							
Replace cabin window	B1	-							
Repair transparency.	B1	-							
57 - Wings									
Skin repair.	B1	-							
Recover fabric wing	B1	-							
Replace tip.	B1	-							
Replace rib	B1	-							
Replace integral fuel tank panel.	B1	-							
Check incidence/rig	B1	-							
61 - Propeller									
Assemble prop after transportation.	B1	-							
Replace propeller.	B1	-							
Replace governor.	B1	-							
Adjust governor.	B1	-							
Perform static functional checks.	B1	-							
Check operation during ground run.	B1	B2							
Check track	B1	-							
Check setting of micro switches.	B1	B2							
Dress out blade damage	B1	-							
Dynamically balance prop.	B1	-							
Troubleshoot faulty system.	B1	B2							
62 - Main Rotors									

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Replace blades.	B1	-							
Replace damper assembly.	B1	-							
Check track	B1	-							
Check static balance	B1	-							
Check dynamic balance	B1	-							
Troubleshoot.	B1	-							
63 - Rotor Drive									
Replace mast.	B1	-							
Replace drive coupling	B1	-							
Replace clutch/freewheel unit	B1	-							
Replace drive belt.	B1	-							
Install main gearbox.	B1	-							
Overhaul main gearbox.	B1	-							
Check gearbox chip detectors.	B1	-							
64 - Tail Rotors									
Install rotor assembly.	B1	-							
Replace blades.	B1	-							
Troubleshoot.	B1	-							
65 - Tail Rotor Drive									
Replace bevel gearbox.	B1	-							
Replace universal joints.	B1	-							
Overhaul bevel gearbox.	B1	-							
Install drive assembly.	B1	-							
Check chip detectors.	B1	-							
Check/install bearings and hangers.	B1	-							
Check/service/assemble flexible couplings.	B1	-							
Check alignment of drive shafts.	B1	-							
Install and rig drive shafts.	B1	-							
67 - Rotorcraft flight controls									
Install swash plate	B1	-							
Install mixing box.	B1	-							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Adjust pitch links.	B1	-							
Rig collective system.	B1	-							
Rig cyclic system.	B1	-							
Rig anti-torque system.	B1	-							
Check controls for assembly and locking	B1	-							
Check controls for operation and sense	B1	-							
Troubleshoot faulty system.	B1	B2							
71 - Power Plant									
Build up ECU.	B1	B2							
Replace engine	B1	B2							
Repair cooling baffles.	B1	-							
Repair cowling	B1	-							
Adjust cowl flaps.	B1	-							
Repair faulty wiring	-	B2							
Troubleshoot.	B1	B2							
Assist in dry motoring check	B1	B2							
Assist in wet motoring check	B1	B2							
Assist in engine start (manual mode).	B1	B2							
72 -Piston Engines									
Remove/install reduction gear.	B1	-							
Check crankshaft run-out.	B1	-							
Check tappet clearance	B1	-							
Check compression.	B1	-							
Extract broken stud	B1	-							
Install Heli coil.	B1	-							
Perform ground run.	B1	B2							
Establish/check reference RPM.	B1	B2							
Troubleshoot.	B1	B2							
72 -Turbine Engines									
Replace module	B1	-							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Replace fan blade	B1	-							
Hot section inspection/borescope check	B1	-							
Carry out engine/compressor wash	B1	-							
Carry out engine dry cycle	B1	-							
Engine ground run.	B1	B2							
Establish reference power.	B1	-							
Trend monitoring/gas path analysis.	B1	-							
Troubleshoot.	B1	B2							
73 - Fuel and control, piston									
Replace engine driven pump.	B1	-							
Adjust AMC	B1	-							
Adjust ABC	B1	-							
Install carburetor/injector.	B1	-							
Adjust carburetor/injector.	B1	-							
Clean injector nozzles.	B1	-							
Replace primer line	B1	-							
Check carburetor float setting	B1	-							
73 - Fuel and control, turbine									
Replace FCU.	B1	-							
Replace engine electronic control unit (FADEC).	-	B2							
Replace fuel metering unit (FADEC).	B1	B2							
Replace engine driven pump.	B1	-							
Clean/test fuel nozzles.	B1	-							
Clean/replace filters.	B1	-							
Adjust FCU.	B1	B2							
Troubleshoot faulty system.	B1	B2							
Functional test of FADEC	-	B2							
74 - Ignition systems, piston									
Change magneto.	-	B2							
Change ignition vibrator.	-	B2							
Change plugs.	-	B2							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Test plugs.	-	B2							
Check leads.	-	B2							
Install new leads.	-	B2							
Check timing	-	B2							
Check system bonding	-	B2							
Troubleshoot faulty system.	-	B2							
74 - Ignition systems, turbine									
Perform functional test of the ignition system.	-	B2							
Check glow plugs/ ignitors.	-	B2							
Check leads.	-	B2							
Check ignition unit.	-	B2							
Replace ignition unit.	-	B2							
Troubleshoot faulty system.	-	B2							
76 - Engine Controls									
Rig thrust lever.	B1	-							
Rig RPM control.	B1	-							
Rig mixture HP cock lever.	B1	-							
Rig power lever.	B1	-							
Check control sync (multi-eng).	B1	-							
Check controls for correct assembly and locking	B1	-							
Check controls for range and direction of movement.	B1	-							
Adjust pedestal micro-switches.	B1	B2							
Troubleshoot faulty system.	B1	B2							
77 - Engine Indicating									
Replace engine instruments(s).	-	B2							
Replace oil temperature bulb	-	B2							
Replace thermocouples.	-	B2							
Check calibration.	-	B2							
Troubleshoot faulty system.	-	B2							
78 - Exhaust, piston									
Replace exhaust gasket.	B1	-							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Inspect welded repair.	B1	-							
Pressure check cabin heater muff	B1	-							
Troubleshoot faulty system.	B1	-							
78 - Exhaust, turbine									
Change jet pipe	B1	-							
Change shroud assembly.	B1	-							
Install trimmers.	B1	-							
Inspect/replace thrust reverser.	B1	-							
Replace thrust reverser component.	B1	B2							
Deactivate/reactivate thrust reverser.	B1	-							
Operational test of the thrust reverser system.	B1	B2							
79 - Oil									
Change oil.	B1	-							
Check filter(s).	B1	-							
Adjust pressure relief valve	B1	-							
Replace oil tank	B1	-							
Replace oil pump.	B1	-							
Replace oil cooler.	B1	-							
Replace firewall shut off valve	B1	-							
Perform oil dilution.	B1	-							
Troubleshoot faulty system.	B1	B2							
80 - Starting									
Replace starter.	B1	B2							
Replace start relay.	-	B2							
Replace start control valve	B1	B2							
Check cranking speed	B1	-							
Troubleshoot faulty system.	B1	B2							
70 - Turbines, piston engines									
Replace PRT.	B1	-							
Replace turbo-blower.	B1	-							
Replace heat shields.	B1	-							

Description of Task and .(Job Card//Work Order/Techlog etc.	Applicable Licence Category			Aircraft Type	A/C Reg./ Engine / APU serial no.	Date/ Location	Signature of Trainee	Supervisor/AME	
	B1	B2						Licence no.	Signature
Replace waste gate	B1	-							
Adjust density controller.	B1	-							
82 - Engine water injection									
Replace water/methanol pump.	B1	-							
Flow check water/methanol system.	B1	-							
Adjust water/methanol control unit.	B1	-							
Check fluid for quality.	B1	-							
Troubleshoot faulty system	B1	-							
83 - Accessory gear boxes									
Replace gearbox.	B1	-							
Replace drive shaft.	B1	-							
Check Chip detector	B1	-							

Assessment Sheet

	Task description	Area	Maximum marks	Obtained Marks	Remarks
The final assessment of the completed OJT is mandatory and should be performed by a designated assessor appropriately qualified. The OJT assessor will scrutinize and ensure the following; • The candidate has completed the applicable OJT tasks. • The tasks have been signed by the candidate as well as the OJT supervisor • Assessment will be carried for the candidates as per the following weightage.					
		Adherence to the Personnel Warning and Cautions.	10		
		Performance of the selected core task (B1/ B2) proficiently.			
		1.	35		
		2.	35		

		Use of Aircraft Documentation and completion of records	20		
		Total	100		

Result: (Tick as applicable)	PASS	FAIL

Signature of Assessor

Name

Licence No.

Note : -

1. In case of first AME licence endorsement, this OJT booklet should serve as a compact and portable reference document, which would reflect the completion of the candidate's on job training, as applicable.

2. This OJT booklet is constructed in a way to guide the candidate to gain minimum relevant basic practical maintenance experience that represents a cross section of maintenance activities in applicable ATA chapters.

3. The OJT booklet covers all representative tasks under ATA chapters, as reflected in Appendix II to AMC to CAR 66 covering Piston Engine/ Turbo Prop/ Turbofan/ Rotary wing aircraft.

4. For endorsement with type rating, the candidate should complete at least 50% of the approved OJT syllabus for the applicable aircraft

5. Each AMO should customize this OJT booklet applicable to the scope of maintenance on their fleet of aircraft.

6. The OJT syllabus will be approved by DGCA and same need to be reflected in DGCA approved MOE Part 3.15.

7. The OJT supervisor and OJT assessor will be designated by the AMO and accepted by DGCA similar to Knowledge Examiner and Practical Assessor of CAR 147 approved training schools.

a. OJT Supervisor – The following qualification is recommended;

- *Type rated AME holding full scope authorization in applicable category (B1/B2) on applicable aircraft.*
- *Minimum 3 year of maintenance certification experience on applicable family of aircraft.*

b. The Practical Assessor and OJT Assessor may be same person for assessment of Practical element as well as OJT elements for the organization holding MTO as well as AMO approvals.

c. In case AMO desires to have a separate assessor for the OJT, such assessor will be accepted by DGCA in accordance with Appendix III to AMC to CAR 66. The following qualification is recommended for the OJT Assessors;

- *Type rated AME holding full scope authorization in applicable category (B1/B2) on applicable aircraft.*

- *Minimum 5 year of maintenance certification experience on applicable family of aircraft.*

d. *Depending upon the size of the organization, the position of OJT Supervisor and OJT assessor may be same person.*

8. The OJT for applicable task (ATA Chapter) on applicable should be completed by the candidate, under OJT Supervisor. The OJT booklet will be completed and signed by the candidate and OJT supervisor.

9. The candidate should submit the completed OJT booklet to OJT Assessor.

10. The OJT assessor will scrutinize and ensure the following;

- *The candidate has completed the applicable OJT tasks.*
- *The tasks have been signed by the candidate as well as the OJT supervisor*
- *Assessment will be carried for the candidates as per the following weightage.*

Criteria	***Weightage***
Adherence to the Warning and Cautions.	*10%*
Performance of Two selected core task (B1/ B2) proficiently. *1.* *2.*	*70%*
Use of Aircraft Maintenance Data, Documentation and completion of records	*20%*
Total	*100%*

11. The OJT assessor will declare the candidate as Passed, in case he has scored minimum 75% marks. The result will be recorded in the Assessment Sheet at the end of the OJT booklet.

12. In case the candidate has been declared as "Fail", the OJT Assessor will identify the additional OJT task that need to be completed by the candidate before his re-assessment.

13. The successful candidates should submit the copy of OJT booklet and Assessment result while submitting their application in DGCA for AME License endorsement on applicable aircraft.

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CHAPTER 10

GENERAL EXAMINATION REQUIREMENTS AND PROCEDURES

CHAPTER 10

GENERAL EXAMINATION REQUIREMENTS AND PROCEDURES

10.1 GENERAL INFORMATION

This Chapter provides information on the examinations appropriate to the grant or extension of a licence in accordance with CAR-66.

10.2 CAR-66 EXAMINATIONS

Although CAR-66 employs a modular syllabus the content of a module may vary in terms of the subjects covered within the module and depth of knowledge required according to the basic licence category sought. CAR-66 examinations are based on the CAR-66 syllabus as set out in Appendix I to CAR-66.

The examinations will be provided in English, using abbreviations where applicable and compiled by a computer in multiple choice format. Candidates may apply to take papers singly or in groups.

A list of common abbreviations used in the examinations can be found in Appendix A to this Chapter.

10.2.1 Multi-Choice Paper

All basic examinations are carried out using the multiple choice question. Each multiple choice question must have more than two alternative answers of which only one must be the correct answer and the candidate is allowed a time per module which is based upon a nominal average of 75 seconds per question.

The pass mark for CAR-66 module and sub-module multiple choice part of the examination is 75%.Penalty marking systems is not used to determine whether a candidate has passed.

10.3 WRITTEN EXAMINATION APPLICATION PROCEDURE

In order to make an application for an examination sitting, applicants need to follow procedures as determined by CEO. Please refer user manual for candidate released by CEO on website https://www.viman.gov.in/DGCA_AME/ and proceed accordingly.

10.4 EXAMINATION TIMETABLE

Details of the SCHEDULED examination can be found on our web site. Details of any additional venues or dates will be provided on our web site.

10.5 EXAMINATION VENUES

Detailed venue details can be found on the DGCA website at: http://dgca.nic.in/

10.6 CANCELLATION OR TRANSFER OF DATE/VENUE

Although all efforts will be made to allot centers as per the choice of the candidate, however, in case a candidate is not allotted the center of his choice due to unforeseen circumstances, an alternate center within the same zone will be allocated. If the candidate fails to appear at the alternate center, no request for refund or adjustment of the fee paid will be entertained.

Note: Fee once submitted will not be refunded back / adjusted for the next or later Sessions Under any circumstances including rejections

10.7 ATTENDANCE AT THE EXAMINATIONS

Candidates should be present at the examination centre at least 20 minutes before the scheduled time for the commencement of each examination sitting. All candidates are required to present photo ID on the exam day. Acceptable photo ID's are passport, Aadhar card, AEP, company or student ID. Candidates without ID will not be permitted to sit the exam.

Candidates may only enter the examination room during the 10 minutes preceding the start of the examinations to prepare examination material. They must not remain in the room after the finish of the examination period.

Personal coats, bags, briefcases, etc. may be placed at the front/rear of the examination room, under the direction of the invigilating officer. Any bags etc. could be removed if left unattended outside the examination room.

Note: The DGCA accepts no responsibility for items of personal equipment a candidate brings into the examination hall and which he/she is not permitted to retain during the examination.

10.8 MATERIALS FOR THE EXAMINATION

Please Refer Appendix B- "Suggested Study Material" of this chapter.

10.9 EXAMINATION BRIEFING

Please Refer AME Online Examination- Viman user manual Chapter 12- Guidelines for Appearing examination for more details.

10.10 REGULATIONS APPLIED TO THE CONDUCT OF WRITTEN (ONLINE) EXAMINATIONS

Candidates are not allowed to use any loose paper other than that provided at the examination. All papers issued by the DGCA are to be returned to the invigilator on completion. Silence is to be observed in the examination room at all times. Electronic alarms and key rings are not

permitted. Mobile telephones, pagers etc. must be switched off and left with the candidates personal belongings.

If a candidate wishes to speak to an Invigilating Officer, he/she should remain seated and raise his/her hand. It should be noted that the Invigilating Officer will consider only those questions from candidates which relate to the general conduct of the examinations and he/she will not enter into discussion on the interpretation of words or questions contained in the examination papers.

Any infringement of examination regulations may result in the candidate being disqualified in any subject he has taken and barred from further participation in future examinations.

10.11 EXAMINATION RESULTS

On the completion of the Exam, the score will be displayed on computer screen.

10.12 CAR-66 MODULE EXAM RE-SITS - 90 DAY RULE

CAR-66 Appendix II, 1.5 states that 'a failed module may not be retaken for at least 90 days following the date of the failed module examination, except in the case of approved maintenance training organisation which conducts a course of retraining tailored to the failed subjects in the particular module when the failed modules may be retaken after 30 days'.
This rule applies to all ca
ndidates i.e. self-study student, candidates undertaking exam module training only and candidates undertaking a full approved course.

The maximum number of consecutive attempts for each module is three. Further sets of three attempts are allowed with a 1 year waiting period between sets.

10.13 EXAMINATION PASS STANDARDS AND VALIDITY PERIODS

A candidate must complete all required written and/or oral examinations within 10 years of their first module pass except in the cases detailed in Para 10.13.1 and 10.13.2 below. Passed modules falling outside that time limit will lapse. The papers can be attempted in any order. A pass in a CAR-66 examination will be awarded to a candidate achieving at least 75% of the marks allocated to that examination.

10.13.1 Exam module for the Removal of Limitations

Under the current rules there is no deadline for the removal of limitations from a CAR-66 licence and therefore are no validity periods applied to the module or part module exam passes. This could be subject to change in future and any information will be published on our web site.

10.13.2 Exam module passes for the Extension of one Category to Another

In accordance with CAR-66 Appendix 1.12, the 10 year period does not apply to those modules which are common to more than one CAR-66 licence category or sub-category and which were previously passed as part of another such category or sub-category examination.

10.13.3 ISSUANCE OF CERTIFICATE

Applicants who have passed all basic knowledge examination modules in respect of a particular category/ sub-category of AME licence may apply to CEO, DGCA on Form CA 19-11 for the issuance of Basic Knowledge Examination Certificate.

APPENDICES TO Chapter 10

Appendix A Common Abbreviations
Appendix B Suggested Study Material

Appendix A Common Abbreviations

A	
AC:	Alternating Current
a/c:	Aircraft
ACARS:	Aircraft Communication addressing and Reporting System
AD:	Airworthiness Directive
ADI:	Attitude Director Indicator
ADF:	Automatic Direction Finder
AFCS:	Automatic Flight Control System
Aircraft:	any machine that can derive support in the atmosphere from the reactions of the air other than reaction of the air against the earth's surface
ALT:	Altitude
AMC:	Acceptable Means of Compliance
AMO:	Approved Maintenance Organisation
AMP:	Aircraft Maintenance Programme
AMT:	Approved Maintenance Training
AOC:	Air Operator Certificate
A/P:	Autopilot
APO:	Approved Production Organisation
APU:	Auxiliary Power Unit
ARC:	Airworthiness Review Certificate
ARINC:	Aeronautical Radio Incorporated
ASL:	above sea level
ATC:	Air Traffic Control
ATM:	Air Traffic Management
AWO:	All Weather Operations
C	
CAME:	Continuous Airworthiness Maintenance Exposition
CDU:	Control Display Unit
Certifying staff:	means personnel responsible for the release of an aircraft or a component after maintenance.
CF:	Certification
C of A:	Certificate of Airworthiness
Component:	means any engine, propeller, part or appliance.
Continuing Airworthiness:	means all of the processes ensuring that, at any time in its operating life, the aircraft complies with the airworthiness requirements in force and is in a condition for safe operation.
CRI:	Certification Review Item
CRT:	Cathode Ray Tube
CRS:	Certificate of Release to Service
CS:	Certification Specification

CSP:	Certification Standardisation Panel
D	
db:	decibel (acoustic measurement unit)
DC:	Direct Current
DME:	Distance Measuring Equipment
E	
EADI:	Electronic Attitude Director Indicator
ECAM:	Electronic Centralised Aircraft Monitor
ECU:	Electronic Control Unit
EEC:	Electronic Engine Control
EEPROM:	Electrically Erasable Programmable Read Only Memory
EFIS:	Electronic Flight Instrument System
EHSI:	Electronic Horizontal Situation Indicator
EICAS:	Engine Indicating and Crew Alerting System
EPR:	Engine Pressure Ratio
EPROM:	Erasable Programmable Read Only Memory
F	
FAA:	Federal Aviation Administration
FADEC:	Full Authority Digital Engine Control
FCL:	Flight Crew Licensing
FCU:	Flight Control Unit
FDS:	Flight Director System
FMCS:	Flight Management Computer System
FMS:	Flight Management System
G	
GM:	Guidance Material
GMT:	Greenwich Mean Time
GPS:	Global Positioning System
GPWS:	Ground Proximity Warning System
GS:	Glide Slope
H	
HSI:	Horizontal Situation Indicator
HUD:	Head-Up Display
I	
ICAO:	International Civil Aviation Organisation
ILS:	Instrument Landing System
INS:	Inertial Navigation System
IRS:	Inertial Reference System
L	

Large aircraft: means an aircraft, classified as an aeroplane with a maximum take-off mass of more than 5700kg, or a multi-engined helicopter.	
LCD:	Liquid Crystal Display
LoA:	Letter of agreement
LOC:	Localiser
LRU:	Line replaceable Unit
M	
Maintenance:	means any one or a combination of overhaul, repair, inspection,
replacement, modification or defect rectification of an aircraft or component, with the exception of pre-flight inspection.	
MEL:	Minimum Equipment List
MHRS:	Magnetic Heading Reference System
MM:	Maintenance Manual
MMEL:	Master Minimum Equipment List
MOA:	Maintenance Organisation Approval
MOE:	Maintenance Organisation Exposition
MoC:	Means of Compliance
MTO(A):	Maintenance Training Organisation (Approval)
MTOE:	Maintenance Training Organisation Exposition
MTOM:	Maximum Take Off Mass
N	
NAV:	navigation
O	
OAT:	Outside Air Temperature
OEM :	Original Equipment Manufacturer
Ops:	Operations
P	
PCB:	Printed Circuit Board
PCP:	Products Certification Procedure
PPA:	Products, parts and appliances
Pre-flight Inspection:	means the inspection carried out before flight to ensure that the aircraft is fit for the intended flight.
R	
RMI:	Radio Magnetic Indicator
S	
SARP:	ICAO Standards and Recommended Practices
SAS:	Stability Augmentation System

SECAL:	Selective Calling
SoD:	State of Design
SoR:	State of Registry
SRM:	Structural Repair Manual
STC:	Supplemental Type Certificate
STD:	Synthetic Training Device
STCH:	STC Holder
T	
TAS:	True Air Speed
TAT:	Total Air Temperature
TC:	Type Certificate
TCH:	Type Certificate Holder
TCDS:	Type Certificate Data Sheet
TET:	Turbine Entry Temperature
TGT:	Turbine Gas Temperature
ToA:	Terms of Approval
ToR:	Terms of Reference
TVP:	Type validation principles
U	
UAV:	Unmanned Aerial Vehicle
V	
VDU:	Visual Display Unit
VNAV:	Vertical Navigation
VOR:	Very-high-frequency Omnidirectional Range
VS:	Vertical Speed
W	
WG:	Working Group
WXR:	Weather Radar Transceiver

Appendix B Suggested Study Material

The following is a list of publications which may be useful when studying for knowledge examinations in support of a CAR 66 maintenance licence.

Writer	Name of book	**Applicable Modules
AAC	Airworthiness Advisory Circulars	10
AC Parkinsons	Machine Drawing	6,7
AC Kermode	Mechanics of Flight	8, 11A, 11B, 13
AIC	Aeronautical Information Circulars	10
Albert D Helfrick	Modern Aviation Electronics	5, 11A
ASM International	Composite Engineered Material Hand Book ASM	6, 7
AW Judge	Elementary Handbook of Aircraft Engines	14, 15
B K Paride	Life Extension Technologies for Ageing A/c	7
B.L.Theraja	Electrical Technology	3
Bemard Grob	Basic Electronics	4
Borje forssell	Radio Navigation System	13
Brain Kendel	Manual of Avionics	11A, 13
C.A.Williams	Aircraft Instruments	5
Casamassa & Ralph D Bent	Jet Aircraft power Systems	14
Cindy Foreman	Advanced Composites (EA-358)	6, 11A, 11B, 12
Clancey	Aerodynamics	8, 11A, 11B, 13
Dale Crane & R.Scheppler	Aircraft Oxygen System	11A, 11B
Dale Crane	Basic Electricity	3, 6
Dale Crane	A & P Mechanics	6
Dale Crane	Basic Electronics and Radio Installation	13
Dale Crane	Aviation Maintenance Technician Series (A/F Structure)	6, 7, 8, 11A
Dale Crane	Aviation Maintenance Technician Series (A/F System)	6, 7, 8, 11A
Dale Crane	Aviation Maintenance Technician Series (Power Plant)	11B, 15, 16
David Herris	Flight Instrument & AFCA	13
DGCA	All Applicable CARs/Procedure Manuals and other regulatory documents	10
E.H.J. Pallett	Aircraft Instruments	4, 11A
E.H.J.Pallett	Automatic Flight Control	4, 8, 13
E.H.J.Pallett	Aircraft Electrical System	3, 11A, 12, 13
Edward Hughes	Electrical & Electronics Technology	3
Eismin	Aircraft Electricity & Electronics	3, 4, 5, 11A, 11B,

		13,
FAA	A & P Mechanics (**General** Handbook EA-AC 65-**9A**)	6, 7
FAA	A & P Mechanics (**Airframe** Hand Book EA-AC 65-**15A**)	7
FAA	A & P Mechanics (**Power Plant** Hand Book EA-AC 65-	16
	12A)	
FAA	Air frame Test Guide (Mechanic)	7, 8
FAA	Aviation Maintenance Technician Hand book	6,7,16
FAA EA AC 61-	Basic Helicopter Hand Book13B	12
Frank Delp	Aircraft Propeller and Controls-	15, 16, 17
George F. Titterton	Aircraft Materials and Processes	6, 7, 12
George Kennedy	Electronic Communication System	13
Govt. of India	Aircraft Act 1934	10
Govt. of India	Aircraft Rule 1937	10
Henry W.Cole	Understanding Radar	13
Herschel Smith	Aircraft Piston Engines	16
Ian Moir and Allan Seabridge	Civil Avionics Systems	3, 4
ICAO Doc 9806	Human Factor Guidelines	9

ICAO Doc 9683	Human Factors Training Manual	9
ICAO Doc 9806	Human Factors Guidelines for Safety Audits Manual	9
ICAO Doc 9824	Human Factor Guidelines for A/c Maint Manual	9
Irwine Treager	Aircraft Gas Turbine Technology	15
J E Bygate	Aircraft Electrical Systems	11A, 11B
J.E Heywood	Light Aircraft Maintenance	11B, 16,17
J.Powell	Aircraft Radio System	13
J.Seddon	Basic Helicopter Aerodynamics	12
James A Enderson & Tatro	Shop Theory	7
James W Wassen	Avionics Systems operation & Maintenance	13
Jeppesen	A & P Technician Air Frame Text Book	11A
Jeppesen	Avionics Fundamental	4, 5
Jeppesen	Aircraft A & P Technician Power Plant	14, 15, 16, 17
Jeppesen	Transport Category Aircraft System	11A
Joe Christy	Aircraft Construction Repair and Inspection	7, 11A, 11B, 13
John Fay	The Helicopter and How to Fly	12, 13
John M Ferrara	Aviation Electronics	11A, 11B, 13
Joseph Schafer	Basic helicopter maintenance-	12
Keith W.Bose	Aviation electronics	5, 13
Kemedy/Davis	Electrical Communication System	13

Kroes & Wild	Aircraft Power Plants	15
Kroes, Walkins, Delp	Aircraft Maintenance & Repair	7
Lalit Gupta	Aircraft Structure	11A, 11B
Larry Reithmaier	Aircraft Mechanics Shop Manual	7, 11A
M Guillon	Hydraulic Servo Systems	11A, 11B
Malvino and Leech	Digital Fundamentals	4
Mathur	Introduction to Microprocessor	5
Mike Tooley	Aircraft Digital Electronic and Computer System	3,4,5
Mike Tooley & David Wyatt	Aircraft Elecrical & Electronic Systems	3,4,5
Millman and Halkias	Integrated Electronics	3,4, 5
Muneef Alwan	Transistor Techniques	4
Nordian, LMU, KLM	Airframe & System	11A, 11B
P.L. Ballaney	Heat Engines	16
R.W.Prouty	Helicopter Aerodynamics-	12
Rolls Royce	The Jet Engine	15
Ruth & Warner Spencer	Aircraft Dopes & Fabrics	6
Simon New Man	Helicopter Flight	12
Sterling	Basic Synchros and Servomechanism Part – I & II	4
Thomas. W. Wild	Transport Category Aircraft System	12, 13

Titterton	Aircraft Materials & Processes	6,7,12
V K Mehta	Principles of Electronics	4
W.Z.Stepniewski	Rotary Wing Aerodynamics-	12
Wagton Donk	Principle of Helicopter Flight	12
Walter C Bosshart	Design and Technology	3,4,5
William Shepard	Human Factor Guide for Aircraft Maintenance (FAA)	9

-- **Not restricted to the following modules.

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CHAPTER 11

CAR-147 BASIC AND APPROVED MAINTENANCE TRAINING ORGANISATIONS

11.1 Introduction

11.2 CAR 147 Approval of Organisations to Conduct Basic Licence Training

11.3 CARS-147 Approval of Organisations to Conduct Type Training

11.4 Exposition and Procedures

11.5 Records of Training

11.6 Application to Become a CAR-147 Approved Organisation

CHAPTER 11

CAR-147 AND APPROVED MAINTENANCE TRAINING ORGANISATIONS

11.1 INTRODUCTION

CAR-147 specifies the requirements to be met by organizations seeking approval to conduct type training and examination as specified in CAR 66.

This chapter must, be treated as guidance only.

Maintenance Training Organisations (MTO's) may be approved to conduct type training courses in accordance with the regulations of CAR-147 and CAR-66 syllabus.

For details of approved organisations please refer to DGCA website http://dgca.nic.in/

11.2 CAR-147 APPROVAL OF ORGANISATIONS TO CONDUCT BASIC LICENCE TRAINING

Reserved.

11.3 CAR-147 APPROVAL OF ORGANISATIONS TO CONDUCT TYPE TRAINING

Type training as required by CAR 66.A.45 (a) must meet the requirements of CAR-66 Appendix III appropriate to licence category.

Where a manufacturer provides training on their product, such as an engine type, that element must be specifically aligned to the aircraft type for licence application. Aircraft type ratings are listed in AMC CAR-66 Appendix I.

11.4 EXPOSITION AND PROCEDURES

11.4.1 Quality System

The organisation is required to have a quality system in place for both the management of the training and the quality audit function to ensure compliance with the requirements. A key issue is therefore the preparation of procedures to support the organisation's activities. The topics to be covered will vary according to the way in which the organisation structures itself. It is not expected however that procedures covering unrelated activities would be included in the CAR-147 procedures. The information should be concise, relevant and workable.

11.4.2 Validity and Variations

Under CAR-147 approval is issued for a maximum period of five years. The approval will remain valid subject to the following:

1. The organization remaining in compliance with CAR-147, in accordance with the provisions related to the handling of findings as specified under 147.A.160(b); and
2. The DGCA officials being granted access to the organization to determine continued compliance with CAR-147 and
3. The certificate not being surrendered or revoked.

Note: If surrendered or revoked, the approval must be returned to the DGCA.

The organisation must advise the DGCA of any proposed changes to the organisation that may affect the approval, prior to the change taking place. Failure to advise the DGCA of any changes may result in suspension or revocation of approval.

11.4.3 Maintenance Training Organisation Exposition

The organisation's exposition, describing the organisation and its procedures, should include the following:-

• A statement signed by the Accountable Manager confirming that the maintenance training organisation exposition and any associated manuals, define the maintenance training organisation's compliance with CAR-147 and should be complied with at all times.

• The title(s) and name(s) of the person(s) nominated in accordance with 147.A.105 (b).

• The duties and responsibilities of the above, including matters on which they may deal directly with the DGCA on behalf of the maintenance training organisation.

• A maintenance training organisation chart showing associated chains of responsibility of the person(s) specified.

• A list of training instructors, knowledge examiners and practical assessors.

• A general description of the training and examination facilities located at each address, specified in the maintenance training organisation's approval certificate, and if appropriate any other location, as required by 147.A.145(b).

• A list of the maintenance training courses which form the extent of the approval.

• The maintenance training organisation's exposition amendment procedure.

• The maintenance training organisation's procedures, as required by 147.A.130 (a).

• The maintenance training organisation's control procedure, as required by 147.A.145(c), when authorised to conduct training, examination and assessments, in locations different from those specified in 147.A.145 (b).

• A list of the locations pursuant to 147.A.145 (b).

A recommended format for the exposition can be found at Appendix I to AMC (CAR-147).

11.5 RECORDS OF TRAINING

Any training organisation should keep the records of basic training, type training, examinations and assessments, of all students training for an unlimited period after the completion of a course. The DGCA may need to inspect a student's training records before issuing a licence or rating. All records thus required will be returned.

11.6 APPLICATION TO BECOME A CAR-147 APPROVED ORGANISATION

An organisation wishing to become CAR-147 approved must formally submit an application in CA Form 12 given in Appendix IV to AMC of CAR-147.

The application should be accompanied with Para wise CAR 147 compliance Report.

Use this form for the grant of a CAR-147 approval for type training, or for the extension or variation of an existing CAR-147 approval.

11. 6.1 Supporting Documents

Draft Exposition – a draft exposition must be submitted, or if you are applying for the variation of an approval, a draft amendment to the exposition which covers the scope of the variation applied for.

Form 4 – listing senior personnel and examiners detailing their responsibilities within the organisation as required by CAR-147. This form must also be completed for any personnel changes involving those staff.

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