CIVIL AVIATION DEPARTMENT
Republic of Maldives

CIVIL AVIATION ADVISORY PUBLICATIONS

CAAP 66-1

Engineer Licensing Guidance Document

Issue 04 04 October 2011

WELCOME TO ENGINEERS LICENSING GUIDANCE DOCUMENT

This document is an adoption of Engineer's Licensing Guidance Document (ELGD) issue three, produced by United Kingdom, Civil Aviation Authority.

Issue four of CAAP 66-1 has been amended by removing the MCAR-66 module examination exemption privilege for academic qualification holders and introducing ASC 66-1 which gives details of validation of foreign licences of Aircraft Maintenance Engineers.

The ELGD has been designed to assist Aircraft Engineers 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 MCAR-66, the conversion of MAR D02 licences to MCAR-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 MCAR-66, Air Safety Circulars should always be referred to.

Civil Aviation Department
04 October 2011

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SECTION A

GENERAL INFORMATION

A1 INTRODUCTION

This guidance document explains the privileges of and the requirements for aircraft maintenance licences and ratings together with the administrative procedures for the application and processing of the same. It also explains the conversion process of protected rights that may apply to licence holders converting from a MAR D02 Licence to a MCAR-66 Licence.

A2 RESERVED

A3 TRANSITION TO MCAR-66

MCAR-66 became effective from July 15, 2007 replacing MAR-66. MAR-66 became effective on January 1, 2007 replacing MAR D02.

A4 REQUIREMENT TO HOLD A LICENCE UNDER MCAR-66

In order to be granted authorisation to issue certificates of release to service a person must hold a valid licence issued in accordance with MCAR-66 by the specified date given in sub section A3. The minimum age to hold a MCAR-66 licence is 18 years. In order to certify, the minimum age is 21.

A5 HOW TO BE AN AIRCRAFT MAINTENANCE ENGINEER UNDER MCAR-66

Under MCAR-66 an aircraft maintenance licence confirms that the person to whom it refers has met the MCAR-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 categories within the aircraft maintenance licence are:

Category A Maintenance Certifying Mechanic

Category B1 Maintenance Certifying Technician (Mechanical)

Category B2 Maintenance Certifying Technician (Avionic)

Category C Base Maintenance Certifying Engineer

A5.1 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. For further information on Category A please refer to Section C.

A5.2 Category B

The sub categories for Category B Line Maintenance Certifying Technician/Base Maintenance Technician are:

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

B2 Avionics (no further sub division).

The wider privileges of the Category B licence and the role of the Technician 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 Section D. For further information on Category B2 please refer to Section E.

A5.3 Category C

The requirements for Category C can be achieved via two routes: a graduate with a degree in Aeronautical Engineering recognised by the CAD, or a similar discipline that is considered relevant to aircraft maintenance and that has been accepted for this purpose by the CAD, or a B1 or B2 licence holder with a prescribed period of certifying experience. For further information on Category C please refer to Section F.

A5.4 Knowledge Requirements and Examinations

Applicants who successfully complete a MCAR-147 approved basic training course will have received instruction in the required knowledge subjects and have passed examinations associated with that course and the respective licence category.

Unless qualifying for exemptions, all other licence applicants will have to sit the appropriate examinations. These consist of various modular examinations in multi choice question format, intended to sample the knowledge across the appropriate syllabus and an essay paper to verify the use of written English. The content of the examinations vary both in range and complexity according to the licence category being sought.

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

A6 MEDICAL

Certifying staff must not exercise the privileges of their certification authorisation if they know or suspect that their physical or mental condition renders them unfit to exercise such privileges. For further information refer to UK CAA airworthiness notice No.47, until such time full adoption of this Airworthiness notice into our requirements.

A6.1 RESERVED

A7 PROOF OF IDENTITY

For all MCAR-66 initial issue applications, proof of identity is required. In most cases, a passport (for foreigners), National Identify Card or birth certificate for Maldivians must be provided. In all cases, if the personal details provided on the licence application form conflicts with the evidence of identity or, the information provided is not clear both on the evidence of identity and application form, the application will be returned to the applicant without assessment.

A8 RESERVED

A9 FOREIGN LICENSE HOLDERS

Foreign license holders who are wishing to pursue the MCAR-66 licence must complete all relevant requirements according to the licence being applied for. Previous aircraft maintenance practical experience within an organisation approved by the local National Aviation Authority may be counted towards the total experience requirement providing acceptable evidence of authenticity of the experience is provided.

As for the foreign license holders who are wishing to apply for validation of their national license to work in a local Maldivian AMO, please refer to ASC 66-1.

All foreign licenses will be verified by the CAD before recognition.

A copy of the passport should be submitted along with the validation application CAD Form 19V.

A10 RESERVED

A11 MCAR-66 CERTIFICATION PRIVILEGES

Certifications are made in accordance with the procedures of the MCAR-145 or MCAR-M approved

maintenance organisations, within the scope of the issued authorisation(s). Certifying staff qualified in accordance with MCAR-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.

A11.1 Category A

A category A certifying licence permits the holder to issue certificates of release to service following minor scheduled line maintenance and simple defect rectification within the limits of tasks specifically endorsed on the authorisation. The certification privileges are restricted to work that the authorisation holder has personally performed in a MCAR-145 organisation.

A11.2 Category B1

A category B1 certifying staff authorisation permits the holder to issue certificates of release to service following maintenance, including aircraft structure, power plants and mechanical and electrical systems. Authorisation to replace avionic line replaceable units requiring simple tests to prove their serviceability is also permitted.

Note: Compass compensation and adjustment certification privileges are contained within a Category B1 AML.

A11.3 Category B2

A category B2 certifying staff authorisation permits the holder to issue certificates of release to service following maintenance on avionic and electrical systems. Category B2 certifying staff can qualify for any A sub category subject to compliance with the appropriate A sub category requirements.

Note: Compass compensation and adjustment certification privileges are contained within a Category B2 AML.

A11.4 Category C

A category C certifying staff authorisation permits the holder to issue certificates of release to service following base maintenance. The authorisation is valid for the aircraft, in its entirety, including all systems.

A12 VALIDITY PERIODS AND RENEWAL OF LICENCES

Licence privileges relating to the maintenance and certification of aircraft above and below 5700kg MTOM may be converted to MCAR-66 at the time of renewal or upon request by the license holder. CAD Form 19 'MCAR-66 Aircraft Maintenance Engineer's Licence Initial/Variation/renewal' – Application, should be used for the transfer of Protected Rights based upon MAR D02 including type ratings.

An application for licence renewal cannot be made to the CAD more than 60 days before expiry. However, if the licence holder intends to apply for conversion to a MCAR-66 licence instead of renewing the MAR D02 licence. Applications involving conversion will be accepted before that time and in any event should be made no later than 6 weeks before the licence is due to expire to avoid any break in continuity.

The validity period of MCAR-66 license is five years.

Further information relating to the conversion can be found in Section B.

A13 PROTECTED RIGHTS

Protected rights are the entitlement to have MAR D02 license privileges transferred to a MCAR-66 aircraft maintenance licence.

On conversion from a MAR D02 licence, basic licence categories and aircraft type ratings held will be transferred to the MCAR-66 Aircraft Maintenance Licence. Limitations will be applied where appropriate to the basic licence and to aircraft type ratings reflecting the scope of the previous basic licence held

A14 RESERVED

A15 RESERVED

A16 AIRCRAFT MAINTENANCE LOGBOOK

Under MCAR-66 there is a requirement to record satisfactory basic training and skills attainment as a pre-requisite for basic licence issue, both for applicants who have completed a MCAR-147 training course and applicants who have not had formal technical training.

To assist both basic and type rating applicants to demonstrate that they meet the licensing requirements, the CAD has introduced an Aircraft Maintenance Engineer's Logbook which is now available for use and can be downloaded from the CAD website at www.aviainfo.gov.mv. The Logbook is not available directly from the CAD.

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

A17 THE LOGBOOK ASSESSOR

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

A17.1 MCAR-145 and MCAR-147 Logbook Assessor

The Assessor will be nominated by the MCAR-145 or MCAR-147 organisation by virtue of holding a supervisory or management position within the approved organisation. In this case the CAD 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 MCAR-145 or MCAR-147 approval or whilst they remain in the employ of that organisation.

Note: It is not necessary to submit application form CAD Form 1016 as the CAD Assessor Authorisation is not required for a MCAR-145 or MCAR-147 organisation.

A17.2 The CAD Authorised Assessor (for applicants working outside of MCAR-145 and MCAR-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 CAD on CAD Form 1016, which can be downloaded from our web site www.aviainfo.gov.mv.

A letter of approval will be issued to the CAD Authorised
Assessor and will be valid for two years. After this period the Assessor must re-apply.

A18 THE MCAR-66 APPLICATION FORMS & GUIDANCE DOCUMENTS

MCAR-66 application forms and accompanying guidance documents are available now. 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 new forms replace the old forms DCA/AW/01 and DCA/AW/04.

The forms with accompanying guidance can be downloaded from our web site www.aviainfo.gov.mv.

The main CAD Form 19 guidance document can be viewed at Appendix B to this Section. Updates to this document will be available on our web site.

A19 ADMINISTRATIVE PROCEDURES

This section details the administration procedures when applying to the CAD for a particular service. Applications should be sent to: Civil Aviation Department, Ministry of Tourism and Civil Aviation, 7th Floor, P.A.Complex, Hilaalee Magu, Male', 20307, Maldives.

A19.1 Applying for a Service

CAD have revised the application process in line with the introduction of MCAR-66. This process includes a revised application form CAD Form 19 which must be used for all MCAR-66 applications. Comprehensive and easy-to-follow application guidance is provided.

When an application is submitted to CAD, the CAD 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.

MCAR-66 Module 10 - Aviation Legislation conducted by CAD should be passed by all applicants before initial issue of a Maldivian license. The examination request shall be made via a letter or e-mail.

CAD Form 19, application for AME written examination (CAD Form 19E) and CAD authorized logbook assessor application (CAD Form 1016) shall be accompanied with a copy of National ID card (Maldivians only) or passport. Originals should also be brought with the applicant in case CAD needs verification. Originals shall be handed over to the applicant immediately after verification. For other cases see the following.

A19.2 Scheme of Charges

Details of our scheme of charges can be found on our website: www.aviainfo.gov.mv.

A19.3 Change of Address

Changes of address should be made in writing by letter, fax and must include the current licence and National ID card (for Maldivians only) or passport for foreigners. Quote your details of the new permanent address. Once actioned, the applicant will be informed. When received the licence must be signed in ink.

A19.4 Change of Name

The holder of a licence who has changed their name is required to notify the CAD by completing CAD Form 19.

For any change of name you are required to submit either actual passport, national ID card (Maldivians only).

A19.5 Change of Nationality

An application for change of nationality must be made by completing CAD Form 19.

A19.6 Lost Licence

Individuals who have lost their licence are required to submit CAD Form 19 for a duplicate licence together with the police report if the matter was reported to the police.

Note: The current licence should be returned to the CAD prior to change of details.

A20 COMPLAINTS AND APPEALS

If you have a complaint or are appealing against a decision not to issue your licence, a letter should be addressed to: Executive Director, Civil Aviation Department, 7th Floor, P.A.Complex, Hilaalee Magu, 20307, Male'.

The letter of complaint or appeal should include

• Your full name, date of birth and reference number.

• Full details of the complaint/appeal.

• Names of CAD staff handling your application/enquiry.

• Any relevant contact/application dates.

APPENDIX TO SECTION A

- Appendix A List of Application Forms

APPENDIX A LIST OF APPLICATION FORMS

Form Number	Form Title
CAD Form 19E	MCAR-66 Aircraft Maintenance Licence – Application for Written Examination
CAD Form 12	MCAR-147Grant or Variation of Approval – Application
CAD Form 1013	Approval of Type Training for MCAR-66 Type Rating – Application
CAD Form 19	MCAR-66 Aircraft Maintenance Engineer's Licence Initial / Variation / Renewal Application
CAD Form 1016	CAD Authorised Assessor Application
CAD Form 19V	Application for Validation of Foreign AME Licence

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SECTION B

CONVERSION OF PROTECTED RIGHTS

B1 Reserved

B2 Reserved

B3 Reserved

B4 Reserved

B5 QUALIFICATIONS GIVING PROTECTED RIGHTS

Qualifications that may be included in a MCAR-66 licence issued to reflect 'protected rights' are as follows:

- LWTR's on a valid MAR D02 licence
- Type Ratings on a valid MAR D02 licence

B6 CONVERSION OF MAR D02 LWTR TO MCAR-66 BASIC LICENCE

LWTR's on a valid licence granted or extended under MAR D02 may be converted to a full or restricted MCAR-66 licence in the basic categories of B1 and/or B2 reflecting the combination of LWTR's held. Where the sum of these does not constitute a full MCAR-66 category or sub-category, limitations will be added to reflect the extent of the individual's protected rights. These limitations are listed in Section B12.

If the licence holder qualifies for a B1 sub-category AML, the equivalent A sub-category AML will also be granted (excluding licences with limitations 10 & 11 applied).

Holders of a MAR D02 licence may also qualify for the grant of MCAR-66 Category C AML. For further information refer to Section F.

Part and full conversion examinations as appropriate may be taken before or after the conversion process to remove limitations, which would otherwise apply. In most instances additional experience will also need to be demonstrated before qualifying for the full category or sub-category of a MCAR-66 AML.

A table covering the most common MAR D02 to MCAR-66 licence conversion scenarios can be found in Appendix B

B7 Reserved

B8 Reserved

B9 Reserved

B10 Reserved

B11 CONVERSION OF MAR D02 TYPE RATINGS TO MCAR-66 LICENCE

Aircraft types on a MAR D02 licence may be transferred to a MCAR-66 licence under protected rights. In general, obsolete types not shown in the MCAR-66 list of type rating descriptions will not be transferred.

B11.1 A & C (Mechanical) Type Ratings

Type ratings for individual aeroplanes or helicopters will be transferred as type ratings in Category B1 with any appropriate limitations and in Category C if the requirements of Section B14 are met.

B11.2 E, I & R (Avionic) Type Ratings

Avionic type ratings held on MAR D02 licence at the time of conversion will be transferred to the replacement MCAR-66 AML in the form of type ratings.

Note: A group type rating does not automatically entitle the holder to certify work on an aircraft type with which he or she is not familiar. It is incumbent upon the individual to first familiarise themselves with the general characteristics of the aircraft, the maintenance documentation system used by the manufacturer and the

relevant airworthiness directives that apply to the aircraft type.

B12 PROTECTED RIGHTS TO CATEGORY C

The Category C licence, Base Maintenance Certifying Engineer, is primarily a maintenance management licence that permits the holder to be authorised by a MCAR-145 approved maintenance organisation to release an aircraft following base maintenance. For the grant of Category C, MCAR-66 requires that an individual must have three years experience as a certifying technician in either Category B1 or B2. Since the Category C licence focuses upon the overall maintenance management of an aircraft during base maintenance and the subsequent single Certificate of Release to Service covering all trade disciplines, the CAD is unable to grant a Category C licence to the holder of only a single MAR D02 Category (e.g.applicant with only category A or C, but not both A & C are not eligible for C)

On transfer of protected rights, Category C will only be issued to those who hold a MAR D02 licence with either:

Category A & C, and for a minimum of three years have held type rating relating to aircraft of 5700 kg or above, or

Category E, I & R, and for a minimum of three years have held type rating relating to aircraft of 5700 kg or above

B13 LIMITATIONS ON A CONVERTED LICENCE

Limitation codes may be applied singly or in combination to basic categories and type ratings to reflect the scope of protected rights transferred to a MCAR-66 licence. The limitation codes and their translation which is printed on the reverse of the licence are listed below:

1. Excluding electrical power generation & distribution systems.
2. Excluding instrument systems, INS/IRS and Flight Directors systems.
3. Excluding autopilot systems on aeroplanes.
4. Excluding autopilot systems on helicopters.
5. Excluding automatic landing and auto throttle systems on aeroplanes.
6. Excluding radio communication/navigation and radar systems.
7. Excluding radio radar systems.
8. Reserved.
9. Excluding avionic LRUs.
10. Excluding airframe.
11. Excluding engine.
12. Excluding all pressurised aeroplanes.
13. Reserved.
14. Excluding pressurised aeroplanes above 5700 Kg MTOM.
15. Excluding supercharged piston engines in aeroplanes.
16. Excluding navigational and electronic instrument systems, FDR, GPWS and vibration monitoring systems.
17. Excluding radio-coupled autopilot systems in aeroplanes.
18. Excluding radio-coupled autopilot systems in helicopters.
19. Excluding all tasks with the exception of Compass Compensation and adjustment only.

20. Excluding propeller-turbine engines.

21. Excluding all tasks with the exception of minor scheduled line maintenance up to and including Daily Inspections.

22. Excluding all tasks with the exception of Cabin Maintenance tasks.

23. Excluding all tasks with the exception of DC electrical components in mechanical systems.

24. Excluding all systems with the exception of LRUs within In-flight Entertainment Systems.

25. Excluding electrical power generation and distribution systems on aircraft above 5700 Kg MTOM

26. Excluding Avionic LRU replacement and BITE checks on aircraft above 5700 Kg MTOM.

27. Excluding Antenna and Antenna feeder systems relating to radio and radar systems.

28. Excluding maintenance tasks on wooden structures and fabric coverings.

B14 REMOVING LIMITATIONS FROM A BASIC LICENCE

To remove limitations from a basic B1 or B2 MCAR-66 licence, where protected rights do not directly convert to a full MCAR-66 Category/sub-category licence the relevant conversion examinations must be passed and any appropriate experience requirements met. Applications to remove limitations on a basic Category/ sub-category must cover all the limitations. Please refer to Appendix B to this Section and also sub-section B14 below for the removal of limitations.

B15 CONVERTING TO A NON-RESTRICTED (WITHOUT LIMITATIONS) BASIC CATEGORY LICENCE

To convert to a non-restricted MCAR-66 basic B1 or B2 category licence where protected rights do not directly convert to a full MCAR-66 Category/sub-category, the relevant conversion examinations need to be taken in addition to meeting any appropriate experience requirements. Appendix A to this Section contains a self-assessing table listing common conversion scenarios.

Where the appendix table does not cover a specific situation, an assessment will be required and applicants should apply in writing to CAD. Further information on examinations can be found in Section J.

Application should be made at the same time as that for conversion once the required conversion examinations and experience has been completed.

B15.1 Experience Requirement

Except in the cases listed in Appendix C to this Section, typically 6 months relevant additional experience is also required in the areas appropriate to the basic category/sub-category, which are not covered by protected rights showing evidence of the experience including detailed evidence of competence in the relevant basic skills.

B16 REMOVING LIMITATIONS FROM A TYPE RATING

Where the limitation applies only to the type rating, it can be removed by completing either an approved conversion course covering the differences or a full B1 or B2 type course as appropriate. This training must be conducted by a suitably approved MCAR-147 maintenance training organisation or be a type course approved by the CAD.

The experience requirement as detailed in B15.1 is still required, except that the experience may be reduced. Please refer to H8.

B17 MAKING YOUR APPLICATION

Note 1: Refer to Appendix A to Section A for information on the revised forms and guidance.

CAD Form 19 should be used for all conversion applications

B17.1 Reserved

B17.2 Supporting Documents

The supporting information required, where applicable, in addition to CAD Form 19 is listed below.

B17.3 Course Completion Certificates – issued by CAD approved organisations or EASA Part-147 organisations

B17.4 Reserved

Note 2: Having clear concise supporting data will enable us to issue licences more efficiently and with less risk of rejections. The CAD will not contact the applicant for clarification of details on applications and therefore it is most important to have the correct information before applying.

B17.5 Additional Information

Where a type rating is already endorsed on the MAR D02 licence it will be endorsed on the MCAR-66 licence without further requirement. It will however, be limited to the same extent as the MAR D02 type rating.

B18 IF YOUR APPLICATION FAILS

If your application has been rejected for whatever reason you will be disappointed and want an explanation as to what went wrong. We aim to make sure that you understand the reason for rejection and to give clear guidance on how to get your application back on track.

Most common reasons for rejection are

- **Quality Manager has not certified supporting documentation!**
- **More detailed summary of experience required**
- **Incomplete application forms**
- **Licence not submitted**
- **Incorrect fees**

B18.1 Complaints and Appeals

Whilst CAD endeavour to provide a high level of service to our Customers, 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 you have a complaint or are appealing against a decision not to issue your licence, a letter should be addressed to: Civil Aviation Department, Ministry of Tourism and Civil Aviation, 7th Floor, P.A.Complex, Hilaalee Magu, Male', 20307, Maldives

The letter of complaint or appeal should include

- Your full name, date of birth and National ID number for Maldivians or passport number for foreigners.
- Full details of the complaint/appeal.
- Any relevant contact/application dates.

B18.2 Procedure

Your letter of complaint/appeal will be dealt in accordance with CAR Part 3, Division 4-Appeal.

APPENDICES TO SECTION B

APPENDIX A COMMON MCAR-66 CONVERSION SCENARIOS

Conversion tables are based on MAR D02 categories and type ratings held.

Note: An applicant for conversion to MCAR-66 who has passed the necessary conversion examinations will be required to provide evidence of appropriate experience in areas not covered by their protected rights.

Note: Category A privileges will be granted in the same sub-categories as the B1 category unless the B1 sub-category contains limitation 10.

Table 14

LWTR(s) Held	MCAR-66	Plus Limitation(s)	
A - Aircraft C - Engines	B1-1	1 9	Excluding electrical power generation & distribution systems Excluding Avionic LRU's
A - Aircraft C – Engines E – Electrical systems	B1-1	9	Excluding Avionic LRU's
A - Aircraft C – Engines E – Electrical systems Avionic LRU replacement	B1-1	None	
E – Electrical systems I – Instrument systems R – Radio systems	B2	None	

APPENDIX B REMOVAL OF LIMITATIONS/CONVERTING TO A FULL CATEGORY LICENSE – EXAMINATION REQUIREMENTS

The most common conversion examinations required are detailed in tables 4,5,6,7 and 8. (Taken from CAD Form 19 guidance document)

Note: Conversion examinations may be taken prior to or post conversion to MCAR-66. Application for the removal of limitations will be accepted at the same time as conversion to MCAR-66.

Conversion to B1.1 Aeroplanes-Turbine

Table 4

MAR D 02 Categories Held	MCAR-66 Modules and part-Modules required	
	Full Modules	Part Modules
A - Aircraft C - Engines	4 5	3.9 to 3.18 7.7 11.5, 11.6, 11.14
A - Aircraft C – Engines E - Electrical	5	

Conversion to B1.2 Aeroplanes-Piston

Table 5

MAR D 02 Categories Held	MCAR-66 Modules and part-Modules required	
	Full Modules	Part Modules
A - Aircraft C - Engines	4 5*	3.9 to 3.18 7.7 11.5, 11.6, 11.14

* this refers to the B1.2 and B1.4 syllabus

Conversion to B1.3 Helicopters Turbine

Table 6

MAR D 02 Categories Held	MCAR-66 Modules and part-Modules required	
	Full Modules	Part Modules
A - Aircraft C - Engines	4 5	3.9 to 3.18 6.3.2, 6.3.3 7.7 12.8, 12.15

Conversion to B1.4 Helicopters Piston

Table 7

MAR D 02 Categories Held	MCAR-66 Modules and part-Modules required	
	Full Modules	Part Modules
A - Aircraft C - Engines	4 5*	3.9 to 3.18 6.3.2, 6.3.3 7.7 12.8, 12.15

* this refers to the B1.2 and B1.4 syllabus

Conversion to B2 Avionic

Table 8

MAR D 02 Categories held	MCAR-66 Modules or part modules required
E – Electrical systems I – Instrument systems R – Radio systems	No examinations required.

Conversion from MAR D02 Aircraft & Engines (A&C) to B2 Avionic

Table 9

MCAR-66 Modules and part-Modules required			
Full Modules		Part Modules	
B1 level	B2 level	B1 level	B2 level
Nil	4 5	3.9 to 3.18 11.6, 11.14	7.4, 7.7 13.1c, 13.3, 13.4, 13.6, 13.8

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APPENDIX C EXEMPTION FROM EXPERIENCE REQUIREMENT

MCAR-66 Category Held	**Limitations Endorsed**	**Pre-conversion Protected Rights (aircraft below 5700 kg)**
B1-1	20	Jet Turbine Engines
B1-1	9	No Avionic Extension
B1-2	9	No Avionic Extension
B1-3	9	No Avionic Extension
B2	3 & 5 (but not 4)	Autopilots Helicopter (not Combined Category or Autopilots Aeroplanes)
B2	4 & 5 (but not 3)	Autopilots Aeroplanes (not Combined Category or Autopilots Helicopters)
B2	4 (but not 3)	Autopilots Aeroplanes (not Autopilots Helicopters)
B2	5 (but not 3 or 4)	Autopilots Rotorcraft & Autopilots Aeroplanes (not Combined Category)

Note: Demonstration of experience is not required in order to remove above limitations from basic AML but is required for aircraft type endorsements.

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SECTION C

CATEGORY A LICENCE

C1 THE CATEGORY A LICENCE

The Category A licence is a mechanical based licence and permits the holder to issue certificates of release to service within the limits of tasks specifically endorsed on the authorisation, following minor scheduled line maintenance and simple defect rectification. Ref MCAR-145.30(6).

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

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

C2 MCAR-147 APPROVED TRAINING ROUTE

A course of training can be undertaken under the auspices of a MCAR-147 approved basic training school. The course will consist of a minimum of 800 hours instruction, except for sub-Category A2 which will consist of 650 hours instruction. The purpose of the course is to teach the individual the basic underpinning theoretical knowledge required of the category A role and to provide basic skills and maintenance practices training to establish basic practical competence. The course includes theory exams and practical skills assessments as part of the training and qualification philosophy.

The approved course must be followed by a minimum of 1 year's practical line maintenance experience to consolidate the training received prior to licence application.

For information on MCAR-147 approved organisations refer to Section K.

C3 EXPERIENCE REQUIREMENTS

C3.1 General

An applicant for a category A licence must have completed a prescribed period of aircraft maintenance experience. This experience should include minor scheduled line maintenance and simple defect rectification on operating aircraft appertaining to the category of licence for which application is to be made.

C3.2 '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 application is made. 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.

C3.3 Self Starter and Other Experienced Applicants

Category A applicants who have not successfully completed a MCAR-147 approved course of training, should have at least 3 years practical maintenance experience on operating aircraft.

C4 REDUCTION IN EXPERIENCE REQUIREMENTS

A reduction in the 3 years experience requirement may be considered for certain applicants who fall into either category below. There are currently no standard assessment terms for these applications and therefore applicants are advised, before applying for licence issue, to ensure they meet the experience criteria in accordance with MCAR-66.30 and AMC 66.30 (a) and (b).

C4.1 'Skilled Worker'

A skilled worker is a person who has successfully completed a course of training, acceptable to the competent authority, 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.

C4.2 Experience Required

2 years where the applicant has already qualified in another profession as above.

C4.3 'Other Experienced Applicants'

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

C4.4 Experience Required

All applicants must have gained at least one year's experience on aircraft typical of the category or sub-category for which application is made. 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.

C4.5 'Experience gained outside Maldivian approved organisations'

Aircraft maintenance engineers with experience working on operational civil aircraft gained outside Maldivian approved organisations, may claim that experience towards the grant of a MCAR-66 licence, providing that the experience is deemed acceptable by the CAD.

C4.6 Experience Required

Experience claimed towards a MCAR-66 licence must meet the standards of MCAR-145 and must be correctly authenticated in a manner acceptable to the CAD.

C5 BASIC THEORETICAL KNOWLEDGE REQUIREMENTS

C5.1 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.

Knowledge level requirements and general information relating to examination requirements and procedures can be found in Section J.

C5.2 Aeroplanes Turbine-Engines (A1.1)

Module 1	Mathematics
Module 2	Physics
Module 3	Electrical Fundamentals
Module 5	Digital Techniques/Electronic Instrument Systems
Module 6	Materials & Hardware
Module 7	Maintenance Practices
Module 8	Basic Aerodynamics
Module 9	Human Factors
Module 10	Aviation Legislation
Module 11	Aeroplanes Aerodynamics, Structures & Systems
Module 15	Gas Turbine Engines
Module 17	Propeller

C5.3 Aeroplanes Piston-Engines (A1.2)

Module 1	Mathematics
Module 2	Physics
Module 3	Electrical Fundamentals
Module 5	Digital Techniques/Electronic Instrument Systems
Module 6	Materials & Hardware
Module 7	Maintenance Practices
Module 8	Basic Aerodynamics
Module 9	Human Factors
Module 10	Aviation Legislation
Module 11	Aeroplanes Aerodynamics, Structures & Systems
Module 16	Piston Engine

Module 17 Propeller

C5.4 Helicopter Turbine-Engines (A1.3)

Module 1 Mathematics
Module 2 Physics
Module 3 Electrical Fundamentals
Module 5 Digital Techniques/Electronic Instrument Systems
Module 6 Materials & Hardware
Module 7 Maintenance Practices
Module 8 Basic Aerodynamics
Module 9 Human Factors
Module 10 Aviation Legislation
Module 12 Helicopter Aerodynamics, Structures & Systems
Module 15 Gas Turbine Engine

C5.5 Helicopter Piston Engines (A1.4)

Module 1 Mathematics
Module 2 Physics
Module 3 Electrical Fundamentals
Module 5 Digital Techniques/Electronic Instrument Systems
Module 6 Materials & Hardware
Module 7 Maintenance Practices
Module 8 Basic Aerodynamics
Module 9 Human Factors
Module 10 Aviation Legislation
Module 12 Helicopter Aerodynamics, Structures & Systems
Module 16 Piston Engine

C5.6 Essay Paper

In addition to the multi-choice question paper relating to appropriate level and modules required, an essay paper must be taken. The essay paper will comprise questions drawn from the syllabus subjects covering Maintenance Practices (Module 7), Human Factors
(Module 9) and Aviation Legislation (Module 10).

C6 CREDITS FROM THEORETICAL KNOWLEDGE REQUIREMENTS

C6.1 General

Partial examination exemptions may be given to applicants who wish to extend their current licence to include a further basic Category/sub-Category.

C6.2 Extension of a Licence to include another Category

The modular syllabus of MCAR-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 most common cases of category conversion are detailed in Section G.

The CAD will conduct all conversion part module examinations (unless approval has been granted by the CAD for a MCAR-147 Organisation to conduct the examinations). Applications should be made in the normal way. Further general information on examinations can be found in Section J.

C7 MAKING YOUR APPLICATION

Note 1: Refer to Appendix A to Section A for information on form numbers.

CAD Form 19 should be used in respect of all Category A initial issue applications. Current forms may be downloaded from our web site (www.aviainfo.gov.mv). A guidance document that is linked to the application form will provide easy to follow guidance on the basic licensing requirements, which parts of the application to complete and what may be required

in support of your application. Refer to Section A, Appendix B.

Note 2: The Category A licence is a basic licence only and cannot hold any type ratings.

C7.1 Supporting Documents

Course Completion Certificates – issued by CAD approved organisations or EASA Part-147 organisations

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.

C8 IF YOUR APPLICATION FAILS

Please refer to Section B17
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SECTION D

CATEGORY B1 LICENCE

D1 THE CATEGORY B1 LICENCE

The B1 licence is a mechanical based licence and permits the holder to issue certificates of release to service following line maintenance, including aircraft structure, power plants and mechanical and electrical systems. Replacement of avionic line replaceable units requiring simple tests without the use of test equipment to prove their serviceability is also included within the privileges of this licence. A Category B1 licence holder also has a role in base maintenance in supporting the Category C certifier who is the final CRS/SMI signatory.

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

D2 MCAR-147 APPROVED TRAINING ROUTE

A course of training can be undertaken under the auspices of a MCAR-147 approved basic training school. The course will consist of a minimum of 2400 hours instruction. The purpose of the course is to teach the individual the basic underpinning theoretical knowledge required of the category B1 role and to provide basic skills and maintenance practices training to establish basic practical competence. The course includes theory exams and practical skills assessments as part of the training and qualification philosophy.

D2.1 B1.1 (Aeroplanes Turbine-Engine) and B1.3 (Helicopter Turbine-Engine)

The approved course must be followed by a minimum of 2 years practical maintenance experience to consolidate the training received.

D2.2 B1.2 (Aeroplanes Piston-Engine) and B1.4 (Helicopter Piston-Engine)

The approved course must be followed by a minimum of 1 year's practical maintenance experience to consolidate the training received.

Note: A full MCAR-66 B1 licence issued in a particular sub-category also entitles the holder to exercise the privileges of a Category A licence for other aircraft types, not endorsed on the MCAR-66 licence as type ratings, subject to the task training and authorisation requirements for those types being satisfied.

For information on MCAR-147 approved organisations refer to Section K.

D3 EXPERIENCE REQUIREMENTS

D3.1 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 of operating aircraft. This experience should include maintenance on aircraft structure, powerplant, mechanical and electrical systems and replacement of avionic LRU's requiring simple tests to prove their serviceability.

D3.2 'Recent Practical Maintenance Experience'

All applicants must have gained at least one year's experience on aircraft typical of the category or sub-category applied for. 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.

D3.3 Self Starter and Other Experienced Applicants

Category B1.1 or B1.3 applicants who have not attended a MCAR-147 approved course of training, should have at least 5 years practical maintenance experience on operating aircraft. Experienced engineers, such as Skilled Workers, Armed Forces, Coast Guards or Police, may be eligible for a reduction in experience required (refer to sub-section D4).

Category B1.2 or B1.4 applicants who have not attended a MCAR-147 approved course of training, should

have at least 3 years practical maintenance experience on operating aircraft. Experienced engineers, such as Skilled Workers, Armed Forces, Coast Guards or Police, may be eligible for a reduction in experience required (refer to sub-section D4).

D4 REDUCTION IN EXPERIENCE REQUIREMENTS

A reduction in the experience requirement may be considered for certain applicants who fall into either category below. There are currently no standard assessment terms for these applications and therefore applicants are advised, before applying for licence issue, to ensure they meet the experience criteria in accordance with MCAR-66.30 and AMC 66.30 (a).

D4.1 'Skilled Worker'

A skilled worker is a person who has successfully completed a course of training, acceptable to the CAD, 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.

D4.2 Experience Required

B1.1 and B1.3 applicants must demonstrate 3 years experience where the applicant has already qualified in another profession as above.

B1.2 and B1.4 applicants must demonstrate 2 years experience in a civil maintenance environment appropriate to the category applied for, where the applicant has already qualified in another profession as above.

D4.3 'Other Experienced Applicants'

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

D4.4 Experience Required

B1.1 and B1.3 applicants must demonstrate 1 years experience in a civil maintenance environment appropriate to the category applied for, where the applicant can provide satisfactory evidence of working in one of the above disciplines.

B1.2 and B1.4 applicants must demonstrate 1 years experience in a civil maintenance environment appropriate to the category applied for, where the applicant can provide satisfactory evidence of working in one of the above disciplines.

D4.5 'Experience gained outside Maldivian approved organisations'

Aircraft maintenance engineers with experience working on operational civil aircraft gained outside Maldivian approved organisations, may claim that experience towards the grant of a MCAR-66 licence, providing that the experience is deemed acceptable by the CAD.

D4.6 Experience Required

Experience claimed towards a MCAR-66 licence must meet the standards of MCAR-145 and must be correctly authenticated in a manner acceptable to the CAD.

D5 BASIC THEORETICAL KNOWLEDGE REQUIREMENTS

D5.1 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 Section J.

D5.2 Aeroplanes Turbine-Engines (B1.1)

Module 1	Mathematics
Module 2	Physics
Module 3	Electrical Fundamentals
Module 4	Electronic Fundamentals
Module 5	Digital Techniques/Electronic Instrument Systems
Module 6	Materials & Hardware
Module 7	Maintenance Practices
Module 8	Basic Aerodynamics
Module 9	Human Factors
Module 10	Aviation Legislation
Module 11	Aeroplanes Aerodynamics, Structures & Systems
Module 15	Gas Turbine Engines
Module 17	Propeller

D5.3 Aeroplanes Piston-Engines (B1.2)

Module 1	Mathematics
Module 2	Physics
Module 3	Electrical Fundamentals
Module 4	Electronic Fundamentals
Module 5*	Digital Techniques/Electronic Instrument Systems
Module 6	Materials & Hardware
Module 7	Maintenance Practices
Module 8	Basic Aerodynamics
Module 9	Human Factors
Module 10	Aviation Legislation
Module 11B	Aeroplanes Aerodynamics, Structures & Systems
Module 16	Piston Engine
Module 17	Propeller

D5.4 Helicopter Turbine-Engines (B1.3)

Module 1	Mathematics
Module 2	Physics
Module 3	Electrical Fundamentals
Module 4	Electronic Fundamentals
Module 5	Digital Techniques/Electronic Instrument Systems
Module 6	Materials & Hardware
Module 7	Maintenance Practices
Module 8	Basic Aerodynamics
Module 9	Human Factors
Module 10	Aviation Legislation
Module 12	Helicopter Aerodynamics, Structures & Systems
Module 15	Gas Turbine Engine

D5.5 Helicopter Piston Engines (B1.4)

Module 1	Mathematics
Module 2	Physics
Module 3	Electrical Fundamentals
Module 4	Electronic Fundamentals
Module 5*	Digital Techniques/Electronic Instrument Systems
Module 6	Materials & Hardware
Module 7	Maintenance Practices
Module 8	Basic Aerodynamics
Module 9	Human Factors
Module 10	Aviation Legislation
Module 12	Helicopter Aerodynamics, Structures & Systems
Module 16	Piston Engine

D5.6 Essay Paper

In addition to the multi-choice question paper relating to appropriate level and modules required, an essay paper must be taken. The essay paper will comprise questions drawn from the syllabus subjects covering Maintenance Practices (Module 7), Human Factors (Module 9) and Aviation Legislation (Module 10).

D6 CREDITS FROM THEORETICAL KNOWLEDGE REQUIREMENTS

D6.1 General

Partial examination exemptions may be given to applicants who wish to extend their current licence to include a further basic Category/sub-Category.

D6.2 Extension of a Licence to include another Category

The modular syllabus of MCAR-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 most common cases of category conversion are detailed in Section G.

The CAD will conduct all conversion part module examinations (unless approval has been granted by the Authority for a MCAR-147Organisation to conduct the examinations). Applications should be made in the normal way. Further general information on examinations can be found in Section J.

D7 MAKING YOUR APPLICATION

Refer to Appendix A to Section A for information on form numbers.

CAD Form 19 should be used in respect of all Category B initial issue applications. Current forms may be downloaded from our web site (www.aviainfo.gov.mv). A new guidance document that is linked to the application form will provide easy to follow guidance on the basic licensing requirements, which parts of the application to complete and what may be required in support of your application. Refer to Section A, Appendix B.

D7.1 Supporting Documents

Course Completion Certificates – issued by CAD approved organisations or EASA Part-147 organisations

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. The CAD will not contact the applicant for clarification of details on application.

D8 IF YOUR APPLICATION FAILS

Please refer to Section B17.

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SECTION E

CATEGORY B2 LICENCE

E1 THE CATEGORY B2 LICENCE

The B2 licence is avionic based and permits the holder to issue certificates of release to service, following line maintenance on avionic systems. A Category B2 licence holder also has a role in base maintenance in supporting the Category C certifier who is the final CRS signatory.

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 MCAR-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 Section C and Section G).

E2 MCAR-147 APPROVED TRAINING

A course of training can be undertaken under the auspices of a MCAR-147 approved basic training school. The course will consist of a minimum of 2400 hours instruction. The purpose of the course is to teach the individual the basic underpinning theoretical knowledge required of aircraft and the related systems required of the category B2 role and to provide basic skills and maintenance practices training to establish basic practical competence. The course includes theory exams and practical skills assessments as part of the training and qualification philosophy.

The approved course must be followed by a minimum of 2 year's practical maintenance experience to consolidate the training received.

For information on MCAR-147 approved organisations refer to Section K.

E3 EXPERIENCE REQUIREMENTS

E3.1 General

An applicant for a category B2 licence must have completed a prescribed period of aircraft maintenance experience. This experience is to be relevant to the licence category sought and to the maintenance experience of operating aircraft in avionic and electrical systems.

E3.2 'Recent Practical Maintenance Experience'

All applicants must have gained at least one year's experience on aircraft typical of the category or sub-category applied for. 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.

E3.3 Self Starter and Other Experienced Applicants

Category B2 applicants who have not attended a MCAR-147approved course of training should have at least 5 years practical maintenance experience on operating aircraft. Experienced engineers, such as Skilled Workers, Armed Forces, Coast Guards or Police, may be eligible for a reduction in experience required (refer to sub-section E4).

E4 REDUCTION IN EXPERIENCE REQUIREMENTS

A reduction in the 5 years experience requirement may be considered for certain applicants who fall into either category below.

There are currently no standard assessment terms for these applications and therefore applicants are advised, before applying for licence issue, to ensure they meet the experience criteria in accordance with MCAR-66.30 and AMC 66.30 (a).

E4.1 'Skilled Worker'

A skilled worker is a person who has successfully completed a course of training, acceptable to the CAD, 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.

E4.2 Experience Required

3 years where the applicant has already qualified in another profession as above.

E4.3 'Other Experienced Applicants'

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

E4.4 Experience Required

B2 applicants must demonstrate 1 years experience in a civil maintenance environment appropriate to the category applied for, where the applicant can provide satisfactory evidence of working in one of the above disciplines.

E4.5 'Experience gained outside Maldivian approved organisations'

Aircraft maintenance engineers with experience working on operational civil aircraft gained outside Maldivian approved organisations, may claim that experience towards the grant of a MCAR-66 licence, providing that the experience is deemed acceptable by the CAD.

E4.6 Experience Required

Experience claimed towards a MCAR-66 licence must meet the standards of MCAR-145 and must be correctly authenticated in a manner acceptable to the CAD.

E5 BASIC THEORETICAL KNOWLEDGE REQUIREMENTS

E5.1 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.

Knowledge level requirements and general information relating to examination requirements and procedures can be found in Section J.

E5.2 B2 Avionic

Module 1	Mathematics
Module 2	Physics
Module 3	Electrical Fundamentals
Module 4	Electronic Fundamentals
Module 5	Digital Techniques/Electronic Instrument Systems
Module 6	Materials & Hardware
Module 7	Maintenance Practices
Module 8	Basic Aerodynamics
Module 9	Human Factors
Module 10	Aviation Legislation
Module 13	Aircraft Aerodynamics, Structures and Systems
Module 14	Propulsion

E5.3 Essay Paper

In addition to the multi-choice question paper relating to appropriate level and modules required, an essay paper must be taken. The essay paper will comprise questions drawn from the syllabus subjects covering Maintenance Practices (Module 7), Human Factors (Module 9) and Aviation Legislation (Module 10).

E6 CREDITS FROM THEORETICAL KNOWLEDGE REQUIREMENTS

E6.1 General

Partial examination exemptions may be given to applicants who wish to extend their current licence to include a further basic Category/sub-category.

E6.2 Extension of a Licence to include another Category

The modular syllabus of MCAR-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 most common cases of category conversion are detailed in Section G.

The CAD will conduct all conversion part module examinations (unless approval has been granted by the Authority for a MCAR-147 Organisation to conduct the examinations). Applications should be made in the normal way. Further general information on examinations can be found in Section J.

E7 MAKING YOUR APPLICATION

Note: Refer to Appendix A to Section A for information on form numbers.

CAD Form 19 should be used in respect of all Category B initial issue applications. Current forms may be downloaded from our web site (www.aviainfo.gov.mv). A guidance document that is linked to the application form will provide easy to follow guidance on the basic licensing requirements, which parts of the application to complete and what may be required in support of your application. Refer to Section A, Appendix B.

E7.1 Supporting Documents

Course Completion Certificates – issued by CAD approved organisations or EASA Part-147 organisations

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. The CAD will not contact the applicant for clarification of details on applications.

E8 IF YOUR APPLICATION FAILS

Please refer to Section B17.

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SECTION F

CATEGORY C LICENCE

F1 THE CATEGORY C LICENCE

The Category C licence permits the release of an aircraft to service in its entirety by a single certificate of release to service by one overall signatory, once all base maintenance work and checks have been completed in accordance with MCAR-145 The Category C licence certifier will act primarily in a maintenance management role controlling the progress of aircraft maintenance work. A Category C licence alone does not permit the holder to act as a B1 or B2 certifier.

F2 EXPERIENCE REQUIREMENTS

F2.1 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 via one of two available routes: either by experience gained through holding a Category B1 or B2 licence, or as a graduate entrant with a degree that is considered to be acceptable to the CAD.

F2.2 Large Aircraft

3 years experience exercising B1.1, B1.3 or B2 privileges on large aircraft or as MCAR-145 B1.1, B1.3 or B2 support staff, or a combination of both.

5 years experience exercising B1.2 or B1.4 privileges on large aircraft or as MCAR-145 B1.2 or B1.4 support staff, or a combination of both.

F2.3 Non Large Aircraft

3 years experience exercising B1 or B2 privileges on non- large aircraft or as MCAR-145 B1 or B2 support staff, or a combination of both.

F2.4 Graduate Route

A graduate holding a degree in Aeronautical Engineering, or a similar discipline that is considered by the CAD relevant to aircraft maintenance that has been accepted for this purpose by the CAD, must have at least 3 years experience in a civil aircraft maintenance environment including 6 months of observation of base maintenance tasks. There are currently no standard assessment terms for these applications and therefore applicants are advised, before applying for licence issue, to ensure they meet the experience criteria in accordance with MCAR-66.30 and related AMC. A person qualifying for a Category C licence via this route will not be entitled to a Category B1 or B2 licence unless the requirements for those Categories are also met.

Note: The CAD would need to conduct a detailed assessment of the course, which would require the active co-operation of the university concerned. Degrees issued will not be accepted or recognised for Maldivian licence issue if the standards and basis upon which such degrees were issued cannot be ratified by the CAD.

F3 BASIC THEORETICAL KNOWLEDGE REQUIREMENTS

F3.1 General

Basic knowledge levels for each category licence have been allocated relating to the complexity of certifications appropriate to the particular licence. Category C certifying staff with a mechanical background should meet the Category B1 basic knowledge levels. Category C certifying staff with an avionic background should meet the category B2 basic knowledge levels.

Refer to Section D for Category B1 Line Maintenance Certifying Technician (Mechanical), or Section E for Category B2 Line Maintenance Certifying Technical
(Avionic), as appropriate.

Applicants following the Graduate route for direct issue of Category C must still pass either the Category B1 or B2 full examinations unless the degree course qualifies for the standard exemptions as listed in section F4, or exemptions have been agreed as a result of the assessment of the particular degree course.

Knowledge level requirements and general information relating to examination requirements and procedures can be found in Section J.

F4 CREDITS FROM THEORETICAL KNOWLEDGE REQUIREMENTS

F4.1 General

Partial examination exemptions may be given to applicants who wish to extend their current licence categories to include further maintenance certification privileges (refer to Section G).

F5 MAKING YOUR APPLICATION

Note: Refer to Appendix A to Section A for information on form numbers.

CAD Form 19 should be used in respect of all Category C initial issue applications. Current forms may be downloaded from our web site (www.aviainfo.gov.mv). A guidance document that is linked to the application form will provide easy to follow guidance on the basic licensing requirements, which parts of the application to complete and what may be required in support of your application. Refer to Section A, Appendix B.

F5.1 Supporting Documents

Graduates – documentary evidence of satisfactory course completion.

Note 1: Courses will have already been assessed by the CAD and recognised in accordance with MCAR-66.30 para 5.

Course Completion Certificates – issued by CAD approved organisations or EASA Part-147 organisations

Logbook – confirming experience.

Note 2: Having clear concise supporting data will enable us to issue licences more effectively and with less risk of errors or rejections. The CAD will not contact the applicant for clarification of details on application.

F6 IF YOUR APPLICATION FAILS

Please refer to Section B17

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SECTION G

EXTENSION OF LICENSE PRIVILEDGES TO INCLUDE ANOTHER CATEGORY

G1 INTRODUCTION

MCAR-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.

G2 EXAMINATION REQUIREMENTS

The part-module examinations required in order to convert to a different category or sub-category licence have been tailored to suit the most common cases and therefore may only be conducted by the CAD, unless approval is given for a Part-147 Organisation to conduct the examinations. Applications to take these conversion examinations should be made in the same way as for initial application (refer to Section J). The application, when received, will be assessed by the CAD and the applicable conversion modules and part-modules allocated as required. (Refer to Appendix A to this Section for a guide to which modules/part-modules are required).

Applicants for category conversion, that fall outside the common cases detailed in the relevant appendix should apply in writing to CAD for confirmation of which modules and/or part-modules are required.

G3 EXPERIENCE REQUIREMENTS

When applying for an additional licence category, it is only necessary to provide information on duration of experience relating to whichever category you are applying for. The table below provides information on the minimum experience required for each application.

To From	**A1**	**A2**	**A3**	**A4**	**B1.1**	**B1.2**	**B1.3**	**B1.4**	**B2**
A1		6 mths	6 mths	6 mths	2 yrs	6 mths	2 yrs	1 yr	2 yrs
A2	6 mths		6 mths	6 mths	2 yrs	6 mths	2 yrs	1 yr	2 yrs
A3	6 mths	6 mths		6 mths	2 yrs	1 yr	2 yrs	6 mths	2 yrs
A4	6 mths	6 mths	6 mths		2 yrs	1 yr	2 yrs	6 mths	2 yrs
B1.1	None	6 mths	6 mths	6 mths		6 mths	6 mths	6 mths	1 yr
B1.2	6 mths	None	6 mths	6 mths	2 yrs		2 yrs	6 mths	2 yrs
B1.3	6 mths	6 mths	None	6 mths	6 mths	6 mths		6 mths	1 yr
B1.4	6 mths	6 mths	6 mths	None	2 yrs	6 mths	2 yrs		2 yrs
B2	6 mths	6 mths	6 mths	6 mths	1 yr	1 yr	1 yr	1 yr	

APPENDICES TO SECTION G

- **Appendix A** **Common Cases of Extension to Licence**

- **Table 1** **– B2 to include A**
- **Table 2** **– B1 to include B2**
- **Table 3** **– B2 to include B1**
- **Table 4** **– A1 to include B1 or B2**
- **Table 5** **– A1 to include B**
- **Table 6** **– A1 to include B2**

APPENDIX A COMMON CASES OF EXTENSION TO LICENSES

Extension of B2 to include Mechanical Category A

Note 1: Table 1 is applicable only to full B2 AML holders or to B2 holders covered by the two variations shown in the table.

Note 2: Module 7 is common to all Category A sub-categories. Modules 11 to 17 must be taken as shown according to the sub-category required.

Table 1

Category/Limitation Held	**Category required**	**Modules or part modules required**	**No of Questions**
Full B2 or B2 with limitation 3 (excluding autopilot systems on aeroplanes) or 4 (excluding autopilot systems on helicopters)	Any Category A	Mod 7.8 to 7.13 all, 7.19 b	35
Full B2 or B2 with limitation 4 (excluding autopilot systems on helicopters)	A1, A2	Mod 11.2 to 11.4 all, 11.7 all, 11.8 all, 11.10 all to 11.13 all, 11.15 all to 11.17 all.	70
Full B2 or B2 with limitation 3 (excluding autopilot systems on aeroplanes)	A3, A4	Mod 12.1 to 12.6 all, 12.9 all to 12.14 all, 12.16 all.	70
Full B2 or B2 with limitation 3 (excluding autopilot systems on aeroplanes) or limitation 4 (excluding autopilot systems on helicopters)	A1, A3	15 All	60
Full B2 or B2 with limitation 3 (excluding autopilot systems on aeroplanes) or limitation 4 (excluding autopilot systems on helicopters)	A2, A4	16 All	50
Full B2 or B2 with limitation 4 (excluding autopilot system on helicopters)	A1, A2	17 All	20

e.g. Full B2 to Cat A1 Modules required:
7.8 - 7.13 and 7.19b.
11.2 - 11.4, 11.7, 11.8, 11.10 - 11.13, 11.15 - 11.17
15
17

Extension of Category B1 to include Category B2

Note 1: Table 2 normally applies to full Category B1 AML holders. If the licence holder has a limitation which excludes only Avionic LRUs, the full B2 level Module 5 examination will be set instead of the Module 5 conversion examination shown below. If successfully passed, this module will qualify the holder for removal, on application, of the B1 Avionic LRU limitation.

Table 2

Category Held	Module	Modules or part modules required	No of Questions
B1-1	4	Module 4.1.1b all, 4.1.2 all, 4.1.3b all, 4.2 all, 4.3b all.	20
	5	Module 5.1 to 5.3 all, 5.6b all, 5.7 to 5.10 all, Module 7.4 all.	40
	13	Module 13.1c all, 13.3 & 13.4 all, 13.6 all, 13.8 all.	100
B1-2	4	Module 4.1.1b all, 4.1.2 all 4.1.3b all, 4.2 all, 4.3b all.	20
	5	Module 5.1 to 5.3 all, 5.6b all, 5.7 to 5.10 all, Module 7.4 all.	40
	13	Module 13.1c all, 13.3 & 13.4 all, 13.6 all, 13.8 all.	100
B1-3	4	Module 4.1.1b all, 4.1.2 all 4.1.3b all, 4.2 all, 4.3b all.	20
	5	Module 5.1 to 5.3 all, 5.6b all, 5.7 to 5.10 all, Module 7.4 all.	40
	13	Module 13.1 all, 13.3 & 13.4 all, 13.6 to 13.8 all.	100
B1-4	4	Module 4.1.1b all, 4.1.2 all 4.1.3b all, 4.2 all, 4.3b all.	20
	5	Module 5.1 to 5.3 all, 5.6b all, 5.7 to 5.10 all, Module 7.4 all.	40
	13	Module 13.1 all, 13.3 & 13.4 all, 13.6 all to 13.8 all.	100

Extension of Category B2 to include Category B1

Note: Table 3 applies to full Category B2 AML holders only. Category B2 licence holders with any limitations must remove those limitations first by taking the appropriate conversion examinations or can qualify for B1 by following the conventional route and be examined on the complete modules required for B1.

Table 3

To Category	Module	Modules or part modules required	No of Questions
B1-1	2	Module 2.2.1, 2.2.2, 2.2.3, 2.2.4 b	18
	6	Module 6.3.b all, 6.4 b all, 6.5.4 all, 6.6.b all, 6.7 all, 6.10 all.	20
	7	Module 7.6 all, 7.8 all, 7.9 all to 7.15 all, 7.16 b all, 7.18 b & c all, 7.19 b all.	40
	11	Module 11.1 all to 11.4 all, 11.7 to 11.13 all, 11.15 to 11.17 all.	90
	15	Module 15.1 all to 15.13 all, 15.15 all to 15.22 all.	70
	17	Module 17 all.	30
B1-2	2	Module 2.2.1, 2.2.2, 2.2.3, 2.2.4 b	18
	6	Module 6.3.b all, 6.4 b all, 6.5.4 all, 6.6.b all, 6.7 all, 6.10 all.	20
	7	Module 7.6 all, 7.8 all, 7.9 all to 7.15 all, 7.16 b all, 7.18 b & c all, 7.19 b all.	40
	11	Module 11.1 all to 11.4 all, 11.7 to 11.13 all, 11.15 to 11.17 all.	90
	16	Module 16.1 to 16.9 all, 16.11 all to 16.13 all.	55
	17	Module 17 all.	30
B1-3	2	Module 2.2.1, 2.2.2, 2.2.3, 2.2.4 b	18
	6	Module 6.3.b all, 6.4 b all, 6.5.4 all, 6.6.b all, 6.7 all, 6.10 all.	20
	7	Module 7.6 all, 7.8 all, 7.9 all to 7.15 all, 7.16 b all, 7.18 b & c all, 7.19 b all.	40
	12	Module 12.1 all to 12.6 all, 12.9 all, to 12.14 all, 12.16 all.	80
	15	Module 15.1 all to 15.13 all, 15.15 all to 15.22 all.	70
B1-4	2	Module 2.2.1, 2.2.2, 2.2.3, 2.2.4 b	18
	6	Module 6.3.b all, 6.4 b all, 6.5.4 all, 6.6.b all, 6.7 all, 6.10 all.	20
	7	Module 7.6 all, 7.8 all, 7.9 all to 7.15 all, 7.16 b all, 7.18 b & c all, 7.19 b all.	40
	12	Module 12.1 all to 12.6 all, 12.9 all to 12.14 all, 12.16 all.	80
	16	Module 16.1 all to 16.9 all, 16.11 all to 16.13 all.	55

Extension of Category A1 to include Category B1 or B2

- Applicants should check any MCAR-147/EASA PART-147 Certificates of Recognition or Examination which they may hold to determine the level at which they hold examination passes.

- If applicants hold Category A other than Cat A1, applicable module examination changes will apply.

Table 4 Category A1 to B1.1

Module	Module or part module required	No of Questions
1	Full B1 examination	30
2	Full B1 examination	50
3	Full B1 examination	50
4	Full B1 examination	20
5	Full B1 examination	40
6	Full B1 examination	70
7	7.4 to 7.16, 7.18 & 7.20	60
8	Full B1 examination	20
10	10.5 & 10.7	20
11	Full B1 examination	130
15	Full B1 examination	90
17	Full B1 examination	30

Table 5 Category A1 to Other Mechanical Category B

	Differences to Table 4	Module or part module required	No of Questions
B1-2	M16 in place of M15	Full B1 examination	70
B1-3	M12 in place of M11	Full B1 examination	115
B1-4	M12 in place of M11 M16 in place of M15	Full B1 examination	115 70

Table 6 Category A1 to Avionic B2

Module	Module or part module required	No of Questions
1	Full B2 examination	30
2	Full B2 examination	50
3	Full B1/2 examination	50
4	Full B2 examination	40
5	Full B2 examination	70
6	Full B2 examination	60
7	7.4, 7.5, 7.7, 7.15a, 7.16a, 7.18c & e, 7.20	30
8	Full B1/2 examination	20
10	10.5 & 10.7	20
13	Full B2 examination	130
14	Full B2 examination	25

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SECTION H

TYPE RATINGS

H1 INTRODUCTION

Holders of MCAR-66 Aircraft Maintenance Licences 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 MCAR-145 or MAR-M maintenance organisation can issue a certification authorisation to a MCAR-66 licence holder in categories B1 and B2 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.

H2 AIRCRAFT TYPE RATINGS & GROUP RATINGS

The CAD issue type ratings and group ratings in accordance with MCAR-66.

H2.1 Type Ratings

Type Ratings are issued in accordance with MCAR-66, Appendix III. The type rating list can be found on the CAD web site.

Individual type ratings will be granted following completion of appropriate training, examination and experience requirements.

H2.2 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 414	=	Cessna – Aeroplane single piston engine – metal structure

H2.3 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 types representative of the group is defined - below.

B1 – the aircraft type should include 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 should include 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').

H3 MCAR-147 APPROVED TYPE TRAINING

A list of MCAR-147 Approved Type Training Organisations can be found on our web site; however, prospective users of training should check the status of the courses with the organisation concerned.

H3.1 Category A

In respect of the Category A licence, authorisations will be granted following completion of the relevant category A task training carried out by the appropriately approved organisation. The training will include practical hands-on training and theoretical training appropriate for each task authorised. Specific training on each aircraft type will be required reflecting the authorised task(s). A list of Category A minor scheduled line maintenance tasks can be found in Appendix A to this Section.

H3.2 Category B1 and B2

MCAR-147 training should include theoretical and practical elements in relation to the licence privileges. Theoretical and practical training must comply with MCAR-66, Appendix III. This training coupled with relevant type experience is a prerequisite for licence type endorsement and forms the basis for a MCAR-145 Authorisation to be issued.

H3.3 Category C

Type training for Category C must comply with MCAR-66, Appendix III. Category C applicants who have qualified by holding an academic degree must take the first aircraft type theoretical training at Category B1 or B2 level. Practical training is not required.

H4 NON MCAR-147 DIRECT COURSE APPROVALS

MCAR-66 allows for direct approval of a type course towards the grant of a type rating without having MCAR-147 approval. However, the course criteria must be to the same standards as MCAR-147. Applicants applying under a direct course approval must ensure that the CAD has granted approval to the relevant Operator, Training or Maintenance Organisation, prior to embarking on the course, as courses will not be retrospectively approved. Further information on approved training maintenance organisations can be found in Section K.

H5 RESERVED

H6 AIRCRAFT TYPE TRAINING

Aircraft type training may be sub-divided into airframe, power plant or electrical/avionic systems and the organisation may be approved to conduct all or only one of the sub-sections above.

Airframe type training means type training including all relevant aircraft structure and systems, excluding the bare engine.

Power plant type training means type training on the bare engine, including the build-up to a quick engine change unit.
Note: Where a split course is used one element of the two courses must contain the engine/airframe interface.

Avionic systems type training means type training on avionics systems.

H7 AIRCRAFT TYPE TRAINING AND EXAMINATION STANDARD

H7.1 Category A

Satisfactory completion of training will be determined by an approved procedure laid out in the organisation's exposition and in accordance with Part-147, demonstrated by an examination and/or by a workplace assessment, carried out by either an approved MCAR-145 organisation or a MCAR-147 training organisation. The practical assessment will determine a person's competence to perform task(s). The examiner will provide a written report to explain whether a candidate has passed or failed.

H7.2 Category B1, B2 and C

The completion of aircraft type training will be demonstrated by a multi-choice written examination carried out by a MCAR-147 organisation.

Note: Appendix B gives guidance regarding training standards required.

H8 AIRCRAFT TYPE RATING EXPERIENCE REQUIREMENT

MCAR-66 requires that a satisfactory amount of experience is required for an aircraft rating, in addition to the training. As a guide, 4 months is considered to be acceptable although the experience required will largely depend on the licence(s) and rating(s) already held. Where a similar aircraft type is held to that which is being applied for, experience can be reduced however, the experience should not be less than two weeks.

For each application, the CAD will need to satisfy itself that the practical training is of sufficient duration before adding a type rating.

H8.1 Acceptable Type Rating Experience

There are three types of experience that are deemed to be acceptable, as detailed below.

• Experience gained during an approved MCAR-147 training course. This experience should be detailed in logbook format and supported by the appropriate MCAR-147 certificate.

• Experience gained in an approved MCAR-145 maintenance organisation (OJT - On Job Training). Again this experience should be detailed in logbook format, however, worksheets that are certified by an Assessor and cross-referred to on the CAD Form 19 will be accepted.

• Any experience gained in an organisation that has been officially accepted by the Civil Aviation Department. This experience must again be detailed in logbook format or worksheets that are suitably certified.

Note: Appendix C provides guidance regarding practical experience requirements for type addition.

H9 TYPE RATING LIMITATIONS & REMOVAL

Where limitations are held on a basic licence, they will automatically be applied to the type ratings contained within that licence. In all cases any limitations must first be lifted from the basic licence before being lifted from a type rating or ratings. However, both can be removed at the same time. Application must be made in respect of both the basic licence and the type rating on form CAD Form 19.

H9.1 Requirements for Removal of Limitation(s) from Type Rating

A MCAR-147 type training course is required covering the areas to which the limitation(s) apply. Only full courses are approved under MCAR-147, however the applicant will only be required to attend the relevant parts of the course, according to the limitation (i.e. a licence holder with limitation 10 (Excluding Airframe) will only be required to attend this part of the course)).The experience requirement is the same as for an additional type rating. (Refer to Section H4).

H10 MAKING YOUR APPLICATION

CAD Form 19 should be used in respect of all type rating applications. Current forms may be downloaded from our web site (www.aviainfo.gov.mv). A guidance document that is linked to the application form will provide easy to follow guidance on the licensing requirements, which parts of the application to complete and what may be required in support of your application. Refer to Section A, Appendix B.

H10.1 Supporting Documents

Course Completion Certificates – covering both theoretical and practical elements, issued by CAD approved organisations or EASA Part-145/147 organisations

Logbook – containing work tasks. Details appropriate to the application being made, clearly identified and validated by an authorised signatory.

Note: Having clear concise supporting data will enable us to issue licences more effectively and with less

risk of errors or rejections. This supporting documentation may be referred to on Application CAD Form 19.

H11 IF YOUR APPLICATION FAILS

Please refer to Section B17.

APPENDICES TO SECTION H

- **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 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.

Training will be completed before the appropriate tasks are permitted to be carried out by the Category A licence holder.

Replacement of wheel assemblies.

Replacement of wheel brake units.

Replacement of emergency equipment.

Replacement of ovens, boilers and beverage makers.

Replacement of internal and external lights, filaments and flash tubes.

Replacement of windscreen wiper blades.

Replacement of passenger and cabin crew seats, seat belts and harness.

Closing of cowlings and refitment of quick access inspection panels.

Replacement of toilet system components but excluding gate valves.
Simple repairs and replacement of internal compartment doors and placards but excluding doors forming part of a pressure structure.

Simple repairs and replacement of overhead storage compartment doors and cabin furnishing items.

Replacement of static wicks.

Replacement of aircraft main and APU aircraft batteries.

Replacement of in-flight entertainment system components but excluding public address.

Routine lubrication and replenishment of all system fluids and gases.

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 the CAD as a simple task.

Replacement of any other components as agreed by the CAD for a particular aircraft type only where it is agreed that the task is simple.

Note: This list will be updated in accordance with MCAR-145.30(g).

APPENDIX B TYPE TRAINING AND EXAMINATION STANDARD

1. Type training levels

The three levels listed below define the objectives that a particular level of training is intended to achieve.

Level 1 General Familiarisation

1. A brief overview of the airframe, systems and powerplants as outlined in the Systems description Section of the Aircraft Maintenance Manual.

2. Course objectives: Upon completion of the course, the student will be able to identify safety precautions related to the airframe, its systems and powerplant

3. Identify maintenance practices important to the airframe, its systems and powerplant

4. Define the general layout of the aircraft's major systems

5. Define the general layout and characteristics of the powerplant

6. Identify special tooling and test equipment used with the aircraft

Level 2 Ramp and transit

Basic system overview of controls, indicators, principal components including their location and purpose, servicing and minor troubleshooting.

Course objectives: In addition to the information contained in the Level 1 General Familiarisation course, at the completion of this Level 2 Ramp and Transit training, the student will be able to:

1. Recall the safety precautions to be observed when working on or near the aircraft, power plant and systems.

2. Demonstrate knowledge of the main ramp and transit (through-flight) activities of the following:

   (a) Doors, windows and hatches.
   (b) Electrical power supplies.
   (c) Fuel.
   (d) Auxiliary power unit.
   (e) Powerplant.
   (f) Fire protection.
   (g) Environmental Control Systems.
   (h) Hydraulic power.
   (i) Landing gear.
   (j) Flight controls.
   (k) Water/waste.
   (l) Oxygen.
   (m) Flight and service interphone.
   (n) Avionics.
   (o) Cabin equipment/furnishings.

3. Describe systems and aircraft handling particularly access, power availability and sources.

4. Identify the locations of the principal components.

5. Explain the normal functioning of each major system, including terminology and nomenclature.

6. Perform the procedures for ramp and transit servicing associated with the aircraft for the following systems: Fuel, Power Plants, Hydraulics, Landing Gear, Water/Waste, Oxygen.

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

8. Identify and use appropriate documentation.

9. Locate those procedures for replacement of components for ramp and transit activities identified in objective 2.

Level 3 Line and Base Maintenance Training

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 Line and Base Maintenance training, the student will be able to:

(a) Perform system, engine, component and functional checks as specified in the maintenance manual.

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

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

2. Type training standard

Type training must include a theoretical and practical element.

2.1. Theoretical element

As a minimum the elements in the Syllabus below that are specific to the aircraft type must be covered. Additional elements introduced due to technological changes shall also be included.

Training levels are those levels defined in paragraph 1 above.

After the first type course for category C certifying staff all subsequent courses need only be to level 1.

Introduction Module Title
General Aircraft(dimensions/weights MTOW etc)
Time limits/maintenance checks
Levelling and weighing
Towing and taxiing
Parking/mooring Servicing
Standard practices-only type particular
B2 module-safety items/mechanical interface
B1 module-safety items/avionics interface

	Aeroplanes turbine		Aeroplanes piston		Helicopters turbine		Helicopters piston		Avionics
	B1	C	B1	C	B1	C	B1	C	B2
Blade tracking and vibration analysis	-	-	-	-	3	1	3	1	-
Transmissions	-	-	-	-	3	1	3	1	-
Airframe structure	-	-	-	-	3	1	3	1	1
Main rotor	-	-	-	-	3	1	3	1	-
Tail rotor/rotor drive	-	-	-	-	3	1	3	1	-
Rotor flight control	-	-	-	-	3	1	3	1	-
Airframe Structure	3	1	3	1	-	-	-	-	1
Fuselage Doors	3	1	3	1	-	-	-	-	-
Fuselage	3	1	3	1	-	-	-	-	-
Fuselage Windows	3	1	3	1	-	-	-	-	-
Wings	3	1	3	1	-	-	-	-	-

Stabilisers	3	1	3	1	-	-	-	-	-
Flight Control Surfaces	3	1	3	1	-	-	-	-	-
Nacelles/Pylons	3	1	3	1	-	-	-	-	-
Zonal & Station Identification Systems	1	1	1	1	1	1	1	1	1
Air Supply	3	1	3	1	3	1	3	1	1
Air Conditioning	3	1	3	1	3	1	3	1	1
Pressurisation	3	1	-	-	-	-	-	-	1
Safety & Warning Devices	3	1	-	-	-	-	-	-	1
Instrument Systems	3	1	3	1	3	1	3	1	3
Avionics Systems	2	1	2	1	2	1	2	1	3
Electrical Power	3	1	3	1	3	1	3	1	3
Equipment & Furnishings	3	1	3	1	3	1	3	1	-
Electronic Emergency Equip. Requir. & Cabin Entertainment Equipment	-	1	-	-	-	-	-	-	3
Fire Protection	3	1	3	1	3	1	3	1	1
Flight Controls	3	1	3	1	3	1	3	1	2
Sys. Operation: Electrical/Fly-by-Wire	3	1	-	-	-	-	-	-	3
Fuel Systems	3	1	3	1	3	1	3	1	1
Hydraulic Power	3	1	3	1	3	1	3	1	1
Ice & Rain Protection	3	1	3	1	3	1	3	1	1
Landing Gear	3	1	3	1	3	1	3	1	1
Lights	3	1	3	1	3	1	3	1	3
Oxygen	3	1	3	1	-	-	-	-	1
Pneumatic/Vacuum	3	1	3	1	3	1	3	1	1
Water/Waste	3	1	3	1	-	-	-	-	1
On-board Maintenance Systems	3	1	3	1	-	-	-	-	3
Turbine Engines:									
Constructional arrangement and operation	-	-	-	-	-	-	-	-	1
Engine Performance	3	1	-	-	3	1	-	-	1
Inlet	3	1	-	-	3	1	-	-	-
Compressors	3	1	-	-	3	1	-	-	-
Combustion Section	3	1	-	-	3	1	-	-	-
Turbine Section	3	1	-	-	3	1	-	-	-
Exhaust	3	1	-	-	3	1	-	-	-
Bearing and Seals	3	1	-	-	3	1	-	-	-
Lubricant and Fuels	3	1	-	-	3	1	-	-	-
Lubrication Systems	3	1	-	-	3	1	-	-	-
Fuel Systems	3	1	-	-	3	1	-	-	1
Engine controls	3	1	-	-	3	1	-	-	1
FADEC	2	1	-	-	2	1	-	-	3
Air Systems	3	1	-	-	3	1	-	-	-
Starting Ignition Systems	3	1	-	-	3	1	-	-	-
Engine Indicating System	3	1	-	-	3	1	-	-	3
Power Augmentation Systems	3	1	-	-	-	-	-	-	-
Turbo-prop Engines	3	1	-	-	-	-	-	-	-
Turbo-shaft Engines	-	-	-	-	3	1	-	-	-
Auxiliary Power Units (APUs)	3	1	-	-	-	-	-	-	1
Powerplant Installation	3	1	-	-	3	1	-	-	-
Fire Protection Systems	3	1	-	-	3	1	-	-	1
Engine Monitoring and Ground Operation	3	1	-	-	3	1	-	-	-
Engine Storage and Preservation	3	1	-	-	3	1	-	-	-

Piston Engines:									
Engine Performance	-	-	3	1	-	-	3	1	1
Engine Construction	-	-	3	1	-	-	3	1	1
Engine Fuel Systems	-	-	3	1	-	-	3	1	1
Carburettors	-	-	3	1	-	-	3	1	-
Fuel injection systems	-	-	3	1	-	-	3	1	-
Engine controls	3	1	-	-	3	1	-	-	1
FADEC	-	-	2	1	-	-	2	1	3
Starting and Ignition Systems	-	-	3	1	-	-	3	1	-
Induction, Exhaust and Cooling Systems	-	-	3	1	-	-	3	1	-
Supercharging/ Turbocharging	-	-	3	1	-	-	3	1	-
Lubricants and Fuels	-	-	3	1	-	-	3	1	-
Lubrication Systems	-	-	3	1	-	-	3	1	-
Engine Indication Systems	-	-	3	1	-	-	3	1	3
Powerplant Installation	-	-	3	1	-	-	3	1	-
Engine Monitoring and Ground Operation	-	-	3	1	-	-	3	1	-
Engine Storage and Preservation	-	-	3	1	-	-	3	1	-
Propellers:									
Propeller — General	3	1	3	1	-	-	-	-	1
Propeller Construction	3	1	3	1	-	-	-	-	-
Propeller Pitch Control	3	1	3	1	-	-	-	-	-
Propeller Synchronising	3	1	3	1	-	-	-	-	-
Propeller Electronic control	2	1	2	1	-	-	-	-	3
Propeller Ice Protection	3	1	3	1	-	-	-	-	-
Propeller Maintenance	3	1	3	1	-	-	-	-	-

2.2. Practical element

The practical training element must consist of the performance of representative maintenance tasks and their assessment, in order to meet the following objectives:

(a) 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.

(b) Correctly use all technical literature and documentation for the aircraft.

(c) 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.

3. Type training examination standard

Where aircraft type training is required, the examination must be written and comply with the following:

1. Format of the examination is of the multiple-choice type. Each multiple-choice question must have three alternative answers of which only one must be the correct answer. The time for answering is based upon a nominal average of 120 seconds per level 3 question and 75 seconds per level 1 or 2 question.

2. The examination must be of the 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.

3. The number of questions must be at least one question per hour of instruction subject to a minimum of two questions per Syllabus subject. The CAD will assess number and level of questions on a sampling basis when approving the course.

4. The examination pass mark is 75 %.

5. Penalty marking is not to be used to determine whether a candidate has passed.

6. 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.

4. Type examination standard

Where type training is not required, the examination must be oral, written or practical assessment based, or a combination thereof.

Oral examination questions must be open.

Written examination questions must be essay type or multiple-choice questions.

Practical assessment must determine a person's competence to perform a task.

Examination subjects must be on a sample of subjects drawn from paragraph 2 type training/examination syllabus, at the indicated level.

The examination must ensure that the following objectives are met:

(a) Properly discuss with confidence the aircraft and its systems.

(b) 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.

(c) Correctly use all technical literature and documentation for the aircraft.

(d) 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.

A written report must be made by the examiner to explain why the candidate has passed or failed.

APPENDIX C AIRCRAFT TYPE PRACTICAL EXPERIENCE LIST OF TASKS

Type/task training and ratings

For aircraft as defined in MCAR-66.45(h) type experience should cover an acceptable cross section of tasks. For the first aircraft type of each manufacturer group, at least 50% of the tasks, as applicable to the concerned aircraft type and licence category, should be performed. For the second aircraft type of each manufacturer group, this may be reduced to 30%. For subsequent aircraft types of each manufacturer group, this may be reduced to 20%.

Type experience should be demonstrated by the submission of records or logbook showing the tasks performed by the applicant as specified by the CAD.

Time limits/Maintenance checks

- 100 hour check (general aviation aircraft)
- "B" or "C" check (transport category aircraft)
- Review of records for compliance with airworthiness directives
- Review records for compliance with component life limits
- Procedure for inspection following heavy landing
- Procedure for inspection following lightning strike

Dimensions/Areas

- Locate component(s) by station number
- Perform symmetry check

Lifting and shoring

Assist in:
- Jack aircraft nose or tail wheel
- Jack complete aircraft
- Sling or trestle major component

Levelling/weighing

- Level aircraft
- Weigh aircraft
- Prepare weight and balance amendment
- Check aircraft against equipment list

Towing and taxiing

- Tow aircraft
- Be part of aircraft towing team

Parking and mooring

- Tie down aircraft
- Park, secure and cover aircraft
- Position aircraft in dock
- Secure rotor blades

Placards and markings

- Check aircraft for correct placards
- Check aircraft for correct markings

Servicing

- Refuel aircraft
- Defuel aircraft
- Check tyre pressures

- Check oil level
- Check hydraulic fluid level
- Check accumulator pressure
- Charge pneumatic system
- Grease aircraft
- Connect ground power
- Service toilet/water/system
- Perform pre-flight/daily check

Vibration and noise analysis

- Analyse helicopter vibration problem
- Analyse noise spectrum

Air conditioning

- Replace combustion heater
- Replace outflow valve
- Replace vapour cycle unit
- Replace air cycle unit
- Replace cabin blower
- Replace heat exchanger
- Replace pressurisation controller
- Clean outflow valves
- Check operation of air conditioning/heating system
- Check operation of pressurisation system
- Troubleshoot faulty system

Auto flight

- Install servos
- Rig bridle cables
- Replace controller
- Replace amplifier
- Check operation of auto-pilot
- Check operation of auto-throttle
- Check operation of yaw damper
- Check and adjust servo clutch
- Perform autopilot gain adjustments
- Perform mach trim functional check
- Troubleshoot faulty
- Check autoland system
- Check flight management systems
- Check stability augmentation system

Communications

- Replace VHF com unit
- Replace HF com unit
- Replace existing antenna
- Replace static discharge wicks
- Check operation of radios
- Perform antenna VSWR check
- Perform Selcal operational check
- Perform operational check of passenger address system
- Functionally check audio integrating system
- Repair co-axial cable
- Troubleshoot faulty system

Electrical Power

- Charge lead/acid battery

- Charge ni-cad battery
- Check battery capacity
- Deep-cycle ni-cad battery
- Replace generator/alternator
- Replace switches
- Replace circuit breakers
- Adjust voltage regulator
- Amend electrical load analysis report
- Repair/replace electrical feeder cable
- Troubleshoot faulty system

Equipment/Furnishings

- Replace carpets
- Replace crew seats
- Replace passenger seats
- Check inertia reels
- Check seats/belts for security
- Check emergency equipment
- Check ELT for compliance with regulations
- Repair toilet waste container
- Repair upholstery
- Change cabin configuration

Fire protection

- Check fire bottle contents
- Check operation of warning system
- Check cabin fire extinguisher contents
- Check lavatory smoke detector system
- Install new fire bottle
- Replace fire bottle squib
- Troubleshoot faulty system
- Inspect engine fire wire detection systems

Flight controls

- Replace horizontal stabiliser
- Replace elevator
- Replace aileron
- Replace rudder
- Replace trim tabs
- Install control cable and fittings
- Replace flaps
- Replace powered flying control unit
- Replace flat acuator
- Adjust trim tab
- Adjust control cable tension
- Check control range and sense of movement
- Check for correct assembly and locking
- Troubleshoot faulty system

Fuel

- Replace booster pump
- Replace fuel selector
- Replace fuel tank cells
- Check filters
- Flow check system
- Check calibration of fuel quantity gauges
- Check operation feed/selectors
- Troubleshoot faulty system

Hydraulics

- Replace engine driven pump
- Replace stand-by pump
- Replace accumulator
- Check operation of shut off valve
- Check filters
- Check indicating systems
- Perform functional checks
- Troubleshoot faulty system

Ice and rain protection

- Replace pump
- Replace timer
- Install wiper motor
- Check operation of systems
- Troubleshoot faulty system

Indicating/recording systems

- Replace flight data recorder
- Replace cockpit voice recorder
- Replace clock
- Replace master caution unit
- Replace FDR
- Perform FDR data retrieval
- Troubleshoot faulty system
- Implement ESDA procedures
- Inspect for HIRF requirements

Landing gear

- Build up wheel
- Replace main wheel
- Replace nose wheel
- Replace shimmy damper
- Rig nose wheel steering
- Replace shock strut seals
- Replace brake unit
- Replace brake control valve
- Bleed brakes
- Test anti skid unit
- Test gear retraction
- Change bungees
- Adjust micro switches
- Charge struts
- Troubleshoot faulty system
- Test outbrake system

Lights

- Repair/replace rotating beacon
- Repair/replace landing lights
- Repair/replace navigation lights
- Repair/replace interior lights
- Repair/replace emergency lighting system
- Perform emergency lighting system checks
- Troubleshoot faulty system

Navigation

- 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

Oxygen

- 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

Pneumatic systems

- Replace filter
- Replace compressor
- Recharge dessicator
- Adjust regulator
- Check for leaks
- Troubleshoot faulty system

Vacuum systems

- Replace vacuum pump
- Check/replace filters
- Adjust regulator
- Troubleshoot faulty system

Water/Waste

- Replace water pump
- Replace tap
- Replace toilet pump
- Troubleshoot faulty system

Central maintenance system

- Retrieve data from CMU
- Replace CMU
- Perform bite check
- Troubleshoot faulty system

Airborne auxiliary power

- Install APU
- Inspect hot section
- Troubleshoot faulty system

Structures

- Sheet metal repair
- Fibre glass repair
- Wooden repair
- Fabric repair
- Recover fabric control surface
- Treat corrosion
- Apply protective treatment

Doors

- Rig/adjust locking mechanism
- Adjust air stair system
- Check operation of emergency exits
- Test door warning system
- Troubleshoot faulty system

Windows

- Replace windshield
- Replace window
- Repair transparency

Wings

- Skin repair
- Recover fabric wing
- Replace tip
- Replace rib
- Check incidence/rig

Propeller

- 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

Main rotors

- Install rotor assembly
- Replace blades

- Replace damper assembly
- Check track
- Check static balance
- Check dynamic balance
- Troubleshoot

Rotor drive

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

Tail rotors

- Install rotor assembly
- Replace blades
- Troubleshoot

Tail rotor drive

- Replace bevel gearbox
- Replace universal joints
- Overhaul bevel gearbox
- Install drive assembly
- Check chip detectors

Rotorcraft flight controls

- 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

Power plant

- Build up ECU
- Replace engine
- Repair cooling baffles
- Repair cowling
- Adjust cowl flaps
- Repair faulty wiring
- Troubleshoot

Piston engines

- 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

Turbine engines

- Replace module
- Hot section inspection
- Engine ground run
- Establish reference power
- Trend monitoring/gas path analysis
- Troubleshoot

Fuel and control, piston

- Replace engine driven pump
- Adjust AMC
- Adjust ABC
- Install carburettor/injector
- Clean injector nozzles
- Replace primer line
- Check carburettor float setting
- Troubleshoot faulty system

Fuel and control, turbine

- Replace FCU
- Replace engine driven pump
- Clean/test fuel nozzles
- Clean/replace filters
- Adjust FCU
- Troubleshoot faulty system

Ignition systems, piston

- Change magneto
- Change ignition vibrator
- Change plugs
- Test plugs
- Check H.T. leads
- Install new leads
- Check timing
- Check system bonding
- Troubleshoot faulty system

Ignition systems, turbine

- Check glow plug/ignitors
- Check H.T. leads
- Check ignition unit
- Replace ignition unit
- Troubleshoot faulty system

Engine controls

- 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 sense of operation
- Adjust pedestal micro-switches

- Troubleshoot faulty system

Engine indicating

- Replace engine instrument(s)
- Replace oil temperature bulb
- Replace thermocouples
- Check calibration
- Troubleshoot faulty system

Exhaust, piston

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

Exhaust, turbine

- Change jet pipe
- Change shroud assembly
- Install trimmers

Oil

- 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

Starting

- Replace starter
- Replace start relay
- Replace start control valve
- Check cranking speed
- Troubleshoot faulty system

Turbines, piston engines

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

Engine water injection

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

Accessory gear boxes

- Replace gearbox
- Replace drive shaft
- Check chip detector

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SECTION I

MAR D02 AND SPECIALISED TASKS

I1 GENERAL INFORMATION

MAR-66 was issued on August 1, 2006 and became effective on January 1, 2007. MAR D02 was repealed on January 1, 2007. MAR-66 itself was replaced by MCAR-66 on July 15, 2007. However, existing MAR D02 licence holders can exercise the privileges of their licences for existing operators until the expiry of their licence. All MAR D02 licences will expire before January 1, 2009, the date at which MCAR-M and MCAR-145 becomes mandatory for all existing operators. CAD recommends that all MAR D02 holders apply for conversion to MCAR-66 licences at least six weeks before the expiry of their licences.

I1.1 Reserved

I1.2 MCAR-66 Introduction Timetable

An introduction timetable is provided at Appendix A to this Section, which provides information on cessation dates and compliance dates. Updates to this table will be made on our web site.

I2 CONVERSION OF MAR D02 LICENCE TO A MCAR-66 LICENCE

A quick reference to renewal requirements may be found in Appendix B to this Section.

I3 Air Safety Circular AW 15 Oral examinations

Air Safety Circular AW 15 (ASC AW15) was issued and became effective on December 05, 2007 and is valid until the end of December 2010. It gives guidance on obtaining a Maldivian Aircraft Maintenance Licence to those Maldivian students who have completed an abinitio training from a maintenance training organisation that has been inspected by CAD, but has not issued an approval certificate. The course completion certificate should be obtained prior to January 1, 2007 to be eligble for an oral exam as per ASC AW 15. Successful applicants with required experience will be issued a MCAR-66 licence with applicable limitations, depending on the applicants experience and training.

Any Applicant with course completion certificate, obtained after 1 January 2007, shall fully comply with MCAR-66. For further information refer to ASC AW15.

I4 SPECIALISED TASKS

MCAR-145 and MCAR-M should be referred whenever there is a question about performance of any maintenance. This guidance document (ELGD) provides guidance only on matters related to licencing. For example, whether someone requires a MCAR-66 licence for specialized tasks like NDT.

I4.1 Engine run-up and Taxiing

Engine run and taxi courses are not required in MCAR-66 type training, and hence not required to endorse a type in a MCAR-66 licence. However, AMC 145.70 (a) requires that the MCAR-145 organisation develops procedure for engine run-up and taxiing. Those procedures should indicate how the maintenance personnel will be qualified before performing such tasks. The qualification procedure should include an engine run-up and taxiing course or those qualifying can be trained by a person who already has engine run-up and taxiing authorisation in the MCAR-145 organisation.

I4.2 Non Destructive Testing Personnel

MCAR-66 licence is not a pre-requisite to get an NDT authorization in a MCAR-145 organisation. An unlicenced person can also have an NDT authorization. A good guide for the development of a procedure in MOE for the qualification of NDT personnel is, UK CAA CAP 747, GR No.23- *Personnel Certification for Non-Destructive Testing of Aircraft, Engines, Components and Materials*

Refer to MCAR-145.30 (f) and AMC 145.30 (f)

I5 THE FUTURE OF MAR D02 LICENCE

MAR D02 Issue 2 dated February 23, 2003 was based on Singapore Airworthiness Requirements – Section 7 (SAR Section 7) issue 4 dated July 2000.

All MAR D02 licenses shall be valid until it expires, after which a MCAR-66 license will be issued upon renewal. Any

limitations applicable will be imposed on the converted MCAR-66 license.

I6 CLASSIFICATION OF AIRCRAFT INTO THE VARIOUS GROUPS WITHIN MAR D02 LICENSE CATEGORIES

MAR D02 paragraph 8.2.2 defines the various groups within the MAR D02 license categories A, C, E, I & R. MAR D03 paragraph 2 prescribes the responsibilities of aircraft maintenance engineers and describe the privileges within each category. Therefore it is useful to give CAD's classification of all the aircraft types endorsed on the current MAR D02 license holders. The following lists the aircraft types currently on valid MAR D02 licenses:

1. Viking Air (De Havilland) DHC- 6 (PW PT6)
2. Bombardier DHC- 8-200 (PW120)
3. Dornier DO 228 (Allied TPE 331)

As all the aircraft above are turbo-propeller aircraft, they are classified into the following groups within the respective categories:

1. Category A – Group 4
2. Category C – Group 6
3. Category E – Group 2
4. Category I – Group 2

The above classification has been done with the consultation of Civil Aviation Authority of Singapore.

APPENDICES TO SECTION I

APPENDIX A INTROCUTION TIMETABLE

Date	Item	Reference
August 1, 2006	MAR-66 was issued	MAR-66
December 5, 2006	ASC AW 15 was issued and became effective. ASC AW 15 oral exams became possible for eligible candidates	ASC AW 15
December 7, 2006	MOU signed between Air Services Training, UK and CAD, Maldives to conduct MAR-66 exams in Maldives	MOU
January 1, 2007	MAR-66 became effective. Issue and conversion to MAR-66 licences started	MAR-66
January 1, 2007	MAR D02 issue 2 dated Feb 23, 2003 was repealed. Issue of MAR D02 licences ceased	MAR
July 8, 2007	MAR-66 exams available in Maldives. To be conducted by Sri Lankan Technical Training	
July 15, 2007	MAR-66/145/M/147 was replaced by MCAR-66/145/M/147	
January 1, 2009	All MAR D02 licences will be converted to MCAR-66 licences	
December 31, 2010	Last day of validity for ASC AW 15. ASC AW 15 oral exams withdrawn	ASC AW15

APPENDIX B QUICK REFERENCE RENEWAL REQUIREMENTS

LICENCE RENEWAL WITHIN VALIDITY OF LICENCE

RECOMMEND CONVERSION TO MCAR-66

• 6 months experience of maintenance on operational aircraft within the last 24 months at time of application.

• Paid the correct fee

LICENCE RENEWAL WITHIN 24 MONTHS EXPIRY OF LICENCE

RECOMMEND CONVERSION TO MCAR-66

• 6 months experience of maintenance on operational aircraft within the last 24 months at time of application.

• Paid the correct fee

LICENCE RENEWAL EXPIRED OVER 24 MONTHS BUT WITHIN 4 YEARS

• Must qualify for a MCAR-66 licence.

• 'Protected Rights' will apply based upon LWTR's held. The appropriate conversion examinations and experience requirements must be completed. MCAR-66 multiple-choice papers 9 (Human Factors) and 10 (Aviation Legislation) will need to be passed in addition to that above.

LICENCE RENEWAL EXPIRED OVER 4 YEARS

• Must qualify afresh under the full requirements of MCAR-66.

REQUIRED FORMS AND DOCUMENTS

• CAD Form 19 (for conversion) and appropriate supporting documentation.

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SECTION J

GENERAL EXAMINATION REQUIREMENTS AND PROCEDURES

J1 GENERAL INFORMATION

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

J2 MCAR-66 EXAMINATIONS

Although MCAR-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. MCAR-66 examinations are based on the MCAR-66 syllabus as set out in Appendix I to MCAR-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 however, MCAR-147 organisations may impose certain minima.

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

J2.1 Multi-Choice Paper

For each module being taken, a question paper including instructions is provided together with an answer sheet. Each question comprises an introductory statement (question stem) and three alternative answers designated (A), (B) and (C) printed below. Only one of these answers is totally correct; the remaining two answers are incorrect or only partially correct, being incomplete in some definite aspect.

J2.2 Essay Paper

Prior to licence issue essay examinations need to be passed in the following modules:

Module 7 - 2 questions Module 9 - 1 question Module 10 - 1 question

Essays can be sat singly or in groups.

For details of the subject modules and applicability please refer to the relevant Sections of this publication.

J3 WRITTEN EXAMINATION BOOKING PROCEDURE

In order to make a booking for an examination sitting, applicants are asked to follow the procedures below:-

- Candidates should apply in writing (either by post or fax) using the appropriate application forms which are available from CAD or on our website www.aviainfo.gov.mv. No bookings can be made by telephone and all bookings are made on a first come, first served basis.
- Examination fees must be sent with the application form. Bookings will not be made unless the correct fees have been received.
- Once a booking has been made, candidates will receive an examination booking confirmation by post/e-mail.
- The time between the closing date for applications will be given in the AME exam announcement but in any case will not be less than one month before examination sitting date. CAD will endeavour to send booking confirmations, venue details and examination timetables within reasonable time frame.

J4 EXAMINATION TIMETABLE

There is NO set timetable yet, but CAD anticipates one OR two examinations schedule per year conducted by MCAR-147 or EASA Part-147 approved training organisation, on behalf of CAD. Contact CAD for more information

J5 EXAMINATION VENUES

Reserved.

J6 CANCELLATION OR TRANSFER OF DATE/VENUE

Examination bookings cannot be amended within one month prior to the examination. Cancellations will only be

accepted, if received in writing, at least 30 working days before the examination. For CAD purposes working days means Sunday to Thusday (excluding public holidays). Refund of examination fees for emergency cancellations or non-attendance will not be given even if a valid medical certificate (original) is provided, together with a letter of explanation.

J7 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, National ID cards (Maldivians Only). 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 CAD 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.

Whilst every attempt is made to ensure reasonable comfort in examination halls which are operated on hire or lease arrangements and over which the CAD, as a result, has no direct control, the CAD cannot be held responsible for extraneous noise or for any breakdown or fluctuation in heating, lighting or ventilation facilities,. Candidates are also advised that, at all examination centres, a 'no smoking rule' must be observed.

J8 MATERIALS FOR THE EXAMINATION

We will provide everything needed for the examination. No other materials are allowed on the desks. However, candidates may use own pens when writing essays. The use of calculators is not permitted.

J9 EXAMINATION BRIEFING

Before the start of the examinations, the invigilator will give a briefing regarding the examination**.**

J10 REGULATIONS APPLIED TO THE CONDUCT OF WRITTEN EXAMINATIONS

Candidates are not allowed to use any loose paper other than that provided at the examination. All papers issued by the CAD are to be returned with the answer sheet to the invigilator on completion.

Candidates must ensure that all answers have been transferred onto their answer sheet by the end of the examination. Candidates failing to do this will not be given any extra time.

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 to silent or 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.*

Candidates are to stop work and put pencils down when so directed and must remain seated and quiet until all answer material has been collected.

Any candidate who attempts to remove unauthorised examination materials from the room will be liable to disqualification from those examinations which have been taken and may be subject to special arrangements for future examinations.

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.

J11 EXAMINATION RESULTS

Candidates should not telephone CAD to request despatch dates of examination results, as results will not be

given over the telephone under any circumstances. Results will not be released by fax, nor is it possible to collect your results on the day of despatch, simply because one candidate could enjoy time advantage over another. Results will not be released until any outstanding payments have been received.

The CAD cannot enter into discussion or correspondence with candidates on the subject of their written examination results.

J12 MCAR-66 MODULE EXAM RE-SITS-90 DAY RULE

MCAR-66 Appendix II, 1.11 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 a MCAR-147 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'.

Apart from the exemption given in exemption no. EXE/66-1 dated July 22, 2007, this rule applies to all candidates i.e. self-study student, candidates undertaking exam module training only and candidates undertaking a full approved course. As per EXE/66-1 the first failed attempt of Module 10 examination may be retaken after 30 days of the failed examination.

In any case, the candidate must provide the CAD with a MCAR-147 course completion certificate relating to the previously failed module(s) with their application to re-sit the failed module(s). All other applicants must sign the declaration on CAD Form 19E to confirm that they have not attempted the same failed exam module(s) elsewhere within 90 days

J12.1 MCAR-147 Course Completion Certificate

The MCAR-147 Course Completion Certificate must:-

• Clearly identify the training establishments name and address

• The candidates name

• Details of the module training given

• Duration of training including commencement and completion

J12.2 Applications for re-sit of failed modules at MCAR-147 Organisations

Candidates applying to re-sit failed modules at MCAR-147 organisations must adhere to the 90 day rule detailed in Section J12, unless they have undertaken a further 'tailored to suit' course of training with that organisation or have provided the organisation with the appropriate course completion certificate as detailed in J12.1.

J13 EXAMINATION PASS STANDARDS AND VALIDITY PERIODS

A candidate must complete all required written and/or oral examinations within 5 years of their first pass except in the cases detailed in sub-section J13.1 and J13.2 below. Passes falling outside that time limit will lapse. The papers can be attempted in any order. A pass in a MCAR-66 examination will be awarded to a candidate achieving at least 75% of the marks allocated to that examination.

J13.1 Exam module passes for the Removal of Limitations

Under the current rules there is no deadline for the removal of limitations from a MCAR-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.

J13.2 Exam module passes for the Extension of one Category to Another

In accordance with MCAR-66 Appendix 1.12, the 5 year period does not apply to those modules which are common to more than one MCAR-66 licence category or sub category and which were previously passed as part of another such category or sub-category examination.

APPENDICES TO SECTION J

APPENDIX A COMMON ABBREVIATIONS

A
a: atto
ABIP Advisory Body of Interested Parties
AC: Alternating Current
a/c: Aircraft
ACARS: Aircraft Communication Addressing and Reporting System
AD: Airworthiness Directive
ADI: Attitude Director Indicator
ADF: Automatic Direction Finder
ADO: Approved Design Organisation
AFCS: Automatic Flight Control System
AGNA: Advisory Group of National Authorities
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
a/l: airline
ALT: Altitude
AMC: Acceptable Means of Compliance
A-NPA: Advance Notice of Proposed Amendment
AMO: Approved Maintenance Organisation
AMOSS: Airline Maintenance and Operation Support System
AMSD: Aircraft Maintenance Standards Division
AMP: Approved Maintenance Programme
AMT: Approved Maintenance Training
AN: Airworthiness Notice (CAP 455)
ANO: Air Navigation Order
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
B
BCAR: British Civil Airworthiness Requirements
BR: Basic Regulation
C
c: centi
CAME: Continuous Airworthiness Maintenance Exposition
CAD: Civil Aviation Department, Maldives
CADC: Central Air Data Computer
CAP: Civil Aviation Publication
CDU: Control Display Unit
Certifying staff: means personnel responsible for the release of an aircraft or a component after maintenance.
CF: Certification
CJAA: Central Joint Aviation Authorities
CofA: 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.
CRD: Comment Response Document
CRI: Certification Review Item
CRT: Cathode Ray Tube
CRS: Certificate of Release to Service
CS: Certification Specification
CSP: Certification Standardisation Panel
D
d: deci

da: deca (ten)
db: decibel (acoustic measurement unit)
DC: Direct Current
DG TREN: Directorate-General for Energy and Transport (European Commission)
DME: Distance Measuring Equipment
DOA: Design Organisation Approval
DOE: Design Organisation Exposition

E

E: esca
E: Engine
EADI: Electronic Attitude Director Indicator
EASA: European Aviation Safety Agency
EC: European Commission
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
EL: Engineer Licensing
EPA: European Part Approval
EPR: Engine Pressure Ratio
EPR: Environmental Protection Requirements
EPROM: Erasable Programmable Read Only Memory
ER: Essential Requirements
ETSO: European Technical Standard Order
ETSOa: European Technical Standard Order authorisation
EU: European Union

F

f: femto
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

G: giga
GA: general aviation
GM: Guidance Material
GMT: Greenwich Mean Time
GPS: Global Positioning System
GPWS: Ground Proximity Warning System
GS: Glide Slope

H

h: hecto (hundred)
HLD: Hold
HSI: Horizontal Situation Indicator
HUD: Head-Up Display

I

IAS: Indicated Airspeed
ICAO: International Civil Aviation Organisation
ILS: Instrument Landing System
INS: Inertial Navigation System
IPC: Illustrated Parts Catalogue
IR: Implementing Rules
IRS: Inertial Reference System
ISA: International Standard Atmosphere

J

J: joule

JAA: Joint Aviation Authorities
JAR: Joint Aviation Requirements

K

K: kelvin
k: thousand
KHz: KiloHertz
KIAS: Indicated Airspeed in Knots
KT: Knots (nautical miles/ hour)

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

M: mega (million)
m: milli
m: metre
µ: micro
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.
MB: Management Board (EASA)
MCAR: Maldivian Civil Aviation Regulation
MCAR-21: Certification of aircraft and related products, parts and appliances
MCAR-M: Continuing Airworthiness Requirements
MCAR-145: Maintenance Organisation Approvals
MCAR-66: Certifying Staff
MCAR-147: Training Organisation Requirements
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
MOM: Maintenance Organisation Manual (Subpart F)
MSA: Member States Administration
MS: Member State (of the European Community)
MTO(A): Maintenance Training Organisation (Approval)
MTOE: Maintenance Training Organisation Exposition
MTOM: Maximum Take Off Mass
MTOP: Maximum Take-Off Power

N

N: newton
n: nano
NAA: National Aviation Authority
NAV: navigation
NPA: Notice of Proposed Amendment

O

OAT: Outside Air Temperature
OCP: Organisations Certification Procedure
OEM : Original Equipment Manufacturer
Ops: Operations
Organisation:means a natural person, a legal person or part of a legal person. Such an organisation may be established at more than one location whether or not within the territory of the Member States.

P

P: peta
P: Propeller
p: pico
Pa: Pascal
PAD: Proposed Airworthiness Directive

Part 21: Commission Regulation (EC) No 1702/2003 Certification of aircraft and related products, parts and appliances
Part M: Commission Regulation (EC) No 2042/2003 Annex I Continuing Airworthiness Requirements
Part 145: Commission Regulation (EC) No 2042/2003 Annex II Maintenance Organisation Approvals
Part 66: Commission Regulation (EC) No 2042/2003 Annex III Certifying Staff
Part 147: Commission Regulation (EC) No 2042/2003 Annex IV Training Organisation Requirements
PCB: Printed Circuit Board
PCM: Project Certification Manager
PCP: Products Certification Procedure
POA: Production Organisation Approval
POE: Production Organisation Exposition
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

RCVR: Receiver
RG: Rulemaking
RIA: Regulatory Impact Assessment
RMI: Radio Magnetic Indicator
RNAV: Area Navigation
RP: Responsible Party
RTA: Request for Technical Advice

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
SSCC: Safety Standards Consultative Committee
STC: Supplemental Type Certificate
STD: Synthetic Training Device
STCH: STC Holder

T

T: tera
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
VLA: Very Light Aeroplane
VLR: Very Light Rotorcraft
VNAV: Vertical Navigation
VOR: Very-high-frequency Omnidirectional Range
VS: Vertical Speed

W

W: watt
WA: Working Arrangement
WG: Working Group
WXR: Weather Radar Transceiver

X

XTR: Transmitter

Y

Y: yotta
y: yocto

Z
Z: zeta
z: zepto

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 MCAR-66 maintenance licence.

CAP 455 Airworthiness Notices
CAP 715 An Introduction to Human Factors in Aviation Maintenance
CAP 747 Mandatory Requirements for Airworthiness
CAP 562 Civil Aircraft Airworthiness Information and Procedures
CAR, MAR, ASC
JAR-OPS – 1
JAR-OPS – 3

Commission Regulation EC 1592/2002
Commission Regulation EC 1702/2003 Part 21
Commission Regulation EC 2042/2003 Annex I Part M
Commission Regulation EC 2042/2003 Annex II Part 145
Commission Regulation EC 2042/2003 Annex III Part 66
Commission Regulation EC 2042/2003 Annex IV Part 147
Certification Specifications for Normal, Utility, Aerobatic, and Commuter Category Aeroplanes (CS-23)
Certification Specifications for Large Aeroplanes (CS-25)
Certification Specifications for Small Rotorcraft (CS-27)
Certification Specifications for Large Rotorcraft (CS-29)
Certification Specifications for Auxiliary Power Units (CS-APU)
Certification Specifications for All Weather Operations (CS-AWO)
Certification Specifications for Definitions and Abbreviations (CS-Definitions)
MCAR-21 Certification of aircraft and related products, parts and appliances
MCAR-M Continuing Airworthiness Requirements
MCAR-145 Maintenance Organisation Approvals
MCAR-66 Certifying Staff
MCAR-147 Training Organisation Requirements

Book Title	**Author**	**ISBN**
Basic Knowledge		
Ordinary Level Physics	Abbott	0-435-6700-5
ASA-AMT-G	Dale Crane	1-56027-152-3
Mechanics of Flight	A.C. Kermode	0-582-23740-8
Principles of Flight	Mike Burton	1-85310-779-4
Principles of Flight	Jeppesen	0-88487-358-7
Principles of Flight	Nordian	82-8107-014-5
The Foundations of Helicopter Flight	Simon Newman	0-340-58702-4
The Helicopter How it Flies	J Fay	0-7153-8940-8
The Art & Science of Flying Helicopters	Shawn Coyle	0-340-65249-7

Airframe and Mechanical		
Aircraft Maintenance and Repair	Kroes.Watkins.Delp	0-07-112991-X

The Aeroplane Structure	A.C. Kermode	0-273-25229-1
ASA-AMT-Structure	Dale Crane	1-56027-339-9
Jeppesen General		0-88487-203-3
Jeppesen Airframe		0-88487-205-1
ASA-AMT-A	Dale Crane	1-56027-153-1
Engineered Materials Handbook Vol 1	ASM International	0-87170-279-7
Light Aircraft Inspection	J.E. Heywood	0-85661-016-X
Light Aircraft Maintenance	J.E. Heywood	0-24611-909-8
ASA – AMT – SYS	Dale Crane	1-56027-340-2
Fundamentals of Helicopter Maintenance	Schafer	0891002812
Powerplant		
The Jet Engine	Rolls Royce	0-902-121235
Aircraft Powerplants	Bent & McKinley	0-07-035569-X
Aircraft Powerplants	Kroes. Wild	0-07-113429-6
ASA – AMT – P	Dale Crane	1-56027-410-7
Aircraft Gas Turbine Engine Technology	I. E. Treager	0028018281
Aircraft Gas Turbine Engine Technology	I. E. Treager	007065199X
Electrical / Electronic and Avionics		
Electrical Technology	E Hughes	0470207337
Aircraft Electrical Systems	E Pallet	0-582-98819-5
Aircraft Electricity and Electronics	Eisman	0-02-801859-1
Art of Electronics	Horowitz /Hill	0-521-37095-7
Elements of Electronics	Hickey/Villines	0070286957
Modern Aviation Electronics	A Helfrich	0-13-118803-8
Micro Electronics in Aircraft systems	E Pallet	0-273-08612-X
Digital Logic	Boyce	0-13214619-3
Fiber Optics	Zanger	0-675-20944-7
Introduction to Avionics	Collinson	0-412-48550-9
Avionic Fundamentals		0-89100-293-6

Manual of Avionics	B Kendal	0-632-01863-1
Automatic Flight Control	E Pallet	0-632-03495-5
Aircraft Instruments & Integrated Systems	E Pallett	0-582-08627-2
Digital Avionic Systems	GRS Spitzer	0-07-060333-2
Transport Category Aircraft Systems	Wild	0-88487-232-7
Aircraft Radio Systems	J Powell	0-273-08444-5
Aircraft Radio Systems	J Powell	0-89100-356-8
Radio Navigation Systems	Forssell	0-13-751058-6
Avionic Navigation Systems	Kayton/Fried	0-471-54795-6
Electro-magnetic Compatibility	Kodali	0-7803-117-5

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SECTION K

MCAR-147 AND APPROVED MAINTENANCE TRAINING ORGANISATION

K1 INTRODUCTION

MCAR-147 established the requirements to be met when a Maintenance Training Organisation (MTO) seeks approval to conduct training and examinations as specified in MCAR-66.

This Section of the guidance document must, in particular, be treated as guidance information only. For the full requirements on establishing, manning and approving MCAR-147 organisations, MCAR-147 must be referred to.

Maintenance training organisations (MTO's) offer training for maintenance certifying staff to the MCAR-66 standard.

MTO's are approved to conduct basic training and examinations required by Part- 66, they may also be approved to carry out aircraft type training as specified in MCAR-66.45.

For details of approved organisations please refer to CAD website www.aviainfo.gov.mv.

K2 MCAR-147 APPROVAL OF ORGANISATIONS TO CONDUCT BASIC LICENCE TRAINING

An application for MCAR-147 Basic Training course approval for an organisation will be assessed by the CAD. The basic training course shall consist of knowledge training, practical training, knowledge examination and practical assessment.

Additionally an approved basic training organisation may be approved to conduct examinations, for personnel not enrolled on an approved training course, in the subject area covered by their approval.

All examinations shall meet the requirements of MCAR-66 Appendix II.

Where agreed by the CAD and in accordance with MCAR-66, should an organisation choose to contract out an element to another MCAR-147 organisation, the organisation in question must take responsibility for ensuring all elements of the training course has been completed satisfactorily.

K2.1 Knowledge Training

This element must cover the subject matter for a MCAR-66 category or sub-category A, B1 or B2 aircraft maintenance licence. Each Category or sub-category may be subdivided into modules of knowledge and may be inter-mixed with the practical training.

K2.2 Knowledge Examination

Knowledge examinations must cover a representative cross section of subject matter from the relevant module syllabus detailed in MCAR-66 Appendix I. The examinations must comply with the requirements of MCAR-66 Appendix II for number of questions and timing.

K2.3 Practical Training

This element must cover the use of common tooling/ equipment, the disassembly/assembly of a representative selection of aircraft parts and the participation in representative maintenance activities being carried out relevant to the particular module.

K2.4 Practical Assessment

The practical training must be assessed to ensure student competence in the use of appropriate documentation, tooling and equipment whilst observing pertinent safety precautions.

K3 MCAR-147 APPROVAL OF ORGANISATIONS TO CONDUCT TYPE TRAINING

Type training as required by MCAR-66.A.45(c) must meet the requirements of MCAR-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 EASA Part-66 Appendix I (currently subject to amendment).

K4 EXPOSITION AND PROCEDURES

K4.1 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 figure in the MCAR-147 procedures. The information should be concise, relevant and workable.

K4.2 Validity and Variations

Unless the maintenance training organisation's approval has previously been surrendered, superseded, suspended, revoked or expired by virtue of exceeding the expiry date specified in the approval certificate, the continued validity of the approval is dependent upon:

- The organisation remaining in compliance with MCAR-147, in accordance with the provisions related to the handling of findings as specified by the CAD and
- The CAD being granted access to the organisation to determine continued compliance with MCAR-147 and
- The certificate not being surrendered or revoked and
.
- the payment of any charges prescribed by the CAD.

Failure to pay entitles the CAD to suspend, but does not automatically render the approval invalid.

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

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

K4.3 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 MCAR-147 and shall be complied with at all times.
- The title(s) and name(s) of the person(s) nominated in accordance with MCAR-147.105(b).
- The duties and responsibilities of the above, including matters on which they may deal directly with the CAD 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 MCAR-147.145(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 MCAR-147.130(a).
- The maintenance training organisation's control procedure, as required by MCAR-147.145(c), when authorised to

conduct training, examination and assessments, in locations different from those specified in MCAR-147.145(b).

- A list of the locations pursuant to MCAR-147.145(b).
- A list of organisations, if applicable, as specified in MCAR-147.145(d)

A recommended format for the exposition can be found at Appendix I to MCAR-147. In addition the CAD has available, an example MCAR-147 exposition as guidance when applying for approval, which can be found on our web site.

K5 RECORDS OF TRAINING

Any training organisation should keep the records of basic training, type training, examinations and assessments, of all students training for at least 5 years after the completion of a course.

The CAD may need to inspect a student's training records before issuing a licence or rating. All records thus required will be returned.

K5.1 Published Syllabus

All required basic training for the issue of a MCAR-66 licence – category A, B1 and B2 will be conducted in accordance with the modular syllabus published in MCAR-66 Appendix I.

K6 APPLICATION TO BECOME A MCAR-147 APPROVED ORGANISATION

An organisation wishing to become MCAR-147 approved must formally submit an application to the CAD. CAD Form 12 may be downloaded from our web site. Use this form for the grant of a MCAR-147 approval for basic and/or type training, or for the extension or variation of an existing MCAR-147 approval.

K6.1 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.

Note: Anybody's Part-147 exposition provided by UK CAA is available from CAD upon request.

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