

AERONAUTICAL CIRCULAR CIVIL AVIATION AUTHORITY – MACAO, CHINA

SUBJECT:

MAR-147 Approved Maintenance Training/Examinations

EFFECTIVE DATE:

13 June 2016

CANCELLATION:

This AC supersedes AC/AW/008R01 dated 31 July 2015.

Note: The content of AC/AW/008R01 is entirely relocated to this AC/PEL/014R00.

GENERAL:

The President of Civil Aviation Authority – Macao, China, in exercise of his power under Article 35 of the Statutes of Civil Aviation Authority approved by the Decree-Law 10/91/M and Paragraph 89 of the Air Navigation Regulation of Macao (ANRM) established this Aeronautical Circular (AC).

1 MAR-147 Approved Maintenance Training/Examinations

- 1.1 The MAR-147 Approved Maintenance Training/Examinations Issue 2, enclosed in Appendix 1 of this AC, prescribes the requirements to be met by organisations seeking for approval to conduct approved training and/or examination of certifying staff to achieve the standard as specified in MAR-66.
- 1.2 The MAR-147 was firstly issued on 15 Apr 2008 and came into force on 01 Jul 2008.
- 1.3 The purpose of this complete reissue is to update the current Approved Maintenance Training Organisation requirements to synchronise with worldwide standard, as well as to harmonize with MAR-66 Issue 2 published in late 2013.

- END -



Macao Aviation Requirements

MAR-147

Approved Maintenance Training/Examinations

Issue 2

Approved by:


President
AACM



Application for further copies of the Macao Aviation Requirements should be addressed to:

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FOREWORD

1. The content of this document was developed based on EASA Part-147 published in Commission Regulation No. 1321/2014 of 26 November 2014 published in the Official Journal of the European Union on 17 Dec 2014.
2. Amendments are incorporated into the print text by means of a 'Revision' or a complete 'Re-issue'.
3. New, amended and corrected text is indicated by a marginal line.

Preambles

ISSUE 1 *15/Apr/2008*

This MAR-147 was first issued on 15/Apr/2008 and became effective on 01/Jul/2008.

ISSUE 2 *31/Jul/2015*

- Restructured the document. There are three sections where Section 1 contains reorganised subparts A, B, C, D and E, Section 2 contains Acceptable Means of Compliance (AMC) and Guidance Material (GM) and Section 3 contains Appendices.
- Changed the paragraph numbering of the MAR-147 to align with EASA Part-147.
- Incorporated the definition of “Accountable Manager” in MAR 147.105 and AMC 147.105.
- Extended the privilege of a MAR-147 approved maintenance training organisation regarding conduct of examination on behalf of the AACM to cover practical assessment.
- Added a new provision MAR 147.140(c) for approving minor amendments to the maintenance training organisation exposition through an exposition procedure.
- Added the provisions for handling audit findings in MAR 147.160.
- Added the provision on Basic Training Course Duration in Section 3 Appendix 1.
- Added a new provision on records in respect of instructors, knowledge examiners and practical assessors in AMC 147.110.
- Added a new provision regarding disqualified examiner to be reinstated in GM 147.135.

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Section 1. Requirements

1. General

This Section 1 contains the Requirements for Maintenance Training.

2. Presentation

- 2.1 The requirements of MAR-147 are presented in full page format on loose pages, each page being identified by the date of issue or issue/revision under which it is reissued or amended.
- 2.2 Explanatory Notes not forming part of the requirements appear in smaller typeface.
- 2.3 New, amended and corrected text is indicated by a marginal line; except for a complete reissue of the whole document.

SUBPART A - General

MAR 147.1 General

- (a) This MAR-147 prescribes the requirements to be met by organisations seeking approval to conduct approved training and/or examination of certifying staff as specified in MAR-66.
- (b) Approved basic training is required by MAR-66 to qualify for the maximum reduction in total maintenance experience specified in MAR-66.
- (c) To qualify for the sub-paragraph (b) approved basic training the organisation must be approved by the AACM in accordance with MAR-147 Subparts B and C.
- (d) An organisation may be approved by the AACM in accordance with MAR-147 Subparts B and D to carry out the aircraft type training specified in MAR-66.

MAR 147.5 Effectivity

- (a) MAR-147 was first issued on 15 April 2008 and became effective on 01 July 2008.
- (b) This MAR-147 is re-issued on 31 July 2015 and becomes effective on 15 Aug 2015.
- (c) A MAR-147 approval may be issued by the AACM at any time after the effective date of this MAR.

MAR 147.10 Definitions

(See GM 147.10)

For the purpose of this MAR-147 the following definitions shall apply:

‘AACM’ stands for Civil Aviation Authority-Macao, China.

'*Organisation*' means an organisation registered as a legal entity or a natural person. Such an organisation may conduct business from more than one address and may hold more than one Macao Aviation Requirements (MAR) approval.

MAR 147.15 Application and issue

- (a) An application for the issue, variation or renewal of a MAR-147 maintenance training organisation approval or for the amendment of an existing MAR-147 maintenance training organisation approval shall be made on a form and together with a copy of the training organisation exposition prescribed by the AACM or amendment thereto.
- (b) Any applicant that has demonstrated to the AACM that it meets the relevant requirements of this MAR-147 and has paid any associated fees prescribed by the AACM is entitled to a MAR-147 maintenance training organisation approval.
- (c) The approval when granted will apply to the whole maintenance training organisation headed by the accountable manager.

MAR 147.20 Applicability

(See AMC and GM 147.20)

- (a) This MAR-147 Subpart B prescribes the requirements for issuing approvals to maintenance training organisations to conduct the approved training courses and/or examinations required by MAR-66 and for such organisations to issue certificates to students upon successful completion of such courses.
- (b) Maintenance training organisations located in Macao may be granted approval when in compliance with this MAR-147 Subparts B and C or Subparts B and D or a combination of both.
- (c) Maintenance training organisations located outside Macao may be granted approval if the AACM is satisfied that there is a need for such approval. Alternatively, the AACM may accept an organisation located outside Macao on the basis of an approval issued by the National Authority subject to the organisation being in compliance with any additional conditions that ensure equivalence to MAR-147.

SUBPART B - ORGANISATIONAL REQUIREMENTS

MAR 147.100 Facility requirements

(See AMC and GM 147.100)

- (a) The size and structure of facilities shall ensure protection from the prevailing weather elements and proper operation of all planned training and examination on any particular day.
- (b) Fully enclosed accommodation separate from other facilities shall be provided for the instruction of theory and the conduct of knowledge examinations.
 - 1. The maximum number of students undergoing knowledge training during any training course shall not exceed 28.
 - 2. The size of accommodation for examination purposes shall be such that no student can read the paperwork or computer screen of any other student from his/her position during examinations.
- (c) The paragraph (b) accommodation environment shall be maintained at a light, noise and temperature/humidity level such that students are able to concentrate on their studies or examination as appropriate, without undue distraction or discomfort.
- (d) In the case of a basic training course, basic training workshops and/or maintenance facilities separate from training classrooms shall be provided for practical instruction appropriate to the planned training course. If, however, the MAR-147 approved organisation is unable to provide such facilities, arrangements may be made with another organisation to provide such workshops and/or maintenance facilities, in which case, a written agreement shall be made with such organisation specifying the conditions of access and use thereof. The AACM will require access to any such contracted organisation and the written agreement shall specify this access.
- (e) In the case of an aircraft type / task training course access shall be provided to appropriate facilities containing examples of aircraft type as specified in MAR 147.115(d).
- (f) The maximum number of students undergoing practical training during any training course shall not exceed 15 per supervisor or assessor.
- (g) Office accommodation shall be provided for instructors, knowledge examiners and practical assessors of a standard to ensure that they can prepare for their duties without undue distraction or discomfort.
- (h) Secure storage facilities shall be provided for examination papers and training records. The storage environment shall be such that documents remain in good condition for the retention period as specified in MAR 147.125. The storage facilities and office accommodation may be combined subject to adequate security.
- (i) A library shall be provided containing all current technical material appropriate to the scope and level of training undertaken.

MAR 147.105 Personnel requirements

(See AMC and GM 147.105)

- (a) The MAR-147 approved maintenance training organisation shall appoint an accountable manager who has corporate authority for ensuring that all training commitments can be financed and carried out to the standard required by MAR-147.
- (b) A person or group of persons, whose responsibilities include ensuring that the maintenance training organisation is in compliance with MAR-147, shall be nominated. Such person(s) shall be responsible to the accountable manager. The senior person or one person from the group of persons may also be the

accountable manager subject to meeting the requirements for the accountable manager as defined in paragraph (a).

- (c) The MAR-147 approved maintenance training organisation shall contract sufficient staff to plan/perform knowledge and practical training, conduct knowledge examinations and practical assessments in accordance with the approval.
- (d) By derogation to paragraph (c), when another organisation is used to provide practical training and assessments, such other organisation's staff may be nominated to carry out practical training and assessments.
- (e) Any person may carry out any combination of the roles of instructor, examiner and assessor subject to compliance with subparagraph (f).
- (f) The experience and qualifications of instructors, knowledge examiners and practical assessors shall be established to a standard acceptable to the AACM.
- (g) The knowledge examiners and practical assessors shall be specified in the maintenance training organisation exposition for the acceptance of such staff.
- (h) Instructors and knowledge examiners shall undergo updating training at least every 24 months relevant to current technology, practical skills, human factors and the latest training techniques appropriate to the knowledge being trained or examined.

MAR 147.110 Records of instructors, examiners and assessors

(See AMC and GM 147.110)

- (a) The MAR-147 approved maintenance training organisation shall maintain a record of all instructors, knowledge examiners and practical assessors. These records should reflect the experience and qualification, training history and any subsequent training undertaken.
- (b) Terms of Reference shall be drawn up for all instructors, knowledge examiners and practical assessors. Any limitation of the scope of authority of the individual, particularly those staff designated in MAR 147.105(g), must be clearly indicated.

MAR 147.115 Instructional equipment

(See AMC and GM 147.115)

- (a) Each classroom shall have sufficient presentation equipment of a standard that ensures students can easily read presentation text/drawings/diagrams and figures from any position in the classroom. Presentation equipment shall include representative synthetic training devices to assist students understanding of the particular subject matter where such devices are considered beneficial for such purposes.
- (b) The basic training workshops and/or maintenance facilities as specified in MAR 147.100(d) must have all tools and equipment necessary to perform the approved scope of training.
- (c) The basic training workshops and/or maintenance facilities as specified in MAR 147.100(d) must have an appropriate selection of aircraft, engines, aircraft parts and avionic equipment.
- (d) The aircraft type training organisation as specified in MAR 147.100(e) must have access to the appropriate aircraft type. Synthetic training devices may be used when such synthetic training devices ensure adequate training standards.

MAR 147.120 Maintenance training material

(See AMC 147.120)

- (a) Maintenance training course material shall be provided to the student and cover as applicable:
 - 1. the basic knowledge syllabus specified in MAR-66 for the relevant aircraft maintenance licence category or sub-category and,
 - 2. the type course content required by MAR-66 for the relevant aircraft type and aircraft maintenance licence category or sub-category.
- (b) Students shall have access to examples of maintenance documentation and technical information of the library as specified in MAR 147.100(i).

MAR 147.125 Records

The MAR-147 approved maintenance training organisation shall keep all student training, examination and assessment records for at least five years following completion of the particular student's course.

MAR 147.130 Training procedures and quality system

(See AMC and GM 147.130)

- (a) The MAR-147 approved maintenance training organisation shall establish procedures acceptable to the AACM to ensure proper training standards and compliance with all relevant requirements in this MAR-147.
- (b) The MAR-147 approved maintenance training organisation shall establish a quality system including:
 - 1. an independent audit function to monitor training standards, the integrity of knowledge examinations and practical assessments, compliance with and adequacy of the procedures, and
 - 2. a feedback system of the audit findings to the person(s) and ultimately to the accountable manager referred to in MAR 147.105(a) to ensure, as necessary, corrective action.

MAR 147.135 Examinations

(See AMC and GM 147.135)

- (a) The examination staff shall ensure the security of all questions.
- (b) Any student found during a knowledge examination to be cheating or in possession of material pertaining to the examination subject other than the examination papers and associated authorised documentation shall be disqualified from taking the examination and may not take any examination for at least 12 months after the date of the incident. The AACM shall be informed of any such incident together with the details of any enquiry within one calendar month.
- (c) Any examiner found during a knowledge examination to be providing question answers to any student being examined shall be disqualified from acting as an examiner and the examination declared void. The

AACM shall be informed of any such occurrence within one calendar month.

MAR 147.140 Maintenance training organisation exposition

(See AMC 147.140)

- (a) The MAR-147 approved maintenance training organisation shall provide an exposition for use by the organisation describing the organisation and its procedures and containing the following information:
1. a statement signed by the accountable manager confirming that the maintenance training organisation exposition and any associated manuals defines the maintenance training organisation's compliance with MAR-147 and shall be complied with at all times.
 2. the title(s) and name(s) of the person(s) nominated in accordance with MAR 147.105(b).
 3. the duties and responsibilities of the person(s) specified in sub-paragraph (a)(2), including matters on which they may deal directly with the AACM on behalf of the maintenance training organisation.
 4. a maintenance training organisation chart showing associated chains of responsibility of the person(s) specified in sub-paragraph (a)(2).
 5. a list of the training instructors, knowledge examiners and practical assessors.
 6. a general description of the training and examination facilities located at each address specified in the MAR-147 maintenance training organisation's approval certificate, and if appropriate any other location, as required by MAR 147.145(b).
 7. a list of the maintenance training courses which form the extent of the approval.
 8. the maintenance training organisation exposition amendment procedure.
 9. the maintenance training organisation procedures, as required by MAR 147.130(a).
 10. the maintenance training organisation control procedure, as required by MAR 147.145(c), when authorized to conducting training, examination and assessments in locations different from those specified in the MAR 147.145(b).
 11. a list of the locations pursuant to MAR 147.145(b).
 12. a list of organisations, if appropriate, as specified in MAR 147.145(d).
- (b) The maintenance training organisation exposition and any subsequent amendments shall be approved by the AACM.
- (c) Notwithstanding paragraph (b) minor amendments to the maintenance training organisation exposition may be approved through an exposition procedure.

MAR 147.145 Privileges of the MAR-147 approved maintenance training organisation

(See AMC and GM 147.145)

- (a) The MAR-147 approved maintenance training organisation may carry out the following as permitted by and in accordance with the maintenance training organisation exposition:

1. basic training courses to the MAR-66 syllabus, or part thereof.
 2. aircraft type / task training courses in accordance with MAR-66.
 3. the examinations and practical assessments on behalf of the AACM including, when requested by the AACM, the examination and practical assessment of students who did not attend the basic or aircraft type training course at the MAR-147 approved maintenance training organisation.
 4. the issue of certificates in accordance with Appendix 3 following successful completion of the approved basic or aircraft type training courses and examinations specified in sub-paragraph (a)(1), (a)(2) and (a)(3), as applicable.
- (b) Training, knowledge examinations and practical assessments may only be carried out at the locations identified in the MAR-147 approval certificate and/or at any location specified in the maintenance training organisation exposition.
- (c) By derogation to paragraph (b), the MAR-147 approved maintenance training organisation may only conduct training, knowledge examinations and practical assessments in locations different from the paragraph (b) locations in accordance with a control procedure specified in the maintenance training organisation exposition. Such locations need not be listed in the maintenance training organisation exposition.
- (d)
1. The MAR-147 approved maintenance training organisation may subcontract the conduct of basic theoretical training, type training and related examinations to a non maintenance training organisation only when under the control of the MAR-147 approved maintenance training organisation quality system.
 2. The subcontracting of basic theoretical training and examination is limited to MAR-66 Appendix 1 Modules 1, 2, 3, 4, 5, 6, 8, 9 and 10.
 3. The subcontracting of type training and examination is limited to powerplant and avionic systems.
- (e) An organisation may not be approved to conduct only examinations unless approved to conduct training.

MAR 147.150 Changes to the MAR-147 approved maintenance training organisation

- (a) The MAR-147 approved maintenance training organisation shall notify the AACM of any proposed changes to the organisation that affect the approval before any such change takes place, in order to enable the AACM to determine continued compliance with MAR-147 and to amend if necessary the approval certificate.
- (b) The AACM may prescribe the conditions under which the MAR-147 approved maintenance training organisation may operate during such changes unless the AACM determines that the MAR-147 approval must be suspended.
- (c) Failure to inform the AACM of such changes may result in suspension or revocation of the MAR-147 approval certificate backdated to the actual date of the changes.

MAR 147.155 Continued validity

Unless the MAR-147 approval has previously been surrendered, superseded, suspended, revoked or expired by virtue of exceeding any expiry date that may be specified in the approval certificate, the continued validity of the approval is dependent upon:

- 1 the MAR-147 approved maintenance training organisation remaining in compliance with MAR-147, in accordance with the provisions related to the handling of findings as specified in MAR-1 Airworthiness Procedure No. AP10; and
- 2 the AACM being granted access to the MAR-147 approved maintenance training organisation to determine continued compliance with this MAR-147; and
- 3 the payment of any charges prescribed by the AACM.

MAR 147.160 Findings

- (a) A level 1 finding is one or more of the following:
1. any significant non-compliance with the examination process which would invalidate the examination(s),
 2. failure to give the AACM access to the organisation facilities during normal operating hours after two written requests,
 3. the lack of an accountable manager,
 4. a significant non-compliance with the training process.
- (b) A level 2 finding is any non-compliance with the training process other than level 1 findings.
- (c) After receipt of notification of findings, the holder of the MAR-147 approval shall define a corrective action plan and demonstrate corrective action to the satisfaction of the AACM within a period agreed by the AACM.

SUBPART C – THE APPROVED BASIC TRAINING COURSE**MAR 147.200 The approved basic training course**

(See AMC 147.200)

- (a) The approved basic training course shall consist of knowledge training, knowledge examination, practical training and practical assessment.
- (b) The knowledge training element shall cover the subject matter for a MAR-66 category or sub-category A, B1, B2 or B3 aircraft maintenance license as specified in MAR-66.
- (c) The knowledge examination element shall cover a representative cross section of subject matter from the paragraph (b) training element.
- (d) The practical training element shall cover the practical 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 MAR-66 complete module.
- (e) The practical assessment element shall cover the practical training and determine whether the student is competent at using tools and equipment and working in accordance with maintenance manuals.
- (f) The duration of basic training courses shall be in accordance with Appendix 1.
- (g) The duration of conversion courses between (sub)categories shall be determined through an assessment of the basic training syllabus and the related practical training needs.

MAR 147.205 Basic knowledge examinations

(See AMC 147.205)

Basic knowledge examinations shall:

- (a) be in accordance with the standard defined in MAR-66.
- (b) be conducted without the use of training notes.
- (c) cover a representative cross section of subjects from the particular module of training completed in accordance with MAR-66.

MAR 147.210 Basic practical assessment

(See AMC 147.210)

- (a) Basic practical assessments shall be carried out during the basic maintenance training course by the nominated practical assessors at the completion of each visit period to the practical workshops/maintenance facility.
- (b) The student shall achieve an assessed pass with respect of the MAR 147.200(e).

SUBPART D – AIRCRAFT TYPE/TASK TRAINING

MAR 147.300 Aircraft type/task training

(See AMC 147.300)

A MAR-147 approved maintenance training organisation shall be approved to carry out MAR-66 aircraft type and/or task training subject to compliance with the standard specified in MAR-66.45.

MAR 147.305 Aircraft type examinations and task assessments

(See AMC 147.305)

A MAR-147 approved maintenance training organisation approved in accordance with MAR 147.300 to conduct aircraft type training shall conduct the aircraft type examinations or aircraft task assessments specified in MAR-66 subject to compliance with the aircraft type and/or task standard specified in MAR-66.

SUBPART E – EQUIVALENT SAFETY AND REVOCATION

MAR 147.400 Equivalent safety cases

(See AMC 147.400)

- (a) The AACM may exempt a training organisation from any requirement in MAR-147 when satisfied that a situation exists not covered by MAR-147 and subject to compliance with any supplementary condition(s) the AACM considers necessary to ensure equivalent safety. Such supplementary condition(s) must be agreed by the AACM to ensure continued recognition of the approval.
- (b) The AACM may exempt an education institution from the need to comply with all the requirements of MAR-147 subject to the AACM being satisfied that training and examination standards are equivalent to MAR-66, that the training hours are in accordance with MAR 147.200 and access is permitted in accordance with MAR 147.155. Such an education institution must be issued a MAR-147 approval certificate on the basis of this exemption.

MAR 147.405 Revocation, suspension, limitation, refusal to renew the MAR-147 approval or acceptance

(See GM 147.405)

- (a) The AACM may, on reasonable grounds after due inquiry, revoke, suspend, limit or refuse to renew the MAR-147 approval if the AACM is not satisfied that the holder of the approval continues to meet the requirements of MAR-147 subject to the conditions of sub-paragraph (a)(1) .
 - 1. Before revoking, suspending, limiting or refusing to renew a MAR-147 approval, the AACM will first give at least 28 days notice to the MAR-147 approval holder in writing of its intention so to do and of the reasons for its proposal and will offer the holder an opportunity to make representations and the AACM will consider those representations.
- (b) Except as specified otherwise in sub-paragraph (b)(1), any MAR 147.20 (c) maintenance training organisation which was accepted principally on the basis of an approval issued by an authority other than AACM, may be subjected to the limitations and conditions of paragraph (a) and (a)(1) by the AACM.
 - 1. Surrender, suspension, revocation or refusal to renew the approval issued by the authority other than AACM invalidates the MAR-147 acceptance from the date of such approval surrender, suspension, revocation or expiry. The AACM will inform the MAR-147 acceptance holder of such fact but cannot offer the opportunity to make sub-paragraph (a)(1) representations in this case.

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Section 2. Acceptable Means of Compliance and Guidance Material (AMC & GM)

GM 147.10 Definitions

(See MAR 147.10)

With regard to the 'organisation' definition, any organisation registered outside Macao with training facilities inside Macao may need to show that it can legally conduct business in Macao.

AMC 147.15 Application

The application form should contain the information required in the AACM Form Twelve.

GM 147.20(b) Applicability

(See MAR 147.15(b))

- 1 For an organisation to be approved in accordance with MAR 147.20(b) as an organisation located in Macao means that the MAR 147.105(b) management should be located in Macao. It also follows that when the MAR 147.105(b) management is located outside Macao MAR 147.20(c) applies. However it should be noted that such an organisation may use a 'nationally based' management structure to satisfy MAR 147.105(b) rather than the 'internationally based' management structure of such an organisation in which case MAR 147.20(b) would apply.
- 2 Where the organisation uses facilities both inside and outside the Macao under the same MAR-147 approval such facilities may be included in the approval being identified on the approval certificate subject to the maintenance training organisation exposition identifying the facilities and containing procedures to control such facilities and the AACM being satisfied that they form an integral part of the MAR-147 approved maintenance training organisation.

AMC 147.20(c) Applicability

(See MAR 147.20(c))

For the AACM to be satisfied that there is a need, will require the potential applicant to provide evidence from an AACM approved MAR-145 maintenance organisation that such organisation would like to use the potential applicant's facilities for maintenance training. The evidence should be in the form of a letter(s) from the Macao based organisation(s) giving the reasons for the need. The AACM reserves the right to be satisfied that the need is genuine before accepting such application.

GM 147.20(c) Applicability

(See MAR 147.20(c))

- 1 The principal reason for AACM accepting an organisation on the basis of an approval granted by the other authority is to ensure the most cost effective use of its staff resources. It therefore follows that the AACM will attempt to use this method in any country or place that contains a significant number of maintenance training organisations used by the aviation industry of Macao.
- 2 The AACM's policy in respect of accepting an organisation on the basis of an approval granted by the other authority is to ensure equivalence to MAR-147. The AACM establishes equivalence to MAR-147 by;
 - (a) Comparing the relevant maintenance training regulations and working procedures of the other authority with MAR-147 and MAR-1 to determine differences and establish additional conditions relative to the differences.
 - (b) Being satisfied that the other authority will cooperate with the AACM by carrying out and reporting on routine audits and specific investigations of the organisations and training standards.
 - (c) Being satisfied that the MAR-147 accepted maintenance training organisations comply with the additional conditions established via sub-paragraph (a) and that the other authority reports any non compliance that could result in suspension or revocation of the MAR-147 acceptance.
 - (d) Publishing the additional conditions for organisations in each country or place as AMC in the form of Appendices to MAR-147 or equivalent means.
- 3 Notwithstanding sub-paragraphs (1) and (2) when such a training organisation has a facility located in Macao then approval in accordance MAR 147.20(b) will be required.

AMC 147.100(i) Facilities requirements

(See MAR 147.100(i))

- 1 For approved basic maintenance training courses this means holding and ensuring reasonable access to copies of all MARs and Macao aviation legislation, examples of typical aircraft maintenance manuals and service bulletins, airworthiness directives, aircraft and component records, release documentation, procedures manuals and aircraft maintenance programmes.
- 2 Except for the MARs and Macao aviation regulations, the remainder of the documentation should represent typical examples for both large and small aircraft and cover both aeroplanes and helicopters as appropriate. Avionic documentation should cover a representative range of available equipment. All documentation should be reviewed and updated on a regular basis.

GM 147.100(i) Facilities requirements

(See MAR 147.100(i))

Where the MAR-147 approved organisation has an existing library of regulations, manuals and documentation required by another MAR it is not necessary to duplicate such a facility subject to student access being under controlled supervision.

AMC 147.105 Personnel requirements

(See MAR 147.105)

- 1 The larger MAR-147 approved maintenance training organisation (an organisation with the capacity to provide training for 50 students or more) should appoint a training manager with the responsibility for managing the training organisation on a day to day basis. Such person could also be the accountable manager. In addition, the organisation should appoint a quality manager with the responsibility for managing of the quality system as specified in paragraph MAR 147.130(b) respectively. The organisation should also appoint an examination manager with the responsibility for managing the relevant MAR-147 Subpart C or Subpart D examination system. Such person(s) may also be an instructor and/or examiner.
- 2 The smaller MAR-147 approved maintenance training organisation (an organisation with the capacity to provide training for less than 50 students) may combine any or all of the paragraph 1 positions subject to the AACM verifying and being satisfied that all functions can be properly carried out in combination.
- 3 When the MAR-147 approved maintenance training organisation is also approved against other MARs which contain some similar functions then such functions may be combined.

AMC 147.105(a), (b) and (g) Personnel requirements

(See MAR 147.105(a), (b) and (g))

An AACM Form Four should be completed for each person nominated to hold a position required by MAR 147.105(a), (b) and (g).

GM 147.105(c) Personnel requirements

(See MAR 147.105(c))

The MAR-147 approved maintenance training organisation should have a nucleus of permanently employed staff to undertake the minimum amount of maintenance training proposed but may contract, on a part time basis, instructors for subjects which are only taught on an occasional basis.

GM 147.105(f) Personnel requirements

(See MAR 147.105(f))

It is recommended that potential instructors be trained in instructional techniques.

GM 147.105(g) Personnel requirements

(See MAR 147.105(g))

Examiners should demonstrate a clear understanding of the standard required by MAR-66 and have a responsible attitude to the conduct of examinations such that the highest integrity is ensured.

AMC 147.105(h) Personnel requirements

(See MAR 147.105(h))

Updating training should normally be of 35 hours duration but may be adjusted to the scope of training of the organisation and particular instructor/examiner.

GM 147.105(h) Personnel requirements

(See MAR 147.105(h))

- 1 Records should show for each instructor/examiner when the updating training was scheduled and when it took place.
- 2 The updating training may be subdivided during the 24 months into more than one element and may include such activities as attendance at relevant lectures and symposiums.

AMC 147.110 Records of instructors, examiners and assessors

(See MAR 147.110)

- 1 The following minimum information relevant to the scope of activity should be kept on record in respect of each instructor, knowledge examiner and practical assessor:
 - (a) Name
 - (b) Date of Birth
 - (c) Personnel Number
 - (d) Experience
 - (e) Qualifications
 - (f) Training history (before entry)
 - (g) Subsequent Training
 - (h) Scope of activity
 - (i) Starting date of employment/contract
 - (j) If appropriate – ending date of employment/contract.
- 2 The record may be kept in any format but should be under the control of the organisation's quality system.
- 3 Persons authorised to access the system should be maintained at a minimum to ensure that records cannot be altered in an unauthorised manner or that such confidential records become accessible to unauthorised persons.
- 4 The AACM is an authorised entity when investigating the records system for initial and continued approval or when the AACM has cause to doubt the competence of a particular person.

GM 147.110 Records of Instructors, examiners and assessors

(See MAR 147.110)

Instructors, knowledge examiners and practical assessors should be provided with a copy of their Terms of Reference.

GM 147.115(a) Instructional equipment

(See MAR 147.115(a))

- 1 Synthetic training devices are working models of a particular system or component and include computer simulations.
- 2 A synthetic training device is considered beneficial for complex systems and fault diagnostic purposes.

AMC 147.115(c) Instructional equipment

(See MAR 147.115(c))

- 1 An appropriate selection of aircraft parts means appropriate in relation to the particular subject module or sub-module of MAR-66 being instructed. For example:
 - (a) The turbine engine module should require the provision of sufficient parts from different types of turbine engine to show what such parts look like, what the critical areas are from a maintenance view point and to enable disassembly/assembly exercises to be completed.
 - (b) MAR-66 category B2 avionic training should require amongst other equipment, access to at least one type of installed autopilot and flight director system such that maintenance and system functioning can be observed and therefore more fully understood by the student in the working environment.
- 2 “Access” may be interpreted in conjunction with the facilities requirement of MAR 147.100(d) in that there is an agreement with a MAR-145 approved maintenance organisation to access such parts, etc.

AMC 147.120(a) Maintenance training material

(See MAR 147.120(a))

Training course notes, diagrams and any other instructional material should be accurate. Where an amendment service is not provided a written warning to this effect should be given.

AMC 147.130(b) Training procedures and quality system

(See MAR 147.130(b))

- 1 The independent audit procedure should ensure that all aspects of MAR-147 compliance should be checked at least once in every 12 months and may be carried out as one complete single exercise or subdivided over a 12-month period in accordance with a scheduled plan.
- 2 In a small MAR-147 approved maintenance training organisation the independent audit function may be contracted to another MAR-147 approved maintenance training organisation or a competent person acceptable to the AACM. Where the small training organisation chooses to contract the audit function it is conditional on the audit being carried out twice in every 12-month period with one such audit being unannounced.
- 3 Where the MAR-147 approved maintenance training organisation is also approved to another MAR requiring a

-
- quality system, then such quality system may be combined.
- 4 When training or examination is carried out under the sub-contract control system:
 - (a) a pre audit procedure should be established whereby the MAR-147 approved maintenance training organisation should audit a prospective sub-contractor to determine whether the services of the sub-contractor meet the intent of MAR-147.
 - (b) a renewal audit of the subcontractor should be performed at least once every 12 months to ensure continuous compliance with the MAR-147 standard.
 - (c) the sub-contract control procedure should record audits of the sub-contractor and to have a corrective action follow-up plan.
 - 5 The independence of the audit system should be established by always ensuring that audits are carried out by personnel not responsible for the function or procedure being checked.

GM 147.130(b) Training procedures and quality system

(See MAR 147.130(b))

- 1 The primary objective of the quality system is to enable the MAR-147 approved maintenance training organisation to satisfy itself that it can deliver properly trained students and that the organisation remains in compliance with MAR-147.
- 2 The independent audit is a process of routine sample checks of all aspects of the MAR-147 approved maintenance training organisation's ability to carry out all training and examinations to the required standards. It represents an overview of the complete training system and does not replace the need for instructors to ensure that they carry out training to the required standard.
- 3 A report should be raised each time an audit is carried out describing what was checked and any resulting findings. The report should be sent to the affected department(s) for rectification action giving target rectification dates. Possible rectification dates may be discussed with the affected department(s) before the quality department confirms such dates on the report. The affected department(s) should rectify any findings and inform the quality department of such rectification.
- 4 A large training organisation (an organisation with the capacity to provide training for 50 students or more) should have a dedicated quality audit group whose sole function is to conduct audits, raise finding reports and follow up to ensure that findings are being rectified. For the small training organisation (an organisation with the capacity to provide training for less than 50 students) it is acceptable to use competent personnel from one section/department not responsible for the function or procedure to check the section/department that is responsible subject to the overall planning and implementation being under the control of the quality manager.
- 5 The management control and follow up system should not be contracted to outside persons. The principal function is to ensure that all findings resulting from the independent audit are corrected in a timely manner and to enable the accountable manager to remain properly informed of the state of compliance. Apart from rectification of findings the accountable manager should hold routine meetings to check progress on rectification except that in the large training organisation such meetings may be delegated on a day to day basis to the quality manager as long as the accountable manager meets at least once per year with the senior staff involved to review the overall performance.

AMC 147.135 Examinations

(See MAR 147.135)

- 1 Examinations may be computer or hard copy based or a combination of both.
- 2 The actual questions to be used in a particular examination should be determined by the examination staff.

GM 147.135(c) Examinations

(See MAR 147.135(c))

The AACM will determine when or if the disqualified examiner may be reinstated.

AMC 147.140 Maintenance training organisation exposition

(See MAR 147.140)

- 1 A recommended format of the maintenance training organisation exposition is included in Appendix 2.
- 2 When the MAR-147 approved maintenance training organisation is approved in accordance with any other MAR which also requires an exposition, the exposition required by the other MAR may form the basis of the maintenance training organisation exposition in a combined document, as long as the other exposition contains the information required by MAR 147.140 and a cross reference index is included based upon Appendix 2.
- 3 When training or examination is carried out under the sub-contract control system the maintenance training organisation exposition should contain a specific procedure on the control of sub-contractors as per Appendix 2 item 2.18 plus a list of sub-contractors as required by MAR 147.140(a)(12) and detailed in Appendix 2 item 1.7.
- 4 The AACM may approve a delegated exposition approval system for all changes other than those affecting the MAR-147 approval.

AMC 147.145(d) Privileges of the MAR-147 approved maintenance training organisation

(See MAR 147.145(d))

- 1 When training or examination is carried out under the sub-contract control system it means that for the duration of such training or examination, the MAR-147 approval has been temporarily extended to include the sub-contractor. It therefore follows that those parts of the sub-contractor's facilities, personnel and procedures involved with the MAR-147 approved maintenance training organisation's students should meet MAR-147 requirements for the duration of that training or examination and it remains the MAR-147 organisation's responsibility to ensure such requirements are satisfied.
- 2 The MAR-147 approved maintenance training organisation is not required to have complete facilities and personnel for training that it needs to sub-contract but it should have its own expertise to determine that the sub-contractor meets the MAR-147 standards. Particular attention should be given to ensuring that the training that is delivered also meets the requirements of MAR-66 and the aircraft technologies as appropriate.

- 3 The contract between the MAR-147 approved maintenance training organisation and the sub-contractor should contain:
- a provision for the AACM staff to have right of access to the sub-contractor.
 - a provision for the sub-contractor to inform the MAR-147 approved maintenance training organisation of any change that may affect its MAR-147 approval, before any such change takes place.

GM 147.145(d) Privileges of the MAR-147 approved maintenance training organisation

(See MAR 147.145(d))

- 1 The pre audit procedure should focus on establishing compliance with the training and examination standards set out in MAR-147, MAR-66 and MAR-1.
- 2 The fundamental reason for allowing a MAR-147 approved maintenance training organisation to sub-contract certain basic theoretical training courses is to permit the approval of maintenance training organisations which may not have the capacity to conduct training courses on all MAR-66 modules.
- 3 The reason for allowing the subcontracting of training modules 1 to 6 and 8 to 10 only is, most of the related subjects can generally also be taught by training organisations not specialised in aircraft maintenance and the practical training element as specified in MAR 147.200 does not apply to them. On the contrary training modules 7 and 11 to 17 are specific to aircraft maintenance and include the practical training element as specified in MAR 147.200. The intent of the “limited subcontracting” option is to grant MAR-147 approvals only to those organisations having themselves at least the capacity to teach on aircraft maintenance specific matters.

GM 147.145(d)3 Privileges of the MAR-147 approved maintenance training organisation

(See MAR 147.145(d))

In the case of type training and examination, the reason for allowing only subcontracting to powerplant and avionic systems is that the related subjects can generally also be imparted by certain organisations specialised in these domains such as the Type Certificate Holder of the powerplant or the OEMs of these avionics systems. In such a case, the type training course should make clear how the interfaces with the airframe are addressed and by whom (the subcontracted organisation or the MAR-147 approved maintenance training organisation itself).

AMC 147.200 The approved basic training course

(See MAR 147.200)

For the purpose of this paragraph, a training hour means 60 minutes training, without pause.

AMC 147.200(b) The approved basic training course

(See MAR 147.200(b))

Each MAR-66 licence category or sub-category basic training course may be subdivided into modules or sub-modules of knowledge and may be intermixed with the practical training elements subject to the required time elements of sub-paragraphs MAR 147.200 (f) and (g) being satisfied.

AMC 147.200(d) The approved basic training course

(See MAR 147.200(d))

- 1 Where the MAR-147 approved maintenance training organisation contracts the practical training element either totally or in part to another organisation in accordance with MAR 147.100(d), the organisation in question should ensure that the practical training elements are properly carried out.
- 2 At least 30% of the practical training element should be carried in an actual maintenance working environment.

AMC 147.200(g) The approved basic training course

(See MAR 147.200(g))

Typical conversion durations are given below:

- (a) The approved basic training course to qualify for conversion from holding a MAR-66 aircraft maintenance licence in sub-category A1 to sub-category B1.1 or B2 should not be less than 1600 hours and for conversion from holding a MAR-66 aircraft maintenance licence in sub-category A1 to sub-category B1.1 combined with B2 should not be less than 2200 hours. The course should include between 60% and 70% knowledge training.
- (b) The approved basic training course to qualify for conversion from holding a MAR-66 aircraft maintenance licence in sub-category B1.1 to B2 or category B2 to B1.1 should not be less than 600 hours, and should include between 80% and 85% knowledge training.
- (c) The approved basic training course to qualify for conversion from holding a MAR-66 aircraft maintenance licence in sub-category B1.2 to sub-category B1.1 should not be less than 400 hours, and should include between 50% and 60% knowledge training.
- (d) The approved basic training course to qualify for conversion from holding a MAR-66 aircraft maintenance licence in one sub-category A to another sub-category A should not be less than 70 hours, and should include between 30% and 40% knowledge training.

AMC 147.205 Basic knowledge examinations

(See MAR 147.205)

The AACM may accept that the MAR-147 approved maintenance training organisation can conduct examination of students who did not attend an approved basic course at the MAR-147 approved maintenance training organisation.

AMC 147.210(a) Basic practical assessments

(See MAR 147.210(a))

Where the MAR-147 approved maintenance training organisation contracts the practical training element either totally or in part to another organisation in accordance with MAR 147.100(d) and chooses to nominate practical assessors from the other organisation, the MAR-147 approved maintenance training organisation should ensure that the basic practical assessments are carried out.

AMC 147.210(b) Basic practical assessments

(See MAR 147.210(b))

An assessed pass for each student should be granted when the practical assessor is satisfied that the student meets the criteria of MAR 147.200(e). This means that the student has demonstrated the capability to use relevant tools/equipment/test equipment as specified by the tool/equipment/test equipment manufacturer and the use of maintenance manuals in that the student can carry out the required inspection/testing without missing any defects, can readily identify the location of components and is capable of correct removal/fitment/adjustment of such components. The student is only required to carry out enough inspection/testing and component removal/fitment/adjustments to prove capability. The student should also show an appreciation of the need to ensure clean working conditions and the observance of safety precautions for the student and the product. In addition, the student should demonstrate a responsible attitude in respect to flight safety and airworthiness of the aircraft.

AMC 147.300 Aircraft type/task training

(See MAR 147.300)

Aircraft type training may be sub-divided into airframe and/or powerplant and/or avionics/electrical systems type training courses. A MAR-147 approved maintenance training organisation may be approved to conduct airframe type training only, powerplant type training only or avionics/electrical systems type training only or any combination thereof.

- 1 Airframe type training course means a type training including all relevant aircraft structure and electrical and mechanical systems excluding the powerplant.
- 2 Powerplant type training course means type training on the bare engine, including the build-up to a quick engine change unit.
- 3 The Interface of the engine/airframe systems should be addressed by either airframe or powerplant type training course. In some cases, such as for general aviation, it may be more appropriate to cover the interface during the airframe course due to the large variety of aircraft that can have the same engine type installed.
- 4 Avionic/electrical systems type training course means type training on avionics and electrical systems covered by but not necessarily limited to ATA (Air Transport Association) chapters 22, 23, 24, 25, 27, 31, 33, 34, 42, 44, 45, 46, 73 and 77 or equivalent.

AMC 147.400 Equivalent safety cases

(See MAR 147.400)

All proposed equivalent safety cases should be submitted to the AACM for consideration as an acceptable case.

AMC 147.400(b) Equivalent safety cases

(See MAR 147.400(b))

Education institutions may be exempt from:

- 1 The need to be an organisation as specified in MAR 147.10.
- 2 The need for an accountable manager but subject to the limitation that the institution appoints a senior person to manage the training organisation and such person has a budget sufficient to operate the organisation to the standard of MAR-147.
- 3 The need for the independent audit part of a quality system subject to the institution operating an independent schools inspectorate to audit the MAR-147 approved maintenance training organisation at the frequency required by MAR-147.

GM 147.405 Revocation, suspension, limitation or refusal to renew the approval or acceptance

(See MAR 147.405)

The procedure for handling representations regarding revocation, suspension, limitation or refusal to renew the Approval or Acceptance is contained in MAR-1 Airworthiness Procedure No. AP12

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Section 3.- Appendices

APPENDIX 1 – Basic training course duration

The minimum duration of a complete basic training course shall be as follows:

Basic Course	Duration (in hours)	Theoretical Training Ratio (in %)
A1	800	30 to 35
A2	650	30 to 35
A3	800	30 to 35
A4	800	30 to 35
B1.1	2400	50 to 60
B1.2	2000	50 to 60
B1.3	2400	50 to 60
B1.4	2400	50 to 60
B2	2400	50 to 60
B3	1000	50 to 60

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APPENDIX 2 – Recommended format of Maintenance Training Organisation Exposition (MTOE)

The following subject headings form the basis of the MTOE required by MAR 147.140.

Whilst this format is recommended, it is not mandatory to assemble the MTOE in this manner as long as a cross reference index is included in the MTOE as an appendix and the Part 1 items remain in Part 1.

Part 2, 3 and 4 material may be produced as separate detailed manuals subject to the main exposition containing the part 2, 3 and 4 fundamental principles and policy on each item. It is then permitted to delegate the approval of these separate manuals to the senior person but this fact and the procedure should be specified in para 1.11.

Where an organisation is approved in accordance with any other MAR(s) which require an exposition it is acceptable to combine the exposition requirements by merging the Part 1 items and adding the parts 2, 3 and 4. When this method is used, it is essential to include the cross reference index of Part 4 item 4.3.

PART 1 – MANAGEMENT

- 1.1 Corporate commitment by accountable manager
- 1.2 Management personnel
- 1.3 Duties and responsibilities of management personnel, instructors, knowledge examiners and practical assessors
- 1.4 Management personnel organisation chart
- 1.5 List of Instructional and Examination Staff

Note: A separate document may be referenced

- 1.6 List of approved addresses
- 1.7 List of Sub-contractors as per MAR 147.145(d)
- 1.8 General description of facilities at para 1.6 addresses
- 1.9 Specific list of courses approved by the Authority
- 1.10 Notification procedures regarding changes to organisation
- 1.11 Exposition and associated manuals amendment procedure

PART 2 – TRAINING AND EXAMINATION PROCEDURES

- 2.1 Organisation of courses
- 2.2 Preparation of course material
- 2.3 Preparation of classrooms and equipment
- 2.4 Preparation of workshops/maintenance facilities and equipment
- 2.5 Conduct of basic knowledge & practical training
- 2.6 Records of training carried out

-
- 2.7 Storage of training records
 - 2.8 Training at locations not listed in para 1.6
 - 2.9 Organisation of examinations
 - 2.10 Security and preparation of examination material
 - 2.11 Preparation of examination rooms
 - 2.12 Conduct of examinations
 - 2.13 Conduct of basic practical assessments
 - 2.14 Marking and record of examinations
 - 2.15 Storage of examination records
 - 2.16 Examinations at locations not listed in para 1.6
 - 2.17 Preparation, control & issue of basic training course certificates
 - 2.18 Control of sub-contractors

PART 3 – TRAINING SYSTEM QUALITY PROCEDURES

- 3.1 Audit of training
- 3.2 Audit of examinations
- 3.3 Analysis of examination results
- 3.4 Audit and analysis remedial action
- 3.5 Accountable manager annual review
- 3.6 Qualifying the Instructors
- 3.7 Qualifying the Examiners
- 3.8 Records of qualified Instructors & Examiners

PART 4 – APPENDICES

- 4.1 Example of documents and forms used
- 4.2 Syllabus of each training course
- 4.3 Cross reference Index - if applicable

APPENDIX 3 - Certificate of Successful Training Course Completion or Examination Pass Only

The MAR-147 approved maintenance training organisation is required to issue certificates to students at the successful completion of maintenance training within the limitations of the approved scope of training. Alternatively the MAR-147 approved maintenance training organisation is required to issue certificates to candidates who successfully passed examinations requested by the AACM

The following two types of certificate are envisaged:

- 1 A basic maintenance training or examination certificate
- 2 An aircraft type training or examination certificate

Examples of each certificate are contained in the following pages.

CERTIFICATE OF RECOGNITION

MAR-147 APPROVED BASIC TRAINING COURSE OR BASIC EXAMINATION

This Certificate of recognition is issued to:

NAME

ADDRESS

By (may be pre-printed) _____ an organisation approved
to the requirements of MAR-147 by the AACM under approval reference _____

This Certificate confirms that the above named person either successfully passed the approved
basic training course or the basic examination stated below:

BASIC TRAINING COURSE or/and BASIC EXAMINATION
LIST OF MAR-66 MODULES / DATE OF EXAMINATION PASSED

Signed: _____ Certificate No _____

For: (may be pre-printed) _____ Date: _____

CERTIFICATE OF RECOGNITION

MAR-147 APPROVED AIRCRAFT TYPE MAINTENANCE TRAINING COURSE OR AIRCRAFT TYPE EXAMINATION

This Certificate of recognition is issued to:

NAME

ADDRESS

By (may be pre-printed) _____ an organisation approved
to the requirements of MAR-147 by the AACM under approval reference _____

This Certificate confirms that the above named person either successfully passed the approved
aircraft type training course or aircraft type examination stated below:

AIRCRAFT TYPE TRAINING COURSE
START AND END DATE
SPECIFY THEORETICAL ELEMENTS OR PRACTICAL
ELEMENTS

Signed: _____ Certificate No _____

For: (may be pre-printed) _____ Date: _____

AACM Form 149, Issue 1

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**APPENDIX 4 – Sample of MAR-147 Maintenance Training And Examination
Organisation Approval Certificate/Schedule**

<p>澳門特別行政區 REGIÃO ADMINISTRATIVA ESPECIAL DE MACAU</p>  <p>民航局 AUTORIDADE DE AVIAÇÃO CIVIL CIVIL AVIATION AUTHORITY</p>
<p>MAR-147 MAINTENANCE TRAINING AND EXAMINATION ORGANISATION APPROVAL CERTIFICATE</p>
<p>REFERENCE : _____</p>
<p><i>Pursuant to the Air Navigation Regulation of Macao and all pertinent legislation, directives and requirements in force in Macao, and subject to the conditions specified below, the Civil Aviation Authority hereby certifies</i></p>
<p>NAME OF ORGANISATION</p>
<p>ADDRESS OF ORGANISATION</p>
<p><i>as a MAR-147 maintenance training organisation approved to provide training and conduct examinations listed in the attached approval schedule and issue related certificates of recognition to students.</i></p>
<p>CONDITIONS:</p>
<ol style="list-style-type: none"> 1. <i>This approval is limited to that specified in the scope of approval section of the MAR-147 approved maintenance training organisation exposition, and</i> 2. <i>This approval requires compliance with the procedures specified in the MAR-147 approved maintenance training organisation exposition, and</i> 3. <i>This approval is valid whilst the MAR-147 approved maintenance training organization remains in compliance with MAR-147.</i> 4. <i>Subject to compliance with the foregoing conditions, this approval shall remain valid until any specified date of expiry unless the approval has previously been surrendered, superseded, suspended or revoked by the Civil Aviation Authority.</i>
<p>Macao, _____ (Date of Issue)</p>
<p>Date of Expiry _____</p>
<p>_____ CHAN Weng Hong President</p>
<p>AACM Form Eleven, Issue 2 Page 1 of 2</p>

澳門特別行政區
REGIÃO ADMINISTRATIVA ESPECIAL DE MACAU



民航局
AUTORIDADE DE AVIAÇÃO CIVIL
CIVIL AVIATION AUTHORITY

MAR-147 MAINTENANCE TRAINING AND EXAMINATION ORGANISATION APPROVAL SCHEDULE

ORGANISATION NAME : _____

REFERENCE : _____

CLASS	CATEGORY		LIMITATIONS
BASIC	B1	TB1.1	AEROPLANES TURBINE
		TB1.2	AEROPLANES PISTON
		TB1.3	HELICOPTERS TURBINE
		TB1.4	HELICOPTERS PISTON
	B2	TB2	AVIONICS
	B3	TB3	PISTON-ENGINE NON-PRESSURISED AEROPLANES 2000 KG MTOM AND BELOW
	A	TA1.1	AEROPLANES TURBINE
		TA1.2	AEROPLANES PISTON
		TA1.3	HELICOPTERS TURBINE
		TA1.4	HELICOPTERS PISTON
TYPE/TASKS	B1	T1	QUOTE AIRCRAFT TYPE
	B2	T2	QUOTE AIRCRAFT TYPE
	A	T3	QUOTE AIRCRAFT TYPE
	C	T4	QUOTE AIRCRAFT TYPE

This training / examination approval schedule is valid when working in accordance with MAR-147 approved maintenance training organisation exposition Ref: _____

Macao, _____ *(Date of Issue)*

CHAN Weng Hong
President